
Jenzabar CX

Interactive Voice Response



Implementation Guide

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JENZABAR, INC.
INTERACTIVE VOICE RESPONSE IMPLEMENTATION GUIDE

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SECTION 1 - USING THIS MANUAL

Overview

Purpose of This Manual

This manual provides technical information required to install, customize, and maintain the Interactive Voice Response (IVR) system within CARS Solution.

Intended Audience

This manual is for use by those individuals responsible for the installation, customization, and maintenance of the IVR system within CARS Solution.

How to Use This Manual

If you are not familiar with the processes and features of the IVR system, read the manual for:

- Detailed reference information about how the product works
- Procedures for customizing and maintaining the product

If you are familiar with the processes and features of the IVR system and just need specific reference information or a procedure, look through the table of contents or index and refer to the pages you need.

Product Differences

This manual contains information for using all features developed for the IVR system. Your institution may or may not have all the features documented in this manual.

Structure of This Manual

This manual contains both general reference information and procedures for installing, customizing, and maintaining the IVR system. The organization of the manual is as follows:

Overview information

- Section 1 - Information about using this manual
- Section 2 - Overview information about the product

IVR procedures

- Section 3 - Procedures to install and customize your processes

Product reference information

- Section 4 - Using the IVR system vocabulary

Reference information

- Index

Related Documents and Help

The following resources are also available to assist you in installing, customizing, maintaining, and using the IVR system:

QuickMate online help

- Using QuickMate*
- Using CARS Solution*

Terminology

- Master Glossary*

UNIX-based help

Help command (<Ctrl-w>) in screens and menus

User guides

Using CARS Solution

Conventions Used in This Manual

Introduction

Jenzabar, Inc. has established a set of conventions to help you use this manual. The list of conventions presented below is not exhaustive, but it includes the more frequently used styles and terms.

Style Conventions

CARS Solution technical manuals observe the following style conventions:

Boldface type

Represents text that you type into the system (e.g., Type **UNDG**), command names (e.g., **Finish**), or keys you use to execute a command or function (e.g., **<Enter>**).

Bulleted lists

Show items not ranked or without a sequential performance.

CAUTION:

Indicates a caution or warning of a potential risk or condition.

<Enter>

Represents the Enter, Return, Line Feed, or ↵ key on your keyboard.

Italic type:

Is used in any of these ways:

- To represent a new or key term
- To add emphasis to a word
- To designate a program name (e.g., *identry*) within paragraphs
- To cross-reference a section of text
- To represent a variable for which you substitute another variable (e.g., substitute *filename* with an appropriate filename)

<Key name>

Represents a key that you must press.

Note:

Indicates a note, tip, hint, or additional information.

Numbered lists

Show ranking of items or sequence of performance.

Percent symbol

Indicates the standard UNIX prompt. Your prompt may vary.

Pound symbol

Indicates the standard UNIX superuser prompt identifying that the user has additional permissions. Your prompt may vary.

Quotation marks

Represent information written in this manual exactly as it appears on the screen (e.g., The message “Now Running...” appears).

CARS Solution-Specific Terms

Some terms used in this manual may be unfamiliar to you, either because they are terms you have not used before or because Jenzabar, Inc. has assigned a slightly different meaning to a familiar term. The following list identifies and explains the most common CARS Solution-specific terms:

Application

One or more software programs that enable you to perform a particular procedure, such as entering student information.

Data

Specific information you enter into fields on a particular data entry screen.

Enter

To type information on a keyboard and execute by any of the following actions:

- Pressing the **<Enter>** key
- Clicking on the **OK** button
- Selecting **Finish**

F key

Any of the function keys located on your keyboard (e.g., **<F1>**).

Hot key

The capitalized and underlined (or highlighted) letter of a command on a menu.

ID

The number assigned to each student or organization associated with your institution (e.g., 12345).

Institution

An established organization of postsecondary education that supports all operating functions (e.g., a college or university).

Parameter

A variable in the system that is given a constant value for a specific application (e.g., a date can be a parameter for producing a report).

Select

To execute a command by any of the following actions:

- Performing the keystrokes
- Pressing the hot key
- Highlighting the command or option and pressing **<Enter>**
- Clicking on the icon or button with the mouse

System

The Jenzabar, Inc. product, CARS Solution.

Keystrokes

When you see two keys separated by a dash (e.g., **<Ctrl-c>**), hold down the first key (**<Ctrl>**) while pressing the second (**<c>**).

Capitalized Words

The first letter of each word in a command, option, field name, or menu or screen title is capitalized in CARS Solution technical manuals to set those terms apart from regular text.

SECTION 2 - GETTING STARTED WITH IVR SETUP FOR REGISTRATION

Introduction

This section provides the following:

- A list of the tools for setting up the IVR system for Registration
- A description of how the CARS Solution and IVR systems interact
- Preliminary information you need before setting up the IVR system for online student registration
- A list of documents containing additional setup information

What Is the EPOS IVR System?

The EPOS IVR system provides advanced features that enable you to implement and control Touchtone telephone applications. Using this system, you can control multiple telephone lines and manage programs called *scripts* that respond to callers.

Computer Communications Specialists, Inc. (CCS) provides the EPOS Corporation with the CCS FirstLine System containing interactive voice hardware and software. The CCS FirstLine System runs on a Personal Computer (PC) that uses the MS-DOS operating system. EPOS distributes CCS FirstLine computer systems that are tailored specifically for higher education applications.

IVR Documentation

CCS provides the following documents through the EPOS Corporation. Refer to these documents for information on setting up the EPOS IVR system to interact with CARS Solution:

CCS FirstLine System Operator's Appendix

Shows you how to start and operate the IVR system and provides detailed information about using the system utility programs.

ScriptWrite Application Development Appendix

Shows the following:

- How to define and implement an IVR application
- Detailed information about the ScriptWrite translation table, vocabulary, and database utility programs

ScriptWrite Programmer's Appendix

Provides you with technical information about the ScriptWrite utility programs and programming language.

How Do the CARS Solution and IVR Systems Interact?

The EPOS IVR system runs on a PC using DOS. The IVR system uses a special script called *varegent.scs* that Jenzabar, Inc. created to initiate automated telephone dialogs with student callers. Using this script, the IVR system interacts with CARS Solution software to allow callers to use the CARS Solution Registration product as a Touchtone Registration interface to the IVR system.

The IVR system functions much like a data entry operator. Like an operator, the IVR system translates a request from a student's Touchtone telephone and enters the request into CARS Solution Registration. CARS Solution Registration processes the data and displays the results of the process on a screen that the IVR system reads. The IVR system reads the screen and translates the data it sees into phrases that are spoken to student callers.

For example, if a student enters a selection from a Touchtone telephone to add a course, the IVR system accepts and enters the input into CARS Solution Registration. If the course section for which the student is registering is full, CARS Solution Registration displays a message in the

form of special codes that the IVR system interprets. When the course section is full, the IVR system says, "This section is full."

Distributed Processing

To run CARS Solution Registration through the IVR system, you must set up registration data on both the CARS Solution and IVR systems. The CARS Solution relational database contains data required for students to register using a Touchtone telephone. You must use CARS Solution software to set up and download some of this database information to the IVR system. The IVR system uses the downloaded data to perform validation processing, reducing the amount of processing that the CARS Solution host must perform.

For example, prior to sending a course reference number to the CARS Solution host, the IVR system validates the reference number. If the reference number is invalid, i.e., it does not exist in the valid registration data, the IVR system informs the caller that an invalid reference number was entered. In this situation, CARS Solution does not perform any processing.

Preparing the CARS Solution and IVR Systems for Touchtone Registration

Introduction

Before you set up the IVR system and CARS Solution Registration, you must first verify that your institution has installed both the CARS Solution Course/Class Schedule and CARS Solution Registration products. You cannot process Touchtone Registration on the IVR system unless you have installed these products on your system.

This section provides the additional steps necessary to prepare CARS Solution and the IVR system for Touchtone Registration.

IVR Preparation

The following additional phases are required to prepare CARS Solution and the IVR system for Touchtone Registration:

CARS coordinator

Ensures that your institution has enough asynchronous lines on the CARS Solution system (i.e., one asynchronous line per telephone line dedicated to the IVR system).

Campus Telecommunication office

Ensures that your institution has access to a telephone network with up to as many telephone lines as your institution has on its IVR system.

CAUTION: Be sure that your institution has enough trunk telephone lines to the central office to avoid disrupting normal campus communication. Your institution is responsible for the IVR system's impact on the overall telephone system.

Registration office

Develops informative and easy-to-understand instructions that explain to students how to register using the IVR system.

- Verifies that the Academic Calendar record is set up appropriately for the session(s) Touchtone Registration uses
- Verifies that all Course Records, Section Records, Meeting Records, and Registration tables are set up appropriately for Touchtone Registration
- Verifies that the ID, profile, and program enrollment records are set up correctly for students who are to register using IVR registration
- Verifies that the *setrefno* program has been run to assign reference numbers to each course Touchtone Registration will use

Note: The Touchtone Registration product processes only course sections that have reference numbers.

IVR vendor and Computer Center personnel

Do the following:

- Install the IVR system
- Ensure the telephone lines and asynchronous lines all meet at one location and a regular power supply exists with at least two outlets

Registration office and Computer Center personnel

Conduct the necessary testing to ensure the IVR system has been set up correctly.

The Setrefno Program

You must run the *setrefno* program to assign reference numbers to each course that the Touchtone Registration product needs to access. *Setrefno* is a CARS Solution C program that defines and produces reference numbers for every section within a specified academic session.

Students enter course reference numbers on a Touchtone telephone to add and drop courses through the IVR system. Refer to the *Course/Class Schedule Technical Manual* for instructions on running the *setrefno* program.

SECTION 3 - SETTING UP THE IVR SYSTEM

Creating the Directory Structure on the IVR PC

Introduction

This section provides the steps for setting up the IVR system for Touchtone Registration.

To prepare the IVR system for Touchtone Registration, you must first set up a directory structure on the PC containing the IVR system. The directory structure contains the source code and data files that the IVR system requires to interact with the CARS Solution Registration product.

How to Create the IVR Directory Structure

The following steps are necessary to create the IVR directory structure on the PC containing the IVR system. Enter all of the following commands at the DOS prompt on the hard drive of the PC containing the IVR system:

1. Enter **cd **
2. Enter **md va** to create the main IVR directory
3. Enter **cd \va** to change the current directory to the va directory
4. Enter **md i** to create a directory specific to the Release I product of CARS Solution
5. Enter **cd i**
6. Enter each of the following commands separately:
 - **md dat**
 - **md modules**
7. Enter **cd data**
8. Enter **md regent**
9. Enter **cd \val\modules**
10. Enter each of the following commands separately:
 - **md regent**
 - **md comm**
 - **md lib**
 - **md va**

Special Files in the IVR Directory Structure

The following three files must reside in the \va\data\regent directory on the PC:

- ac.fd
- ivrmsg.fd
- sec.fd

These three files contain indexing information called file descriptions. IVR uses these file descriptions to index three corresponding data files that you download to this directory later in the setup process. If you do not have copies of these files, contact Jenzabar, Inc. to make arrangements to receive the files.

Setting Up Personal Identification Numbers for Students

Introduction

To establish extra security for the data in Touchtone Registration, you must set up the IVR system to accept Personal Identification Numbers (PINs) from each student who uses Touchtone Registration. Each student who calls the IVR system must enter the student's social security number or ID number *and* a PIN.

Setting Up PINs for Students

To assign PINs to students, you must enter unique positive integers in the password field of each student's profile record. Since CARS Solution does not provide an automated process for entering PIN numbers, you must use your institution's methods to assign PIN numbers to students.

Adding an IVR Login

Introduction

Before IVR can interact with CARS Solution, you must set up a login for IVR on CARS Solution. The IVR system uses this login to establish a connection from the PC to the CARS Solution host. Through this login, IVR runs the CARS Solution Registration product.

This login is the means by which the IVR software on the PC can establish the proper connection with the host system to run Touchtone Registration.

Creating a Login for IVR

Follow the procedure that your institution has established to add a login with a login name of "ivr." Create a basic login on the host system. Remove any login commands that are unnecessary to the Touchtone Registration process. Since the IVR process will run this login in the background, do not include any commands requiring user input in the login file. For example, make sure that the login does not run the CARS Solution menu or request user input for database or terminal type selection.

How to Modify the IVR Login

After you have created a login with a name of "ivr," you must modify the .login file in the IVR user's home directory. You must also turn off the "sticky ID" feature of CARS Solution. This feature causes the ID selection logic of CARS Solution to keep the most recently queried ID in the ID field on an ID query screen. The IVR system is not compatible with this feature. You should make the following modifications to the IVR user's login and home directory:

Note: Refer to the example .login file following this list.

1. On the CARS Solution system, enter **cd ~ivr** to go to the IVR user's home directory.
2. Enter **vi .login** to edit the IVR user's login file.
3. Enter the **set logindb** command above the "source ~/.\$SHEL/login" command line and assign it to the name of the database on which Touchtone Registration runs.

Example: If your database is named "carsi," add the following command: **set logindb=carsi**

4. Enter the **autologout=0** command under the "Local commands" section of the login file.
5. Enter the **set term=** command under the "Local commands" section of the login file. Assign the terminal type that corresponds to the type of terminal the IVR system is using to view the CARS Solution Registration product.

Example: set term=vt100-pro

6. Enter the **HOME** variable under the "Local commands" section of the login file and assign it to the path of the IVR user directory.

Example: setenv HOME /usr/carsids/ivr

7. Enter the **TERMBOX** variable under the "Local commands" section of the login file and assign it to the character string associated with the terminal type you are using.

Example:

For a vt100-pro terminal, you would add the following: **setenv TERMBOX xqlkmj**

8. Save the changes in the .login file.
9. Enter **cd ~ivr** to access the IVR user's home directory.

10. Enter **rm ~ivr/.idsdef** to remove the old .idsdef file.
11. Enter **touch ~ivr/.idsdef** to create the new .idsdef file.
12. Enter **chmod 000 ~ivr/.idsdef** to set the correct permissions on the .idsdef file.

Example Login File

Following is an example of an IVR user's .login file.

```
#
# .Login - Standard commands to be executed are in ../../skel/login
#
set SKEL=skel
if ($?CARSV) then
    if (-d ../../skel.$CARSV) set SKEL=skel.$CARSV
end if

set logindb=devi
source ../../$SKEL/login
#
# Local commands to be executed go here
#
set autologout=0
set term=vt100-pro
setenv HOME /usr/carsidsivr
setenv TERMBOX xqlkmj
```

The IVR Login Macros

In order for the IVR system to use the iv user login appropriately, you must define the IVR login macros. The following is the list of login macros and how each should be defined. Make note of the values you choose for these macros so you can later define them in the IVR macro file. See the *Setting Up IVR Macros* section in this manual.

IVR_HOST_ILOGIN

Indicates the command sequence that IVR must send to CARS Solution to initiate a login on the host system.

IVR_IPROMPT

Indicates the prompt on the CARS Solution host that IVR sees when it logs onto the host.

IVR_IPROMPT_LEN

Indicates the length of the value defined in the IVR_IPROMPT macro.

IVR_PASSWD

Indicates the password that IVR must enter to login as the IVR user.

IVR_PASSWD_PRMP

Indicates the password prompt that IVR sees after it sends the login command sequence contained in the IVR_HOST_ILOGIN macro.

Setting Up the Registration Parameters Screens for IVR

Introduction

The Registration Parameters screen for IVR contains the default settings that the Registration product uses to register students in courses. You must define the default settings and modify them according to your institution's policies. The default settings control use of the following:

- Academic sessions
- Academic catalogs
- Effective date of registration
- Drop reason code
- Prerequisite, corequisite, and concurrent requisite checking
- Repeat checking

How to Modify the IVR Parameters Screen

The following steps are necessary to modify the default values for the Registration Parameters screen for IVR (ivrparms).

Note: You may need to repeat this procedure every time you set up the IVR system for a new academic session, because the sessions available for registration will change.

Only the default values that you can change within the program screen itself are listed. See the next few pages for a description of the default values defined by macros.

1. Enter **cd \$CARSPATH/modules/regist/progscr/regent** to access the file on CARS Solution.
2. Enter **make co F=ivrparms** to check out the parameters screen file.
3. Enter **vi ivrparms** to view the parameters screen file.
4. Modify the default values for any of the following fields in the attributes section of the ivrparms program screen:
 - sessions (Academic Sessions field)
 - cat (Academic Catalogs field)
 - edate (Effective Date field)
 - a0 (Drop Reason Code field)

Note: Do not modify the attributes for any fields other than those listed above.

5. Save your changes.
6. Enter **make cii F=ivrparms L="Modify defaults for IVR"** to check in and install your changes.

Default Macro Values

The following lists the macros that are specific to the IVR parameters screen. Make note of the values you choose for these macros so you can later define them in the IVR macro file.

IVR_ENABLE_ADDRPT

Indicates whether or not a student can repeat a course; define as **Y** or **N**.

IVR_ENABLE_CNCRNTREQ_ON

Indicates whether or not to perform course concurrent requisite checking in Touchtone Registration; define as **Y** or **N**.

IVR_ENABLE_COREQ_ON

Indicates whether or not to perform course corequisite checking in Touchtone Registration;
define as **Y** or **N**.

IVR_ENABLE_PREREQ_ON

Indicates whether or not to perform course prerequisite checking in Touchtone Registration;
define as **Y** or **N**.

Setting Up IVR Macros

Introduction

To set up Touchtone Registration according to your institution's requirements, you must modify the IVR macros in the following files:

- \$CARSPATH/macros/custom/student
- \$CARSPATH/macros/custom/ivr

Note: Any time you change the values of IVR macros in the IVR m4 macro file, you must run the Delete All User Phrases menu option to reset the phrases in the IVR Vocabulary and IVR Message records. Typically, you should not change the IVR m4 macros after you have set up and recorded the IVR system vocabulary as this will delete the current vocabulary and restore the original sent with the system.

Preparing to Define IVR Macros

Before you define macros, you must review the lists of IVR vocabulary in *Using the IVR System Vocabulary* in this manual. Reviewing this section should help you decide how to define the IVR macros. The vocabulary lists contain information about macro values that determine how your phrases are defined.

A Note About the IVR Mail Messages

The IVR macros file contains macros that indicate who at your institution should receive mail messages from the IVR system. The IVR system sends mail messages containing status and warning information about what occurs during Touchtone Registration. The IVR system sends mail messages when you shut down or start the IVR system. The messages appear in the online mail boxes of the recipients that you specify in the IVR macros file. See the IVR macro file for further information about the mail message macros.

How to Modify the IVR Macros

Follow these steps to modify the IVR m4 macros on CARS Solution:

1. Enter **cd \$CARSPATH/macros/custom** to access the macros that enable the IVR system menu and maintain reference numbers on the CARS Solution host.
2. Enter **make co F=student** to check out the student macro file.
3. Enter **vi student** to view the file student macro file.
4. Find the "ENABLE_REGIST_SET_REFNO" macro. Define this macro as **Y**.
5. Find the "ENABLE_IVR" macro. Define this macro as **Y**.
6. Save the student macro file.
7. Enter **make cii F=student L="Define macros for IVR"** to check in and install the file.
8. Enter **cd \$CARSPATH/macros/custom** to access the macros that control the setup for Touchtone Registration.
9. Enter **vi ivr** to view the IVR macro file.
10. Do the following:
 - Analyze the value of each macro, based on the setup you need for Touchtone Registration.
 - Change the appropriate macros according to the needs of your institution. (Each macro in the ivr macro file has a corresponding description that indicates what the macro is and how it should be defined.)

11. Save the IVR macro file.
12. Enter **make cii F=ivr L="Define macros for IVR"** to check in and install the macro file.

Compiling the Software

Introduction

When you change the values of the macros in the Student or IVR macro files, you need to compile source code for Touchtone Registration and the Registration Entry program. This section includes instructions on how to compile the source code for IVR and the Registration Entry program. For additional files that you may need to compile for the Registration program, see *Implementing Registration*.

How to Compile IVR Software on the CARS Solution

Follow these steps to compile the IVR and Registration software on CARS Solution. Enter all of the commands in this list on the CARS Solution system at the UNIX prompt.

- The steps in the list below include installing the source code files for the IVR system.
 - The IVR system source code files are located in the directories under the \$CARSPATH/modules/ivr/ivrsources directory. Several IVR macros are referenced in these source code files. The *make* program translates and compiles the source code files according to the values of the IVR macros.
 - The *make* program places the compiled IVR source code files in the \$CARSPATH/install/oth directory.
1. Enter **cd \$CARSPATH/macros/custom** to access the macros directory.
 2. Enter **make reinstall F="student ivr"** to reinstall the student and IVR macro files.
 3. Enter **cd \$CARSPATH/modules/regist/progscr/regist** to access the program screens for the CARS Solution Registration product.
 4. Enter **make reinstall F="ivrcourse ivrhead ivrparms ivrseclist"** to reinstall the Touchtone Registration program screens.
 5. Enter **cd \$CARSPATH/modules/ivr** to access the files in the Touchtone Registration module.
 6. Enter **make reinstall F=ALL** to reinstall all the files in the Touchtone Registration module.
 7. Enter **cd \$CARSPATH/src/regist/regist** to access the files for the CARS Solution Registration product.
 8. Enter **make reinstall** to reinstall the files for the CARS Solution Registration product.
 9. Enter **cd \$CARSPATH/menuopt/ivr** to access the menu options specific to Touchtone Registration.
 10. Enter **make reinstall F=ALL** to reinstall the menu options specific to Touchtone Registration.
 11. Enter **cd \$CARSPATH/menusrc/student/regist/regist** to access the menu source files specific to Touchtone Registration.
 12. Enter **make reinstall** to reinstall the menu source files specific to Touchtone Registration.
 13. Enter **cd \$CARSPATH/menusrc/student/regist/regist/ivr** to access additional menu source files specific to Touchtone Registration.
 14. Enter **make subs T=reinstall** to reinstall additional menu source files specific to Touchtone Registration.

How to Download IVR Source Code for a Network Connection

After the IVR source code is compiled on CARS Solution, you must download it to the PC containing the IVR system. You must download source code in the following modules: comm, lib, regent, and va. Follow these steps to download the IVR source code files and modules from CARS Solution to the PC containing the IVR system.

1. Enter **cd c:\pctcp** at the DOS prompt on the IVR system.
2. Enter **ftpsrv** at the DOS prompt on the IVR PC.
3. On the CARS Solution system, go to the Master Menu.
4. Select **Student Management** from the Master Menu.
5. Select **Registrar** from the Student Management: Main Menu.
6. Select **Registration** from the Student Management: Registrar Main Menu.
7. Select **IVR Maintenance** from the Registrar: Registration Menu.
8. Select **Download Files** from the Registrar: IVR Maintenance Menu.
9. Do you want to download one source file or all source files?
 - If one source file, then select **One Source File** from the Registrar: Download Files Menu. The Download One IVR Source File screen appears. In the IVR Source File field, enter the name of the file you want to download to the PC. Select **Finish**.
 - If all source files, then select **One Source Directory** from the Registrar: Download Files Menu. The Download One IVR Source Directory screen appears. In the IVR Source Directory field, enter **common**, **lib**, **regent**, or **va** to indicate what module you want to download. Select **Finish**.
10. Read any messages appearing on the screen and enter **Y** to verify that you are running ftpsrv on the IVR PC.
11. Repeat steps 8-10 as necessary to download the source files in each of the four modules.
12. Enter **Q** to exit ftpsrv on the IVR PC.

How to Download IVR Source Code for a Serial Connection

After the IVR source code is compiled on CARS Solution, you must download it to the PC containing the IVR system. You must download source code in the following modules: comm, lib, regent, and va. Follow these steps to download the IVR source code files and modules from CARS Solution to the PC containing the IVR system.

1. At the DOS prompt on the IVR system, access one of the module directories on the PC.

Note: The module directories are located in \val\modules and are named comm, regent, lib, and va. For example, enter **cd \val\modules\comm** to change the directory to the comm module.
2. From the PC containing the IVR system, run a standard communication program, such as PROCOMM.
 - You must use a communication program to logon to the host. You should not attempt to transfer files while logged onto the host unless you are doing so through a communication program.
 - The communication program that you use must be able to receive files with the *kermit* file transfer protocol.
3. From the communication program, logon to the CARS Solution host using your own login.
4. Enter **menu** to run the CARS Solution Master Menu.
5. Select **Student Management** from the CARS Solution Master Menu.

6. Select **Registrar** from the Student Management: Main Menu.
7. Select **Registration** from the Student Management: Registrar Main Menu.
8. Select **IVR Maintenance** from the Registrar: Registration Menu.
9. Select **Download Files** from the Registrar: IVR Maintenance Menu.
10. Do you want to download one source file or all source files?
 - If one source file, then select **One Source File** from the Registrar: Download Files Menu. The Download One IVR Source File screen appears. In the IVR Source File field, enter the name of the file you want to download to the PC. Select **Finish**.
 - If all source files, then select **One Source Directory** from the Registrar: Download Files Menu. The Download One IVR Source Directory screen appears. In the IVR Source Directory field, enter **common**, **lib**, **regent**, or **va** to indicate what module you want to download. Select **Finish**.
11. Read any messages appearing on the screen and enter **Y** to verify that you are running this process on a PC.
12. Perform the necessary steps to complete the data file downloads from within the communication program you are using.
 - Use the *kermit* file transfer protocol to download the files
 - Consult the documentation that came with the communication program for information about downloading files
13. Repeat steps 1-12 as necessary to download the source files in each of the four modules.

How to Compile Source Code Files On the IVR PC

After you have downloaded the IVR source code files from the CARS Solution host to the IVR system, you must compile the source code on the IVR system.

Follow these steps to compile the IVR source code on the PC containing the IVR system:

1. Enter **cd \val\modules\va** at the DOS prompt on the PC.
You access the directory with the IVR system source code.
2. Enter **copy varegent.scs va** to copy the *varegent.scs* script from the current directory to the main directory.
The interactive Touchtone Registration script *varegent.scs* is copied to the main directory on the PC.
3. Enter **cd va** at the DOS shell to return to the main directory.
You access the main directory for the IVR system on the PC.
4. Enter **edc varegent.scs**
A menu appears for the file *varegent.scs* that contains a list of function keys and each corresponding command.
5. Select **Save/Compile/Exit**
The Save-Compile-Exit screen appears.
6. Select **Save/Compile**
The following message appears: "Save as VAREGENT.SCS (Y/N):Y."
7. Do you want to save the file using the filename given?
 - If yes, press **<Enter>**
 - If no, enter a new filename and press **<Enter>**

The IVR system displays a blinking message, "=> Compiling VAREGENT.SCS <=."

After compiling, the system displays a message, "Compile successful. Do you wish to exit? (Y/N):Y."

8. Press **<Enter>** to exit the program.

A menu containing four commands appears.

9. Select **Quit** or **<Esc>** to exit the compile menu.

The DOS prompt appears.

Setting Up Registration Times for Touchtone Registration

Introduction

To increase system security and to restrict the number of students calling the IVR system at any one time, you can establish groups of students who may register only during specified times. The Regtime Table (regtime_table) allows you to define groups and indicate which students belong to these groups. The IVR system allows access only to student callers who belong to groups that meet criteria for registering while the IVR system is running. After you have established the groups as you want them, you must run the *Update Registration Groups* script to assign students to those groups. This section provides the following information:

- An example of the Regtime Table PERFORM screen
- A list and description of the fields on the Regtime Table PERFORM screen
- Information on how to access the PERFORM screen and ACE report for the Regtime Table from the CARS Solution menu
- Information on how to run the *Update Registration Groups* script to assign students to the groups you create

Regtime Table

Following is an example of the Regtime Table PERFORM screen.

REGTIME TABLE	
Group Number	[1]
Year	[199X]
Session	[FA]
Program	[UNDG]
Minimum Hours	[0.0]
Maximum Hours	[10.0]
Begin Date	[05/10/199X]
End Date	[05/15/199X]
Begin Time	[0800]
End Time	[1600]

Fields in the Regtime Table

The following is a list of fields and their descriptions that appear on the Regtime Table PERFORM screen. Use this list to define the groups that you need for setting up registration times.

Begin and End Dates

Identify the date (mm/dd/yyyy) range during which students in this group may register.

Begin and End Times

Identify the range of time during the day when students in this group may register. Enter the times using standard military time format (e.g., 12 o'clock noon = 1200; 4 o'clock p.m. = 1600).

Group Number

Identifies the number of the group. The number of the group can be any number from 0 to 9999.

Minimum and Maximum Hours

Identify the total number of cumulative hours a student must have in order to be included in this group; students with total cumulative hours within this range will be assigned to this group by the Update Registrations Groups script.

Program

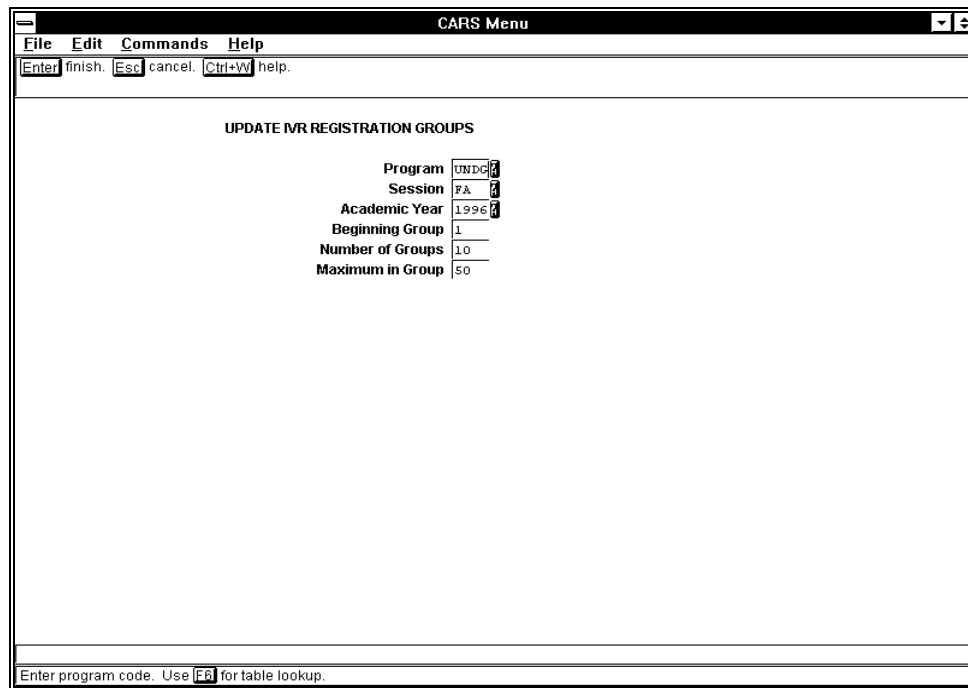
Identifies the academic program for which this group is valid. The program can be any valid program that is defined in the Program table.

Year and Session

Identify the year and session for which this group is valid. The year and session can be any valid year and session combination that is defined in the Academic Calendar record.

Update Registration Groups Script

To assign students to the appropriate groups defined in the Regtime Table, you must run the *Update Registration Groups* script. This script updates the *grp_no* field in the profile record for each student assigned to a group. Following is an example of the program screen for the *Update Registration Groups* script.



The screenshot shows a terminal window titled "CARS Menu". At the top is a menu bar with "File", "Edit", "Commands", and "Help". Below the menu bar is a status line that reads: "Enter finish. Esc cancel. Ctrl+W help." The main area of the window is titled "UPDATE IVR REGISTRATION GROUPS". Below this title are several fields with their corresponding values: "Program" is "UNDG", "Session" is "FA", "Academic Year" is "1996", "Beginning Group" is "1", "Number of Groups" is "10", and "Maximum in Group" is "50". At the bottom of the window is another status line that reads: "Enter program code. Use F6 for table lookup."

Fields on the Update IVR Registration Groups Program Screen

The following is a list of fields and their descriptions that appear on the Update IVR Registration Groups program screen. Use this list to complete the necessary fields to update a student's registration group.

Academic Year

Identifies the academic year from which students are selected (e.g., 1996).

Beginning Group

Identifies the first group number for students with zero cumulative hours. The value of this field does not affect group numbers assigned to students with more than zero cumulative hours (e.g., 1).

Maximum in Group

Identifies the maximum number of students with zero hours that can be in any one group. The value of this field does not affect the number of students with more than zero cumulative hours that the script adds to other groups (e.g., 50).

Number of Groups

Identifies the number of groups assigned for students with zero cumulative hours. The value of this field does not affect group numbers assigned to students with more than zero cumulative hours (e.g., 10).

Program

Identifies the academic program from which students are selected (e.g., UNDG).

Session

Identifies the academic session from which students are selected (e.g., FA).

Update Registration Groups Example

The `cum_earn_hrs` are used as the key into the `regtime_table` to access the appropriate group number for a student.

For students who have `cum_earn_hrs` of zero (0), this process spreads out those students over a series of groups, as specified in the following input parameters:

- `input_beg_grp`
- `input_num_grps`
- `max_in_grps`

The first group number used for students with zero (0) hours is *input_beg_grp*. The number of students assigned to that group number is *max_in_grps*. This process continues until *input_num_grps* is reached. At that point, any remaining students with zero hours are put in the last group number (i.e., *input_beg_grp* + *input_num_grps*).

Example: The total number of students is 250. The number of students having zero (0) hours is 75. Set up the input parameters as follows:

```
input_beg_grp   = 13
input_num_grps  = 5
max_in_grps     = 10
```

After running Update Registration Groups, you would have these groupings:

```
10 students with zero cum_earn_hrs in registration group 13.
10 students with zero cum_earn_hrs in registration group 14.
10 students with zero cum_earn_hrs in registration group 15.
10 students with zero cum_earn_hrs in registration group 16.
35 students with zero cum_earn_hrs in registration group 17.
```

The remaining 175 students would be put into registration groups according to their `cum_earn_hrs`.

How to Access the Regtime Table Screen

Follow these steps to access the Regtime Table PERFORM screen, the Regtime Table ACE report, and the *Update Registration Groups* script.

1. Select **Registration** from the Student Management: Registrar Main Menu.
2. Select **IVR Maintenance** from the Registrar: Registration Menu.
3. Do you want to update registration group numbers in the profile record?
 - If yes, select **Update Registration Groups** from the Registrar: IVR Maintenance Menu. The Update IVR Registration Groups screen appears.
 - If no, go to step 4.
4. Select **Table Maintenance** from the Registrar: IVR Maintenance Menu.
5. Do you want to produce an ACE report to list the entries in the Regtime table?
 - If yes, select **Regtime Report** from the Registrar: Table Maintenance Menu
 - If no, go to step 6 to access the Regtime Table PERFORM screen
6. Select **Regtime Table** from the Registrar: Table Maintenance Menu.

Removing Phrases and Setting Up the IVR Records

Introduction

This section includes information on maintaining the IVR Vocabulary record (ivrvocab_rec) and IVR Message record (ivrmsg_rec). To prepare the system for Touchtone Registration, you must do the following:

- Remove user phrases that exist in the IVR Vocabulary record
- Set up or modify the default entries in the IVR Vocabulary and IVR Message records

The IVR Vocabulary record (ivrvocab_rec) and IVR Message record (ivrmsg_rec) contain the phrases and messages that the IVR system uses to communicate with students and IVR administrators. The IVR Vocabulary record contains the phrases that IVR speaks to students who use Touchtone Registration. The IVR Message record contains messages that instruct IVR what actions to take when certain conditions are encountered by IVR.

For example, if a student registers for a course that counts as a repeated course, the Registration product displays a message number on the Registration screen. IVR reads this message number and looks up the number in a file containing the contents of the IVR Message record. The data in the IVR Message record entry could instruct IVR to speak a phrase to a student and/or send mail to the Registration office indicating that the student registered for the course again. See the *IVR Message Table Screen* section in this manual.

A user phrase is any phrase in the IVR Vocabulary record that has a phrase number greater than or equal to 2000. A user phrase describes information such as the title of a course, academic session, or academic program. Special IVR scripts process many records, including the Course, Section, and Academic Calendar records to create user phrases.

How to Remove Selected Phrases

Follow these steps to run the *Remove a Range of Phrases* menu option to remove a selected range of phrase numbers greater than or equal to 2000. Unlike the *Remove All User Phrases* menu option, this menu option does not update or reset phrase numbers less than 2000 in the IVR Vocabulary and IVR Message records.

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.
3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Phrase Numbers** from the Registrar: IVR Maintenance Menu.
5. Select **Remove a Range of Phrases** from the Registrar: Phrase Numbers Menu. The Remove Range of IVR Phrases screen appears.
6. In the Beginning Phrase Number field, enter the first phrase number you want to delete.
Note: You must specify a number greater than or equal to 2000.
7. In the Ending Phrase Number field, enter the last phrase number you want to delete.
Note: You must specify a number less than or equal to the maximum set in the IVR_END_USER_PHRASE field in the IVR macro file.
8. Select **Finish**, and then complete the Output Parameters screen to remove the specified phrases.

How to Set Up the IVR Records and Remove All User Phrases

You must run the *Remove All User Phrases* menu option from the Registrar: Phrase Numbers menu to remove all user phrases and set up the IVR Vocabulary and IVR Message records. The

Remove All User Phrases option runs a script that removes phrase numbers greater than or equal to 2000 in the IVR Vocabulary record. The script modifies phrase numbers in the IVR Vocabulary and IVR Message records that are less than 2000. The phrases are modified according to macro values defined in the IVR macro file.

Note: Any time you change the values of IVR macros in the IVR m4 macro file, you must run the *Remove All User Phrases* option to reset the phrases in the IVR Vocabulary and IVR Message records. Typically, you should not change the IVR m4 macros after you have set up and recorded the IVR system vocabulary.

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.
3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Phrase Numbers** from the Registrar: IVR Maintenance Menu.
5. Select **Remove All User Phrases** from the Registrar: Phrase Numbers Menu. The Remove All User Defined Phrases screen appears.
6. Select **Finish** and read any messages appearing on the screen.
7. Enter **Y** to indicate that you want to remove all IVR vocabulary phrases in the `ivrvocab_rec`.

Note: Although this option deletes all user-defined phrases in the `ivrvocab_rec`, it also sets up the `ivrmsg_rec` according to the values assigned to macros in the IVR macro file.

Setting Up IVR Phrases

Introduction

Before you can record voice phrases on the IVR system, you must run scripts from the CARS Solution menu that set up the vocabulary for courses, academic programs, and academic sessions. The scripts do the following:

- Search the CARS Solution database for data that can be translated into meaningful phrases for IVR to speak to student callers
- Construct the appropriate phrases based on the information stored in the Course record, Section record, Academic Calendar record, and Program table
- Assign a phrase number to each phrase that is created, and store the phrase number in each of these records

Note: The CARS Solution system IVR software assigns phrase numbers for only one vocabulary (i.e., English). If you want to create vocabularies for other languages, contact Jenzabar, Inc.

Important Maintenance Issues

Verify that your institution has run the Set Reference Number program (*setrefno*) to assign reference numbers to course sections. You must not run the *setrefno* program after you have set up IVR phrases, so make sure that every course section IVR will use has a reference number assigned to it.

Always use the procedure described in this section to create and maintain phrase numbers. Do not manually modify any of the phrase numbers in any of the records in the CARS Solution database.

Refer to this section every time your institution copies its course catalog from one session to the next. Although phrase numbers in the Course and Section records are also copied in this process, your institution may change the titles for some sections or courses. You must determine if you should set up IVR phrases each time you roll over your current catalog into another session.

How to Set Up Course Phrases

The *Assign Course Phrase No's* menu option controls a script that creates phrase numbers and the phrase texts for courses and sections. The script creates the phrase texts based on the titles of the courses and sections. The phrase texts are stored in the IVR Vocabulary record. Later in the IVR system setup process, you must use the IVR system voice utilities to record the phrase texts that this script creates. The script determines how to create the phrase numbers and phrase texts as follows:

- The script uses the section title, course title, and/or the course number to create the phrase texts.
- The script creates phrase texts and phrase numbers only for Course and Section records linked to the academic sessions and catalogs you specify.
- The script creates a phrase text from the Section record if the section title in the record is not blank.
- The script creates a phrase text from the Course record if the title in the Section record is blank.
- The script creates a phrase text consisting of only a course number (crs_rec.crs_no) if a title is not available in the Course or Section records. If you do not record a verbal phrase on the IVR system for this kind of course and section phrase, then IVR spells out the course number since there is no recorded phrase to speak.

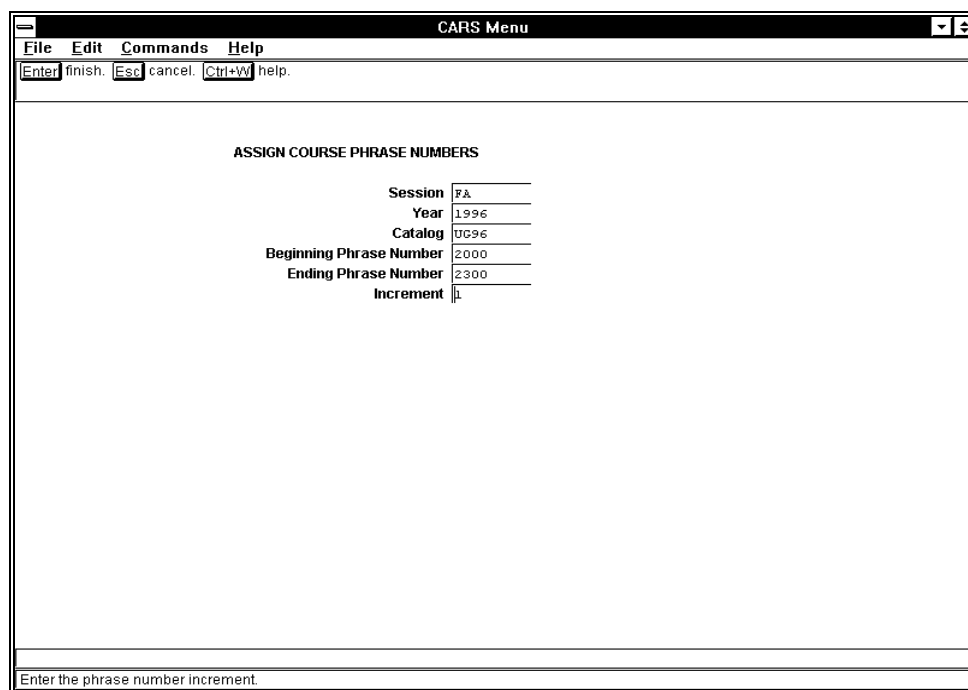
How to Access the Assign Course Phrase No's Menu Option

Follow these steps to access the *Assign Course Phrase No's* menu option:

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.
3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Phrase Numbers** from the Registrar: IVR Maintenance Menu.
5. Select **Assign Course Phrase No's** from the Registrar: Phrase Numbers Menu. The Assign Course Phrase Numbers screen appears.

Assign Course Phrase Numbers Screen

The following is an example of the Assign Course Phrase Numbers program screen.



CARS Menu

File Edit Commands Help

Enter finish. Esc cancel. Ctrl+W help.

ASSIGN COURSE PHRASE NUMBERS

Session	FA
Year	1996
Catalog	UG96
Beginning Phrase Number	2000
Ending Phrase Number	2300
Increment	1

Enter the phrase number increment.

Fields on the Assign Course Phrase Numbers Screen

The following is a list of fields and their descriptions that appear on the Assign Course Phrase Numbers program screen. Use this list to complete the fields to assign course phrase numbers.

Beginning Phrase Number

Identifies the first phrase number to assign to the first phrase. This phrase number must be greater than or equal to 2000.

Catalog

Identifies the academic catalog from which the IVR system selects courses and sections.

Ending Phrase Number

Identifies the last phrase number to assign to the last phrase. This phrase number must be less than or equal to 2500.

Increment

Identifies the increment between the phrase numbers that the IVR system assigns.

Example: An increment of 2 with a beginning phrase number of 2000 means the first phrase number assigned would be 2000, the second 2002, the third 2004, and so on.

Session

Identifies the academic session from which the IVR system selects courses and sections.

Year

Identifies the academic year from which the IVR system selects courses and sections.

How to Set Up Program Phrases

The *Assign Program Phrase No's* menu option controls the script that creates the phrase numbers and phrase texts for academic programs. The script creates the phrase numbers and phrase texts based on the code and text for each of the academic programs in the Program table. The phrase texts are stored in the IVR Vocabulary record. Later in the IVR system setup process, you must use the IVR system voice utilities to record the phrase texts that this script creates.

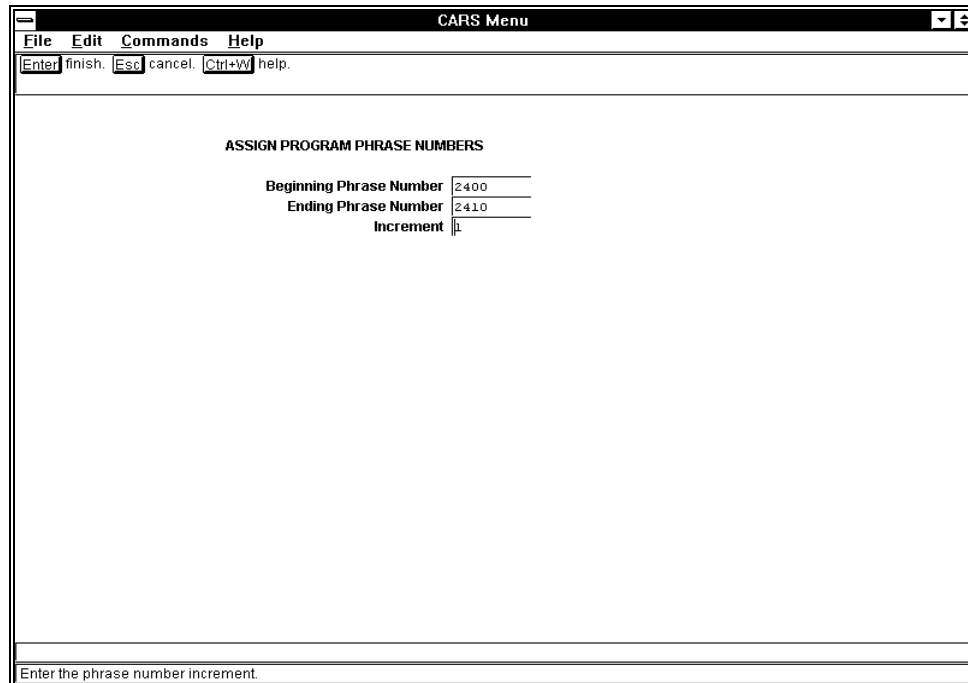
How to Access the Assign Program Phrase No's Menu Option

Follow these steps to access the *Assign Program Phrase No's* menu option:

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.
3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Phrase Numbers** from the Registrar: IVR Maintenance Menu.
5. Select **Assign Program Phrase No's** from the Registrar: Phrase Numbers Menu. The Assign Program Phrase Numbers screen appears.

Assign Program Phrase Numbers Screen

The following is an example of the Assign Program Phrase Numbers program screen.



ASSIGN PROGRAM PHRASE NUMBERS

Beginning Phrase Number	2400
Ending Phrase Number	2410
Increment	1

Enter the phrase number increment.

Fields on the Assign Program Phrase Numbers Screen

The following is a list of fields and their descriptions that appear on the Assign Program Phrase Numbers program screen. Use this list to complete the fields as necessary to assign program phrase numbers.

Beginning Phrase Number

Identifies the first phrase number to assign to the first phrase. This phrase number must be greater than or equal to 2000.

Ending Phrase Number

Identifies the last phrase number to assign to the last phrase. This phrase must be less than or equal to 2500.

Increment

Identifies the increment between phrase numbers that the IVR system assigns.

Example: An increment of 2 with a beginning phrase number of 2000 means the first phrase number assigned would be 2000, the second 2002, the third 2004, and so on.

How to Set Up Session Phrases

The *Assign Session Phrase No's* menu option controls the script that creates the phrase numbers and phrase texts for academic sessions. The script creates phrase numbers and phrase texts only for sessions that are linked to the academic program you specify. The phrase texts are stored in the IVR Vocabulary record. Later in the IVR system setup process, you must use the IVR system voice utilities to record the phrase texts that this script creates.

How to Access the Assign Session Phrase No's Menu Option

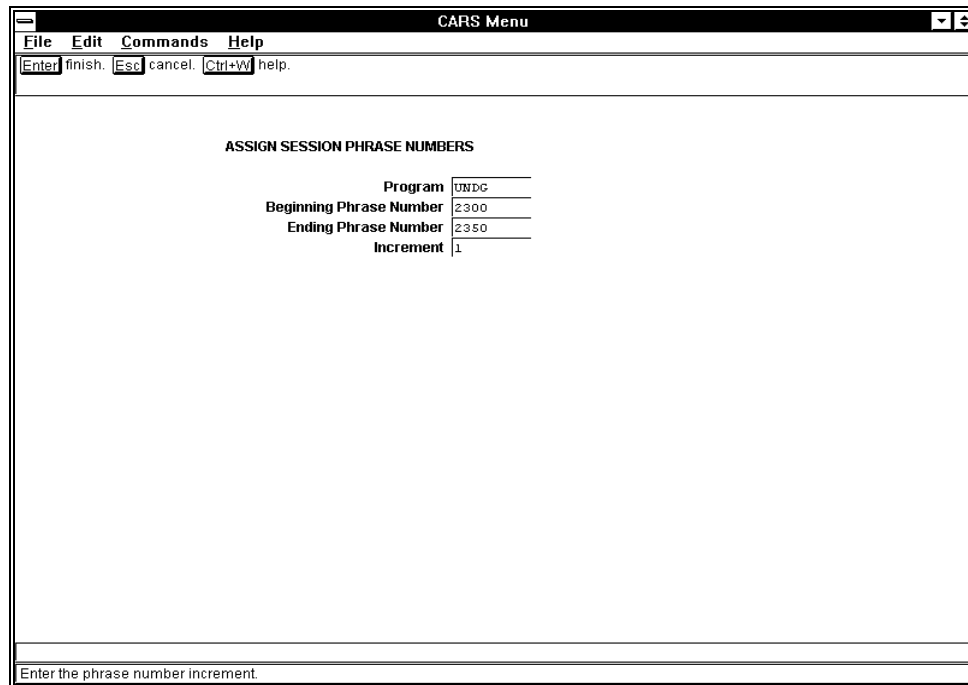
Follow these steps to access the *Assign Session Phrase No's* menu option:

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.

3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Phrase Numbers** from the Registrar: IVR Maintenance Menu.
5. Select **Assign Session Phrase No's** from the Registrar: Phrase Numbers Menu. The Assign Session Phrase Numbers screen appears.

Assign Session Phrase Numbers Screen

The following is an example of the Assign Session Phrase Numbers program screen.



ASSIGN SESSION PHRASE NUMBERS	
Program	UNDG
Beginning Phrase Number	2300
Ending Phrase Number	2350
Increment	1

Enter the phrase number increment.

Fields on the Session Phrase Numbers Screen

The following is a list of fields and their descriptions that appear on the Assign Session Phrase Numbers program screen. Use this list to complete the fields as necessary to assign course phrase numbers.

Beginning Phrase Number

Identifies the first phrase number to assign to the first phrase. This phrase number must be greater than or equal to 2000.

Ending Phrase Number

Identifies the last phrase number to assign to the last phrase. This phrase number must be greater than or equal to 2500.

Increment

Identifies the increment between phrase numbers that are assigned.

Example: An increment of 2 with a beginning phrase number of 2000 means the first phrase number assigned would be 2000, the second 2002, the third 2004, and so on.

Program

Identifies the academic program from the specified academic sessions.

Reviewing the IVR Vocabulary and IVR Message Records

Introduction

After you have set up the IVR Vocabulary and Message records and assigned all phrase numbers, review the contents of the IVR records to verify that the contents of these records meet your institution's requirements. This section includes the following:

- Information on how to review the data in the IVR Vocabulary and IVR Message records using ACE reports
- Information on how to modify data in the IVR Vocabulary and IVR Message records using PERFORM screens

How to Review the IVR Records

You can use ACE reports to review information in the IVR Vocabulary and IVR Message records. Follow these steps to print out the ACE reports:

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.
3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Table Maintenance** from the Registrar: IVR Maintenance Menu.
5. Select **Vocabulary Report** from the Registrar: Table Maintenance Menu.
Note: Perform this step to print an ACE Report of the IVR Vocabulary record.
6. Select the name of the vocabulary and the date from which you want to view changes in the IVR Vocabulary record.
7. Select **Finish**, and then complete the Output Parameters screen.
8. Select **Message Report** from the Registrar: Table Maintenance Menu.
Note: Perform this step to print an ACE Report of the IVR Message record.
9. Select **Finish**, and then complete the Output Parameters screen.

How to Access the IVR Records

After you identify the entries in the IVR Vocabulary or Message records that you must change, use PERFORM screens to enter the changes. Follow these steps to access the IVR Vocabulary and IVR Message PERFORM screens:

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.
3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Table Maintenance** from the Registrar: IVR Maintenance Menu.
5. Select **Vocabulary Table** from the Registrar: Table Maintenance Menu.
Note: Perform this step to edit the IVR Vocabulary record using a PERFORM screen.
6. Select **Message Table** from the Registrar: Table Maintenance Menu.
Note: Perform this step to edit the IVR Message record using a PERFORM screen.

IVR Vocabulary Table Screen

Following is an example of the IVR Vocabulary Table PERFORM screen.

IVR VOCABULARY TABLE	
Vocabulary....	[V1]
Phrase Number..	[1606]
Date Changed..	[08/30/1996]
Phrase.....	[Our records show that you have already received a degree in this program]
Assoc Macro...	[]

Fields on the IVR Vocabulary Table Screen

The following is a list of fields and their descriptions that appear on the IVR Vocabulary Table PERFORM screen:

Assoc Macro

Contains the macro, if any, from \$CARSPATH/macros/custom/ivr associated with this phrase.

Date Changed

Contains the date (mm/dd/yyyy) the corresponding phrase was last added or updated.

Phrase

Contains the lines of text, from one to four lines, for the phrase that IVR speaks when it encounters the corresponding phrase number during the registration process.

Phrase Number

Contains the four-digit number of the corresponding phrase. This phrase number field links to phrase number fields in the Academic Calendar, Course, Section, and Program Table records (e.g., 1606).

Vocabulary

Contains the name of the vocabulary to which the current phrase and phrase number belong.

Example: ENG for English

Fields to Modify on the IVR Vocabulary Table Screen

You should modify only the information in the Phrase field of the IVR Vocabulary Table PERFORM screen (i.e., the phrase itself). You may find that the default phrases are not adequate for your institution's needs. Modify them according to your institution's policies.

IVR Message Table Screen

Following is an example of the IVR Message Table PERFORM screen.

IVR MESSAGE TABLE	
Error Number.....	[103]
Phrase Number.....	[1575]
Mail Message.....	[IDNO TIME enrollment with a conflict in CRSNO SECN]
Level.....	[5]
Option.....	[N]
Max. Number Value..	[]
Menu.....	[1#]
Menu Translation...	[YN]
Associated Macro...	[]

Fields on the IVR Message Table Screen

The following is a list of fields and their descriptions that appear on the IVR Message Table PERFORM screen:

Associated Macro

Contains the macro, if any, from \$CARSPATH/macros/custom/ivr associated with this message.

Error Number

Contains a system-assigned serial number that uniquely identifies this record. IVR uses this number as a reference in interpreting error numbers that appear on the Registration screen during the registration process.

Level

Contains a value from 1 to 5, indicating how IVR should respond if it encounters the corresponding error number.

Mail Message

Contains the mail message sent to the specified user(s). The system sends mail to the users who are defined in the IVR_MAIL_LIST macro in the IVR macro file.

Max. Number Value

Optional - Contains the maximum value that a user can enter whenever numerical input is required. IVR uses this field to restrict the maximum number allowed, such as for a faculty consent number (e.g., 99).

Menu

Contains the values a caller must enter from a Touchtone phone to continue Touchtone Registration.

Example: 1#

Menu Translation

Contains the values that IVR must use to interpret the contents of the Menu field. IVR enters these values into Touchtone Registration (e.g., YN).

Option

Contains a default response that IVR uses if the caller does not make an entry (e.g., N).

Phrase Number

Contains the phrase number that corresponds with the Message record (e.g., 1575).

Fields to Modify on the IVR Message Table Screen

You should modify information only in the Mail Message field of the IVR Message Table PERFORM screen (i.e., the message itself). Since the default messages may not be adequate for your institution's needs, you may need to modify the messages according to your institution's policies.

You can modify the content of mail messages by changing the wording of the mail messages. However, you must always keep the Mail Message macros within the body of each mail message.

The IVR macro file contains the Mail Message macros. The IVR system defines them with specific values when it sends a mail message to the specified users. For more information about these macros, refer to the IVR_MAIL macros in the \$CARSPATH/macros/custom/ivr macro file.

Note: If you modify the contents of the IVR Message record, you can change how IVR responds to certain error conditions. Contact Jenzabar, Inc. for more information on modifying the contents of the IVR Message record.

Creating IVR Data Files

Introduction

After you have defined all macros and assigned all phrases, you must create the data files that the IVR system uses to process student registration. The *Create One Data File* and *Create All Data Files* menu options run a script that creates the following files:

Note: A script creates these three files and places them in the \$CARSPATH/install/ivr directory where they reside until you download them to the PC.

ac.dat

Contains phrase numbers and phrases for academic programs and academic sessions.

ivrmsg.dat

Contains serially numbered records that tell IVR what actions to take when certain conditions are encountered. The information in this file is from the IVR Message record.

sec.dat

Contains phrase numbers and phrases for courses and sections used in the registration process.

How to Create One Data File

You may sometimes need to create only one of the three IVR data files. For example, if only phrases for courses and sections have changed from one academic session to another, you may need to create only the sec.dat data file.

Follow these steps to create one data file at a time.

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.
3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Create Data Files** from the Registrar: IVR Maintenance Menu.
5. Select **Create One Data File** from the Registrar: Create Data Files Menu. The Create Data File screen appears.
6. Enter one of the following in the IVR Data File field:
 - **ac** to build the ac.dat file
 - **ivrmsg** to build the ivrmsg.dat file
 - **sec** to build the sec.dat file
7. Select **Finish**, and then complete the Output Parameters window to create the file you have selected.

How to Create All the Data Files

When phrases for the Academic Calendar Record, Course and Section records, and macro values are changed, you must create all data files.

Follow these steps to create all of the data files.

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.
3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Create Data Files** from the Registrar: IVR Maintenance Menu.

5. Select **Create All Data Files** from the Registrar: Create Data Files Menu. The Create All Data Files screen appears.
6. Select **Finish**, and then complete the Output Parameters window to create all the data files.

Recording Phrases on the IVR System

Introduction

After you have set up the IVR Vocabulary and IVR Message records, created all the phrases, and built all the download files, you must record phrases on the IVR system. You need to record IVR phrases for each academic session during which you use the IVR system, although certain phrases may remain the same from session to session. You can run the IVR Vocabulary report so it prints out only phrases that have changed on or after a specified date. This allows you to record or re-record only the phrases that have changed on or after the specified date.

This section includes instructions for preparing to record phrases and printing out the IVR Vocabulary report. For complete details about how to use the ScriptWrite vocabulary utilities to record and maintain phrases on the IVR system, see *Using the Vocabulary Utilities* in the *ScriptWrite Development Application Appendix*.

Preparing to Record IVR Phrases

Before you record phrases on the IVR system, review the lists of IVR vocabulary in *Using the IVR System Vocabulary* in this manual.

CAUTION: Failure to review this section of the manual may cause you to record invalid phrases for your registration setup.

The vocabulary lists contain valuable information about macro values that determine how your phrases are defined. Review the vocabulary lists to verify that the IVR macro file is set up according to your institution's requirements. If the macro file is not set up according to your institution's requirements, make the appropriate changes to the IVR macro file and perform all the steps as listed in this manual to set up the IVR vocabulary.

How to Print the IVR Vocabulary Report

The IVR Vocabulary report provides a list of all the IVR phrase texts that your institution needs to record on the IVR system on the PC. Print this report after you have created all the phrase numbers and phrase texts that IVR will use.

Follow these steps to print the IVR Vocabulary report:

1. Select **Registrar** from the Student Management: Main Menu.
2. Select **Registration** from the Student Management: Registrar Main Menu.
3. Select **IVR Maintenance** from the Registrar: Registration Menu.
4. Select **Table Maintenance** from the Registrar: IVR Maintenance Menu.
5. Select **Vocabulary Report** from the Registrar: Table Maintenance Menu. The Vocabulary Report screen appears.
6. Select the name of the vocabulary (e.g., "ENG" for English) in the Vocabulary field, and select the Update Date.

Note: The Update Date field controls which phrases appear on the report. All phrases added or modified in the IVR Vocabulary record on or after this date will appear on the report.

7. Select **Finish**, and then complete the Output Parameters window to print the IVR Vocabulary report.

Downloading IVR Data Files to the IVR System

Introduction

After you have recorded the IVR phrases, you must download the IVR data files (ac.dat, ivrmsg.dat, and sec.dat) to the IVR system. Once the files are downloaded to the PC, you must index the IVR files on the PC.

The IVR data files allow the IVR system to check a student's Touchtone telephone entry before passing it to the CARS Solution Registration product. The data files contain information from the Academic Calendar, IVR Message, Course, and Section records. No other information from the CARS Solution database exists on the IVR system.

CAUTION: Never add, modify, or delete any information in these files on the IVR system. If you need to change any information, make the changes on the CARS Solution database and rebuild the three data files prior to downloading them to the IVR system.

This section provides instructions on downloading and indexing data files on the IVR system.

How to Download the IVR Data Files for a Network Connection

Follow these steps to download the IVR data files to the IVR system:

1. Enter **cd c:\pctcp** at the DOS prompt on the IVR system.
2. Enter **ftpsrv** at the DOS prompt on the IVR system.
3. On the CARS Solution, go to the Master Menu.
4. Select **Student Management** from the Master Menu.
5. Select **Registrar** from the Student Management: Main Menu.
6. Select **Registration** from the Student Management: Registrar Main Menu.
7. Select **IVR Maintenance** from the Registrar: Registration Menu.
8. Select **Download Files** from the Registrar: IVR Maintenance Menu.
9. Do you want to download one data file, or all data files?
 - If one data file, then select **One Data File** from the Registrar: Download Files Menu. The Download One IVR Data File screen appears. In the IVR Data File field, enter **ac**, **ivrmsg**, or **sec** to indicate the name of the file that you want to download to the PC. Select **Finish**.
 - If all data files, then select **All Data Files** from the Registrar: Download Files Menu. The Download All Data Files screen appears. Select **Finish**.
10. Read any messages appearing on the screen and enter a **Y** to verify that you are running ftpsrv on the IVR PC.
11. Repeat steps 8-10 to download any additional files.
12. Enter **Q** to exit ftpsrv on the IVR PC.

How to Download the IVR Data Files for a Serial Connection

Follow these steps to download the IVR data files to the IVR system:

1. Enter **cd \validata\regent** at the DOS prompt on the IVR system.
2. From the PC containing the IVR system, run a standard communication program (such as PROCOMM).

- You must use a communication program to log on to the host. You should not attempt to transfer files while logged onto the host unless you are doing so through a communication program.
 - The communication program that you use must be able to receive files with the kermit file transfer protocol.
3. From within the communication program, log on to the CARS Solution host using your own login.
 4. Enter **menu** to run the CARS Solution Master Menu.
 5. Select **Student Management** from the Master Menu.
 6. Select **Registrar** from the Student Management: Main Menu.
 7. Select **Registration** from the Student Management: Registrar Main Menu.
 8. Select **IVR Maintenance** from the Registrar: Registration Menu.
 9. Select **Download Files** from the Registrar: IVR Maintenance Menu.
 10. Do you want to download one data file, or all data files?
 - If one data file, then select **One Data File** from the Registrar: Download Files Menu. The Download One IVR Data File screen appears. In the IVR Data File field, enter **ac**, **ivrmsg**, or **sec** to indicate the name of the file that you want to download to the PC. Select **Finish**.
 - If all data files, then select **All Data Files** from the Registrar: Download Files Menu. The Download All Data Files screen appears. Select **Finish**.
 11. Read any messages appearing on the screen and enter a **Y** to verify that you are running this process on a PC.
 12. Perform the necessary steps to complete the data file downloads from within the communication program you are using.
 - Use the *kermit* file transfer protocol to download the files
 - Consult the documentation that came with the communication program for information about downloading files
 13. Repeat steps 9-12 to download all necessary data files.

How to Index the IVR Data Files

After you download IVR data files ac.dat, ivrmsg.dat, and sec.dat to the IVR system, you must index them. Follow these steps to index each of the data files:

Note: EPOS provides a program called FM that indexes data files for the IVR system. Before indexing files, you must determine where this program is located on the PC containing the IVR system. When instructed to run the FM program in the list below, you may have to enter the full path of the program (i.e., \val\fm).

1. Enter **cd \val\data\regent** at the DOS prompt on the IVR system.
2. Enter **fm** to access the Database Utilities menu.
3. Select **Index a Data File** from the Database Utilities menu.
4. Enter one of the following data file names to index:
 - **ac**
 - **ivrmsg**
 - **sec**
5. Repeat step 4 for each data file that you need to index.

Starting a Line on the IVR System

Introduction

This section lists the steps necessary to start the *varegent.scs* Touchtone Registration script on the IVR system.

How to Start a Line on the IVR system

The IVR system can have a minimum of four telephone lines and a maximum of 32 telephone lines. Although the minimum configuration for lines on the IVR system is four, you can choose to use only one line on the system if your institution needs only one line. You must start the Touchtone Registration script, *varegent.scs*, on each line dedicated to Touchtone Registration.

Follow these steps to define and start up a telephone line on the IVR system:

1. Enter **lva** at the DOS prompt on the PC containing the IVR system.
Run the IVR system maintenance software (i.e., *va*).
2. Select **Maintenance** from the Main System menu of the IVR system.
The Maintenance Utilities menu appears.
3. Select **Line Definition** from the Maintenance Utilities menu.
The Line Definition screen appears with the cursor in the first field.
4. Select **Previous Line/Next Line** to go to the telephone line that you want to modify.
The line numbers appear in the top left of the screen.
5. Do the following:
 - Move your cursor to the Script Name field and type the name of the ScriptWrite program (i.e., *varegent.scs*)
 - Select **Exit** and SaveThe IVR system saves the information and the Maintenance Utilities menu appears.
6. Start up the line by doing the following:
 - Access the Main System menu
 - Select **Operations**
 - Select **Start a Line**
 - Decide which line(s) to start
 - Select **Start Selected Lines**

The IVR system starts the selected line(s).

Setting Up Alternate Greetings

Introduction

You can set up the IVR system to suspend Touchtone Registration and speak any phrase that you specify by setting up an *alternate greetings* file. Alternate greetings are phrases that the IVR system speaks to callers when the IVR system is not processing Touchtone Registration. For example, your institution could set up the *alternate greetings* file to instruct the IVR system to tell students who call the IVR system that Touchtone Registration does not begin until a certain date and time. This section describes how to set up alternate greetings on the IVR system.

Recording Broadcast Messages

To set up the IVR system to speak alternate greetings, you must first record the *broadcast messages* that IVR should speak when it is not processing Touchtone Registration. Use the *Broadcast message record utility* on the IVR system to create the phrases IVR should speak. For details on how to use this utility, refer to *Using Broadcast Messages* in the *ScriptWrite Development Application Appendix*.

Editing the *altgrt.dat* File

After you have recorded the broadcast messages that you will use as alternate greetings, create a file called *altgrt.dat* in the \va directory on the PC containing the IVR system. Edit this file and add the phrase numbers of the broadcast messages. If the phrase number is less than 1000, be sure to pad the phrase number with leading zeros, to make it 4 digits (e.g., phrase number 900 should be expressed as 0900 in the *altgrt.dat* file.).

The IVR system speaks the phrases that correspond to these phrase numbers when students call the IVR system. Since the IVR system will speak the indicated phrases whenever the *altgrt.dat* file exists in the \va directory, you must remove this file or rename it to allow IVR to process Touchtone Registration again.

SECTION 4 - IVR SYSTEM VOCABULARY

Using the IVR System Vocabulary

Introduction

The CARS coordinator and the computer center direct the customization of the vocabulary. This section's purpose is as follows:

- To show you the process that occurs when a student calls the IVR system, as well as when a student accesses registration information to add and drop courses
- To list numerically the phrase numbers and their corresponding descriptions
- To identify the specific phrases that the IVR system speaks during Touchtone Registration

When using the following vocabulary information, refer to the IVR Vocabulary report containing each phrase number and its corresponding text. For instructions on printing this report, see *Reviewing the IVR Vocabulary and IVR Message Records* in this manual.

For information on how to record Touchtone Registration phrases on the IVR system, see *Recording Phrases on the IVR system* in this manual.

For complete details about how to use the ScriptWrite vocabulary utilities to record and maintain phrases, see *Using the Vocabulary Utilities in the ScriptWrite Development Application Appendix*.

What is the Process?

This list shows the phases that occur when a student calls the IVR system to use Touchtone Registration.

Note: For more information about the vocabulary in the registration process, see phrases *1500-1619* on the following pages.

1. A student calls the IVR system.
2. The IVR system speaks a greeting to the student.
3. The student selects a vocabulary.
4. The IVR system provides the student with a menu of options to access registration information.

General Vocabulary Rules

Each phrase that the IVR system speaks is made up of text and part of a *vocabulary*. A vocabulary is made up of phrases and each phrase is numbered.

CARS Solution groups phrases together logically so they may be easily maintained. Each phrase number, with the exception of 0, is part of a group of related phrases. You must be familiar with the type of vocabulary that makes up each group of phrase numbers.

Follow these rules for setting up phrase numbers and corresponding phrases:

Note: The Touchtone Registration product does not use phrase numbers 1-999.

0

Identifies the vocabulary name (e.g., English).

1-999

Not used by the Touchtone Registration product.

1000-1299

Identify the standard vocabulary such as numbers, letters of the alphabet, months, and days of the week.

1300-1399

Identify the vocabulary that is not specifically related to registration.

1500-1619

Identify the standard vocabulary for the Touchtone Registration product.

1900-1999

Identify some of the error messages that the IVR system speaks to administrators only during an emergency.

2000-2500

Identify the local phrases, such as course names, programs, sessions, subsessions, and holds information.

Guidelines for Creating Phrases

To achieve the best results while creating phrases, refer to the following chapters and sections in the *ScriptWrite Application Development Appendix*:

- *Building a Voice Application*
 - *Designing the Dialog*
 - *Creating the Vocabulary*
- *Appendix B. Required Vocabulary*
- *Appendix C. Vocabulary Recording Technique*

Phrase Number 0 Description

Phrase 0 identifies the name of the vocabulary, such as English, or Spanish. Your institution can define up to three vocabularies, and each vocabulary contains phrases 0-2500. CARS Solution supports only one vocabulary for Touchtone Registration. If you need to set up additional vocabularies on your IVR system, contact Jenzabar, Inc.

Example of What a Caller Hears with Phrase Number 0

The following is an example of what a caller hears with phrase number 0.

As the example illustrates, a caller hears the following sentence, "Please push X to access XX" for each vocabulary. "X" represents a number that is recorded in phrases 1000-1010, and "XX" represents the name of the vocabulary.

1310

"Please push"

1001

"one"

1311

"to access"

0

"English"

Description of Phrase Numbers 1-999

Phrase numbers 1-999 are not supported by CARS Solution. These phrase numbers are reserved for the special menu processing features of the CCS FirstLine system.

Description of Phrase Numbers 1000-1249

Phrase numbers 1000-1249 represent standard, non CARS Solution-specific phrases that the IVR system requires. These phrases include the following:

- Amounts
- Dates and ordinals
- Days of the week
- Invalid phrases
- Letters of the alphabet
- Months of the year
- Numbers
- Punctuation
- Times

For complete details about the standard vocabulary, see *Appendix B. Required Vocabulary* in the *ScriptWrite Application Development Appendix*.

Description of Phrase Numbers 1250-1299

Phrases 1250-1299 contain the vocabulary used to return CARS Solution-specific messages restricting or prohibiting a user action. The IVR system uses some of these phrases for Touchtone Registration.

1250

The IVR system speaks this phrase when a student attempts to register for a course that will cause the student to exceed the number of credit hours allowed with this major.

1251

The IVR system speaks this phrase when a student attempts to register for a course but is prohibited by the enrollment type (i.e., half-time, less than half-time, etc.).

1252

The IVR system speaks this phrase when a student attempts to register but is prohibited by the entrance type (i.e., transfer in/out, dual enrollment, transient, high school).

1253

The IVR system speaks this phrase when a student attempts to register for a course that the student is not allowed to take.

1254

The IVR system speaks this phrase when a student attempts to register for a course that requires a prerequisite course that the student has not yet taken.

1255

The IVR system speaks this phrase when a student attempts to add a course that is not part of the program in which the student is enrolled.

1256-1257

The IVR system speaks this phrase when a student attempts to add or drop a course before completion of required courses.

1258

The IVR system speaks this phrase when a student who does not meet the entrance requirements for a particular major attempts to register with that major selected.

Description of Phrase Numbers 1300-1399

Phrases 1300-1399 represent common CARS Solution-specific phrases. The IVR system uses some of these phrases for Touchtone Registration.

The following lists each phrase number in the 1300-1399 range that the IVR system uses to process Touchtone Registration:

1301

The IVR system speaks this phrase after returning a student to a previous menu level or prompt.

1302-1303

The IVR system speaks these phrases after indicating that a specific action should be taken on a menu or other function.

1304

The IVR system speaks this phrase when the IVR system cannot get a response from CARS Solution.

1305

The IVR system speaks this phrase before ending a call.

Note: The IVR system speaks this phrase when a student presses the pound key (#) from the top menu or when a student does not complete a task within the given number of attempts.

1306

The IVR system speaks this phrase when a student fails to accomplish a task within the given number of attempts, as defined by the IVR_MAX_ERR_NUM macro in the IVR macro file.

1307

The IVR system speaks this phrase just before it hangs up on the student. (The IVR system speaks phrases 1306, 1307, and 1305, and then hangs up.)

1308

The IVR system speaks this phrase when a student enters a wrong answer or nothing at all.

1309

The IVR system speaks this phrase after phrase 1308 but only if a student has more than one attempt to try again.

Example: If a student has three attempts to complete a task, and is not successful with the first attempt, the student hears phrases 1308 and 1309 together. After the second attempt, the student hears phrase 1314.

1310

The first phrase that the IVR system speaks in a list of menu options, followed by a number or the pound sign (#) as part of a sentence.

1311

The IVR system speaks this phrase following phrase 1310 and either a number or the pound sign.

1312

The IVR system speaks this phrase when requesting a student to enter information that must be completed by the pound sign (#).

Note: The IVR system speaks this phrase only when a student enters information that does not contain a set number of digits. The IVR system does not speak this phrase, however, when requesting a social security number, reference number, or menu option.

1313

The IVR system speaks this phrase after every entry a student makes.

1314

The IVR system speaks this phrase when a student has one attempt left to complete a task.

Example: If a student has three attempts to complete a task and is not successful with the first attempt, the student hears phrases 1308 and 1309 together. After the second attempt, the student hears phrase 1308 and 1314.

1315

The IVR system speaks this phrase when requesting a student's social security number.

1316

The IVR system speaks this phrase when requesting a student's PIN.

1317

The IVR system speaks this phrase when the CARS Solution Registration product searches for a student's social security number and cannot find it.

1318

The IVR system speaks this phrase after repeating a student's social security number that was not found on CARS Solution.

Note: The IVR system speaks phrase 1309 after phrase 1318.

1319

The IVR system speaks this phrase when a student enters a social security number and PIN that may be valid numbers separately, but not together.

Note: The IVR system repeats the PIN and then speaks phrases 1319 and 1315.

1320

The IVR system speaks this phrase when a student does not enter a social security number.

1321

The IVR system speaks this phrase when the IVR system is not logged onto CARS Solution.

1322

Not used on the IVR system.

1323

The IVR system speaks this phrase before a list of academic sessions.

1324-1325

The IVR system speaks these phrases between choices in a list of choices.

1326

The IVR system speaks this phrase to indicate for which session a student is registering.

1327

The IVR system speaks this phrase to ask the student to enter a selection.

1328

The IVR system speaks this phrase to indicate that the entered selection was invalid.

1329

The IVR system speaks this phrase to indicate that a feature or function selected by the student is not available.

1330-1331

The IVR system speaks these phrases to inform the student that the student cannot access registration at this time.

1332

The IVR system speaks this phrase when a student did not enter a value although prompted to do so.

1333-1339

Not used by Touchtone Registration.

1340

The IVR system speaks this phrase when retrieving the billing information for a student and the student has a credit balance.

1341

The IVR system speaks this phrase to allow the student to re-play messages 1340, 1342, and 1346.

1342

The IVR system speaks this phrase when retrieving the billing information for a student and the student has a zero balance.

1343

The IVR system speaks this phrase when retrieving the billing information for a student and the student owes a specific dollar amount.

1344

The IVR system speaks this phrase to allow the student to re-play message 1343.

1345

The IVR system speaks this phrase when retrieving the billing information for a student who had a balance prior to the current registration.

1346

The IVR system speaks this phrase when retrieving the billing information for a student who has no outstanding fees.

1347-1359

Not used by Touchtone Registration.

1360-1364

The IVR system speaks these phrases when speaking the detail information for open sections.

1365-1369

Not used by Touchtone Registration.

1370

The IVR system speaks this phrase when giving the student the options available.

1371

The IVR system speaks this phrase when giving the student the options available.

1372

The IVR system speaks this phrase when listing open section detail information and there is no meeting time specified.

1373

The IVR system speaks this phrase when listing open section detail information and there are no meeting days specified.

1374

The IVR system speaks this phrase when listing open section detail information and there is no room number specified.

1375

The IVR system speaks this phrase when listing open section detail information and there is no building name specified.

1376-1399

Not used by Touchtone Registration.

Description of Phrase Numbers 1500-1619

Phrase numbers 1500-1619 contain the vocabulary for Touchtone Registration. Notice that phrases 1534-1544 make up the main menu for registration processing. These phrases are also part of a loop that the IVR system repeats in which a student enters a course number, adds or drops a course, and cancels an action by using the pound key (#).

The following lists phrase numbers in the 1500-1619 range that the IVR system uses to process Touchtone Registration.

Note: Be sure your institution spends the time necessary to ensure that phrases 1534-1544 and phrases 1546-1553 sound well together since these phrases are used repeatedly to process Registration. Each phrase must be concise, easy-to-understand, and clear.

1500-1503

The IVR system speaks these phrases when listing the options that a student can access.

1504-1512

The IVR system speaks these phrases if your institution allows a student to enroll for more than one program simultaneously.

- If your institution allows a student to be enrolled in multiple programs at once, make sure that you set the macro `IVR_ENABLE_MULTPROG` to Y
- For further details on the IVR macros, see *Setting Up IVR Macros* in this manual

1513-1516

The IVR system speaks these phrases if your institution uses subprograms.

- Whether or not the IVR system speaks these phrases depends on the value of the macro `IVR_ENABLE_SUBPROG` in the IVR macro file. If this macro = Y, then the IVR system uses phrases 1513-1515.
- For further details on the IVR macros, see *Setting Up IVR Macros* in this manual.

1517

The IVR system speaks this phrase when a student can register for more than one program, but the value in the `IVR_ENABLE_MULTPROG` macro is N.

1518

The IVR system speaks this phrase to confirm program and subprogram information.

Note: The values that your institution defines in the `IVR_ENABLE_MULTPROG` and `IVR_ENABLE_SUBPROG` macros determine the program and subprogram information following phrase 1518. Depending on these values, phrases 1511 and 1514 may follow phrase 1518.

1519

Not used by Touchtone Registration.

1520

The IVR system speaks this phrase when accessing the courses a student has already registered for in a session.

Note: The IVR system speaks this phrase after establishing a student's program, subprogram, and session.

1521

The IVR system speaks this phrase when confirming a student's program. If the IVR system gives a student the option to hear a list of other programs and subprograms, then it does the following:

- Sends a Table Lookup to CARS Solution.
- Speaks the following for each program or subprogram in the Table Lookup:

- Phrase 1310
- A number
- Phrase 1521
- Name of a program (or subprogram)
- Phrase 1511 (or phrase 1514 for a subprogram)
- Allows the student to select a program or subprogram.
- Tells CARS Solution which program or subprogram the student selected.
- The IVR system compares the code in the Table Lookup with the code in the ac.dat data file. If the two program codes match, the IVR system speaks the name of the program, (e.g., “undergraduate”).
- If the ac.dat file does not contain the name of the program, then the system speaks the four-character program code, (e.g., “U-N-D-G”).

1522

The IVR system speaks this phrase when it does not know the session for which a student is registering, such as in the case of a missing or corrupt registration record that does not contain a session.

Note: The IVR system speaks the session and year appearing on the screen for that student. If a phrase does not exist for the session in the vocabulary, then the IVR system speaks "F-A" rather than "Fall."

1523-1529

Not used by Touchtone Registration.

1530-1531

The IVR system speaks these phrases when a student's time slot to register for courses is in the future.

Note: The IVR system speaks phrase 1530, the time, phrase 1531, then the day and date that a student can register.

1532

The IVR system speaks this phrase to connect phrases.

1534

The IVR system speaks this phrase if a student is not registered for any courses.

- The IVR system speaks phrase 1534, then the appropriate session and year
- If a student registers for five courses and then drops all five courses, the IVR system still speaks this phrase since the student does not have any courses

1535-1539

The IVR system speaks these phrases to indicate the number of credit hours, audit hours, and courses that a student has registered for in a session and year.

Example:

A student would hear the following:

Phrase 1535

A number

Phrase 1536

Phrase 1537

A number

Phrase 1538

Phrase 1532

A number

Phrase 1539

Phrase 1532

Session and year

- If a student does not have any audit hours, the IVR system does not speak phrase 1537, a number, and phrase 1538.
- The IVR system speaks the session and year based on information in the ac.dat data file. If the session and year phrases are not defined in this table, the IVR system speaks "F-A-1-9-9-X" rather than "Fall 199X."

1540-1544

The IVR system speaks these phrases when a student is ready to register for a course once the IVR system has confirmed the student's program, subsession, and session.

- The IVR system repeats phrases 1535-1539, followed by phrases 1540-1544, after each course a student adds
- The IVR system does not speak phrase 1541 when a student does not have any courses for a session

1545

The IVR system speaks this phrase when a student enters a reference number that the system does not recognize.

1546

The IVR system speaks this phrase when a student enters a reference number for a course not already appearing on the student's schedule for that session and year.

1547

The IVR system speaks this phrase when adding a course section to a student's schedule.

Note: Phrases 1552, 1563, and 1553 follow phrase 1547.

1548-1549

The IVR system speaks these phrases when a student presses the star (*) for a listing of courses in a session and year.

1550

The IVR system speaks this phrase when a student presses the pound key (#) to finish the registration process.

1551

The IVR system speaks this phrase when a student may not register for courses.

Example: A student may not register when holds exist on the student's account, or when the student did not correctly complete a task within a given number of attempts.

1552-1553

The IVR system speaks these phrases each time a student adds or drops a course.

1554

The IVR system speaks this phrase when a student enters a reference number that the IVR system is about to add, but the student presses the pound key (#) to prevent the add.

1555

The IVR system speaks this phrase when a student enters a reference number for a course already appearing on the student's schedule for that session and year.

1556

The IVR system speaks this phrase when a student enters a reference number to add a course section.

1557

The IVR system speaks this phrase before the number of credit hours in a variable hours course.

1558

The IVR system speaks this phrase when a student registers for a variable hours course and selects option 2 (from phrase 1563) after adding the course.

1559

The IVR system speaks this phrase only before a student enters the number of fractional credit hours for a variable hours course.

- If your institution uses fractional credit hours, make sure that you set the macro IVR_ENABLE_FN to the same value as the TRUE macro
- For further details on the IVR macros, see *Setting Up IVR Macros* in this manual

1560

The IVR system speaks this phrase when a student has a warning hold called a notation hold.

Note: The IVR system tells the student what the hold is and then speaks phrase 1560.

1561

The IVR system speaks this phrase after a student selects option 2 (from phrase 1563) when adding a variable hours course.

1563

The IVR system speaks this phrase after a student adds a course.

Note: Selecting option 2 enables a student to enter the number of credit hours in a variable hours course.

1564

The IVR system speaks this phrase when a student drops a course, but then decides to cancel the course by pressing the pound key (#).

Note: After speaking phrase 1564, the IVR system repeats the Registration main menu (phrases 1535-1539).

1565

The IVR system speaks this phrase after a student adds a course.

Note: If the course is a variable hours course, the IVR system speaks this phrase after a student checks the hours for the variable hours course.

1566

The IVR system speaks this phrase when a student enters a reference number to add a course section that another student is also adding at the same time.

Note: When a Section record is locked (meaning that more than one student is trying to register for the same section), and the IVR system speaks this phrase, the student can complete another task, such as adding another course. The IVR system returns later to add the section that is locked.

1567

The IVR system speaks this phrase when a course section is full.

1568

The IVR system speaks this phrase when a section is full, the section is cross-listed, and the cross-listed section is not full.

1569

The IVR system speaks this phrase when a student registers for a course section that is full, and your institution allows the student to sign up on a wait list for the section.

1570

The IVR system speaks this phrase when a student registers for a course section conflicting with another section for which the student has already registered.

1571

The IVR system speaks this phrase when a student registers for a course that causes the student to exceed the number of credit hours allowed for the student in a session.

1572

The IVR system speaks this phrase only after a student exits Registration, and the student registers for less than the minimum number of credit hours for a session.

Note: You can add other information to this phrase to reflect your institution's consequences, such as loss of financial aid, if a student is below the minimum number of credit hours.

1573

The IVR system speaks this phrase when a student enters a reference number to add a course section that another student is also adding at the same time.

Note: The IVR system waits for the Section record to unlock before taking a student to another task. This is different from phrase 1566, which allows the student to add another course while waiting.

1574

The IVR system speaks this phrase when a Section record is no longer available.

1575

The IVR system speaks this phrase when a student registers for a course having a requirement that the student has not completed.

1576

The IVR system speaks this phrase when a student withdraws from a course and then tries to drop the course.

Note: If a student withdraws from a course, the course still appears on both the student's schedule and transcript. Because the student may still hear the course listed on the student's schedule, the student may want to drop the course.

1577

The IVR system speaks this phrase when a student has already performed the maximum number of transactions allowed by your institution in a telephone call.

- You can set up the maximum number of transactions in the macro IVR_MAX_TRX_NUM in the IVR macro file
- For further details on the IVR macros, see *Setting Up IVR Macros* in this manual

1578

The IVR system speaks this phrase when the IVR system must start the CARS Solution Registration product.

1579

The IVR system speaks this phrase when the student registers for a course repeat.

1580-1581

The IVR system speaks these phrases when a course section has special requirements for registration.

1582

The IVR system speaks this phrase when the IVR system cannot access a student's records.

1583-1587

The IVR system speaks these phrases when a course section requires faculty consent for registration.

1588

The IVR system speaks this phrase when a student does not have a valid academic status.

1589-1590

The IVR system speaks these phrases when a student has holds.

1591-1596

The IVR system speaks these phrases when a student cannot register for various reasons.

1597

The IVR system speaks this phrase when a student is not registered for any courses.

1598

The IVR system speaks this phrase when a student attempts to register for a program that is not valid for the current session.

1599

Not used by Touchtone Registration.

1600

The IVR system speaks this phrase when a seat is taken from a cross-listed course.

1601

The IVR system speaks this phrase when referring to course grades.

1602

The IVR system speaks this phrase when the student attempts to repeat a course, but such an action is not allowed.

1603-1604

The IVR system speaks these phrases when the student attempts to register for a course section for which the student has unmet requisites.

1605

The IVR system speaks this phrase when the student attempts to register for a course with special requirements.

1606

The IVR system speaks this phrase when the student has already received a degree in the specified program.

1607

The IVR system speaks this phrase when the student has a restricted registration status.

1608

The IVR system speaks this phrase when the student attempts to add a course section that conflicts with another course section already on the student's schedule.

1609-1611

The IVR system speaks these phrases when the section that the student attempted to register for is not available.

1612

The IVR system speaks this phrase when the student attempts to register for a course that does not exist in the course catalog.

1613-1617

The IVR system speaks these phrases when a course section cannot be added because of various conditions.

1618

The IVR system speaks this phrase when the student is on the wait list for a course that is being listed after the student selects the key to list all courses.

1619

The IVR system speaks this phrase to ask if the student wishes to register in another session or finish the registration.

Speaking the Registration Phrases

The following lists an example of the phrase numbers and corresponding text that the IVR system could speak. Notice that the IVR system speaks numbers found in phrases 1000-1299.

Note: The IVR system often speaks phrases similar to these when processing registration. Be sure that your institution spends the time necessary to make these phrases sound well together.

1535

"You are currently registered for"

1112

"twelve"

1536

"credit hours"

1537

"and"

1100

"zero"

1538

"audit hours"

1104

"four"

1539

"courses"

1532

"in"

2020

"Fall 199X session"

1540

"To add"

1541

"or drop"

1542

“please dial the schedule number”

1543

“Press the star to list your courses”

1544

“or press the pound key to save your changes and exit”

Adding a Course: What the IVR System Speaks

A student is ready to add courses after the IVR system confirms the student's program, subprogram, and session.

The following lists the phrases that the IVR system speaks when a student adds the course, Anthropology 101, section 2, using the IVR system. The student adds this course by entering the reference number 1000 for Anthropology 101, section 2.

Note: After speaking the phrases below, the IVR system speaks the phrases in the Registration menu (see the preceding process, *Speaking the Registration Phrases*).

1556

“Please wait as I check the computer”

1546

“I am about to add”

2000

“Introduction to Anthropology”

1549

“section”

1065

“2”

1547

“to your schedule”

1552

“Press one to confirm this action”

1563

“Press two to check other options”

1553

“Press the pound key to stop this action”

Phrases 1552, 1563, and 1553 for Adding a Course

The following list describes each option that the IVR system presents to a student after the student adds a course:

“One to confirm this action”

The IVR system saves the information to the database and repeats phrases 1535-1539 of the Registration menu.

“Two to check other options”

“The pound key to stop this action”

Dropping a Course: What the IVR System Speaks

A student drops a course by entering the reference number of a course that already appears on the student's schedule. Every time a student enters a reference number, the IVR system determines if the reference number already exists on the student's schedule for that session.

If a reference number does exist, the IVR system drops the course from the student's schedule. If a reference number does not exist, the IVR system adds the course to the student's schedule.

The following lists the phrases that the IVR system speaks when a student drops a course, Introduction to Art, section 1, using the IVR system:

1555

"I am about to drop"

2018

"Introduction to Art"

1549

"section"

1101

"1"

1552

"Press one to confirm this action"

1553

"Press the pound key to stop this action"

Phrases 1552 and 1553 for Dropping a Course

The following describes each option that the IVR system presents to a student after the student drops a course:

"One to confirm this action"

The IVR system saves the information to the database and repeats phrases 1535-1539 of the Registration menu.

"The pound key to stop this action"

Description of Phrase Numbers 2000-2500

Phrase numbers 2000-2500 are examples of local phrases that your institution can customize. These local phrases can include each of the following items:

- Courses
- Programs
- Sessions
- Subsessions

IVR System Development Vocabulary List

The following lists and describes the IVR system development vocabulary:

Note: The words "up" and "down" that follow some of the phrases in the following list indicate how you should speak the phrases when you record them. For example, when you record phrases for the number "2," you need to record the phrases in the following ways:

- Record the number "2" with an "up" sound so the IVR system speaks the number "2" as it would sound in the number 223. The IVR system speaks that number as "two two three" and should pronounce the first two digits with an "up" sound.
- Record the number "2" with a "down" sound so the IVR system speaks the number "2" as it would sound in the number 332. The IVR system speaks that number as "three three two" and should pronounce the last digit with a "down" sound.

Refer to *Using the Vocabulary Utilities* in the *ScriptWrite Application Development Appendix* for further information on how to record phrases on the IVR system.

0

The Development Vocabulary

1000

Zero (digit - up)

1001

One (up)

1002

Two (up)

1003

Three (up)

1004

Four (up)

1005

Five (up)

1006

Six (up)

1007

Seven (up)

1008

Eight (up)

1009

Nine (up)

1010

Ten (up)

1011

Eleven (up)

1012

Twelve (up)

1013

Thirteen (up)

1014
Fourteen (up)

1015
Fifteen (up)

1016
Sixteen (up)

1017
Seventeen (up)

1018
Eighteen (up)

1019
Nineteen (up)

1020
Twenty (up)

1021
Thirty (up)

1022
Forty (up)

1023
Fifty (up)

1024
Sixty (up)

1025
Seventy (up)

1026
Eighty (up)

1027
Ninety (up)

1028
Hundred (up)

1029
Thousand (up)

1030
Million (up)

1031
Zero (number - up)

1032
Silence (blank)

1033
Exclamation point (!)

1034
Quote (")

1035

Pound sign (#)
1036
Dollar sign (\$)
1037
Percent sign (%)
1038
Ampersand (&)
1039
Apostrophe (')
1040
Left parenthesis '('
1041
Right parenthesis ')'
1042
Star (*)
1043
Plus sign (+)
1044
Comma (,)
1045
Hyphen(-)
1046
Period (.)
1047
Virgule, slash (/)
1050
Sunday
1051
Monday
1052
Tuesday
1053
Wednesday
1054
Thursday
1055
Friday
1056
Saturday
1058
colon (:)
1059
Semicolon (;)
1060

Less than sign (<)

1061

Equal sign (=)

1062

Greater than sign (>)

1063

Question mark (?)

1064

At sign (@)

1065

A

1066

B

1067

C

1068

D

1069

E

1070

F

1071

G

1072

H

1073

I

1074

J

1075

K

1076

L

1077

M

1078

N

1079

O

1080

P

1081

Q

1082

R
1083
S
1084
T
1085
U
1086
V
1087
W
1088
X
1089
Y
1090
Z
1091
Left bracket ([)
1092
Backslash (\)
1093
Right bracket (])
1094
Carat (^)
1095
Underscore
1096
Grave accent (`)
1100
Zero (number - down)
1101
One (down)
1102
Two (down)
1103
Three (down)
1104
Four (down)
1105
Five (down)
1106
Six (down)
1107

Seven (down)
1108
Eight (down)
1109
Nine (down)
1110
Ten (down)
1111
Eleven (down)
1112
Twelve (down)
1113
Thirteen (down)
1114
Fourteen (down)
1115
Fifteen (down)
1116
Sixteen (down)
1117
Seventeen (down)
1118
Eighteen (down)
1119
Nineteen (down)
1120
Twenty (down)
1121
Thirty (down)
1122
Forty (down)
1123
Fifty (down)
1124
Sixty (down)
1125
Seventy (down)
1126
Eighty (down)
1127
Ninety (down)
1128
Hundred (down)
1129

- Thousand (down)
- 1130**
Million (down)
- 1131**
Zero (number - down)
- 1132**
Minus (negative)
- 1133**
a.m.
- 1134**
p.m.
- 1135**
o'clock
- 1136**
Noon
- 1137**
Midnight
- 1138**
Oh (as in 3:08 p.m.)
- 1141**
First
- 1142**
Second
- 1143**
Third
- 1144**
Fourth
- 1145**
Fifth
- 1146**
Sixth
- 1147**
Seventh
- 1148**
Eighth
- 1149**
Ninth
- 1150**
Tenth
- 1151**
Eleventh
- 1152**
Twelfth
- 1153**

Thirteenth
1154
Fourteenth
1155
Fifteenth
1156
Sixteenth
1157
Seventeenth
1158
Eighteenth
1159
Nineteenth
1160
Twentieth
1161
Thirtieth
1162
Fortieth
1163
Fiftieth
1164
Sixtieth
1165
Seventieth
1166
Eightieth
1167
Ninetieth
1168
Hundredth
1169
Thousandth
1170
Millionth
1173
dollars and ...
1174
dollars
1175
one dollar and
1176
one dollar (even)
1177

- No dollars and ...
- 1178**
No dollars and no cents
- 1179**
cents
- 1180**
one cent
- 1181**
point (for SPEAK DECIMAL)
- 1183**
January
- 1184**
February
- 1185**
March
- 1186**
April
- 1187**
May
- 1188**
June
- 1189**
July
- 1190**
August
- 1191**
September
- 1192**
October
- 1193**
November
- 1194**
December
- 1195**
Invalid phrase (spoken if speak request contains invalid data)
- 1250**
You have exceeded the maximum credit hours for your major.
- 1251**
You have a current enrollment type that prohibits registration.
- 1252**
You have an entrance type that prohibits registration.
- 1253**
You are restricted to certain courses only.
- 1254**

You cannot take this course until the required courses are taken.

1255

This is not one of the courses that you are restricted to. The add is cancelled.

1256

You cannot drop this course until the required courses are taken. The drop is cancelled.

1257

You have required courses. Your required courses are...

1258

You have not met the entrance requirements for your major. You cannot register.

1301

Push the pound key (#) to exit.

1302

... this menu

1303

... this function

1304

The computer is down; please call back later.

1305

Thank you for calling the CARS Interactive Voice Response System

1306.

I'm sorry you are having trouble ...

1307

Please check the instructions and call back later.

1308

I'm sorry, I am unable to process your request.

1309

Please try again.

1310

Please push ...

1311

... to access ...

1312

... followed by the pound key (#).

1313

Thank you.

1314

Let's try one more time.

1315

Please enter your social security number at this time.

1316

Please enter your personal identification number ...

1317

I do not have this social security number in my files. Let me look it up. Just a moment, please.

1318
... is not defined ...

1319
... is not the correct PIN for this social security number. Let's try this again from the top.

1320
To continue processing, I need to know your nine-digit social security number.

1321
I need to login to the host. This should not take long. Please wait.

1322
I need to start up an identification program. This may take a little time. Please wait.

1323
If you wish to register for the session ...

1324
... press ...

1325
... or ...

1326
Currently registering for the session ...

1327
Please give me the number of your selection.

1328
... is an incorrect selection.

1329
I'm sorry ...

1330
... your telephone registration time ended at ...

1331
Your telephone registration time won't begin until ...

1332
You did not enter a value.

1340
You have a credit balance and therefore owe nothing for your current registration.

1341
Press one to hear this message again or press any other key to continue.

1342
You owe zero dollars and zero cents.

1343
The total amount you owe for your current registration is ...

1344
Press one to hear the amount you owe again or press any other key to continue.

1345

You had a balance prior to this registration, please see the registrar.

1346

You have no outstanding fees.

1360

... at ...

1361

... from ...

1362

... on ...

1363

... and ...

1364

... room ...

1370

Press two to list open sections.

1371

... or press the pound sign to return to the previous menu.

1372

No meeting time specified.

1373

No meeting days specified.

1374

No room number specified.

1375

No building name specified.

1401

Admissions Information

1402

I'm sorry, there is no admissions information available at this time.

1501

Registration Processing

1502

... to register for the ...

1503

... to register for a different ...

1504

I'm sorry, you are not currently enrolled in the ...

1509

... in the ...

1510

Press the pound (#) key if you are currently enrolled in the ...

1511

... program

1512

Press one (1) if you are enrolled in another program.

1513

Press pound (#) if you are in the ...

1514

... subprogram.

1515

... otherwise, press one (1) for subprogram options.

1516

Press pound (#) if you are not enrolled in a subprogram.

1517

You are enrolled in more than one program, which is not permitted. Please contact the Registrar's office to let them know about that. You may register for classes in the ...

1518

You are currently enrolled in the ...

1520

Please wait while I get your information.

1521

... if enrolled in ...

1522

I am not sure for which session you wish to register. I am putting you into classes for ...

1530

Your registration time is ...

1531

... on ...

1532

... in ...

1534

You are currently not registered for any courses in ..

1535.

You are currently registered for ...

1536

... credit hours,

1537

... and ...

1538

... audit hours,

1539

... courses.

1540

Press one to add ...

1541

... or drop ...

1542

- ... please dial the schedule number.
- 1543**
Press the star (*) to list your courses,
- 1544**
... or press the pound key (#) to save your changes and exit.
- 1545**
I do not recognize the reference number ...
- 1546**
I am about to add ...
- 1547**
... to your schedule.
- 1548**
The courses on your schedule are ...
- 1549**
... section ...
- 1550**
Please wait as the computer finishes processing your schedule.
- 1551**
I'm sorry, I cannot continue the registration process at this time.
- 1552**
Press one (1) to confirm this action.
- 1553**
Press the pound key (#) to stop this action.
- 1554**
I will not add this course.
- 1555**
I am about to drop ...
- 1556**
Please wait, as I check the computer.
- 1557**
... with ...
- 1558**
Please enter the number of credit hours this course should be worth.
- 1559**
Use the star (*) as a decimal point.
- 1560**
Press one to acknowledge this condition and continue processing.
- 1561**
... hours ...
- 1562**
... to make these ...
- 1563**
Press two (2) to check other options.
- 1564**

I will not drop this course.

1565

Press one (1) to take this course for credit. Press two (2) to take this course for audit.

1566

I cannot get this section right now. Let's come back to it.

1567

This section is full.

1568

But there is room in ...

1569

Press one (1) to be put on the wait list for this class, or press the pound (#) to reverse this action.

1570

This course conflicts with your current schedule. Do you still wish to add it?

1571

This course will take you over the maximum number of hours you are permitted to take.

1572

You are now below the minimum credit hours allowed.

1573

I am waiting for this section record to be unlocked.

1574

This course is no longer available in this session.

1575

Due to an unmet prerequisite, I cannot add this course. Please see your advisor for details.

1576

You have already withdrawn from this course. You cannot drop it.

1577

You have performed all the transactions allowed in one call.

1578

I need to start up the registration program. This will take some time. Please wait.

1579

Warning, you are repeating this course. Press one to continue adding or the pound (#) sign to stop. If you continue, the registrar will be informed that you registered for a course repeat.

1580

... and may not register again.

1581

... has special requirements. You will need to speak to the Registrar to add this course.

1582

I am unable to access your records. Please try again later.

1583

In order to take this class, you must have faculty approval.

1584

Please enter your approval number.

1585

... is not the correct approval number.

1586

The value you have entered exceeds the maximum allowed.

1587

The value you have entered is below the minimum.

1588

Your academic status will not allow me to continue your registration.

1589

I'm sorry, a hold has been applied against your records, which prevents further registration. Please consult your advisor.

1590

A hold has been applied against your records. You have the option of stopping now or continuing. If you continue, the registrar will be informed that you registered despite the hold.

1591

I'm sorry, but due to technical difficulties, permission to register is not being granted today.

1592

I'm sorry, but due to technical difficulties, IVR cannot register for that session today.

1593

I'm sorry, I cannot register you because your records show an invalid classification code. Please see your advisor.

1594

I'm sorry, but students of your classification cannot register today.

1595

I'm sorry, but another person seems to be registering under your ID.

1596

I'm sorry, but your academic status prevents you from registering with IVR. Please consult your advisor.

1597

You are not currently registered for any courses.

1598

I'm sorry, but you may not register for that program during this session.

1600

I am taking a seat from a cross-listed course.

1601

... your course grades.

1602

You have already taken this course or an equivalent. I cannot add it.

1603

Due to an unmet corequisite, I cannot add this course. Please see your advisor for details.

1604

Due to an unmet concurrent requisite, I cannot add this course. Please see your advisor for details.

1605

Warning, you are registering for a course with special requirements. Press one to continue, or press the pound (#) key to stop. If you continue, the registrar will be informed; please see your advisor to learn the nature of the requirements.

1606

Our records show that you have already received a degree in this program.

1607

Warning, you have a probationary status. Press one to continue or the pound (#) sign to stop now. The registrar will be informed if you continue.

1608

Warning, adding this course will create a conflict. Press one if this is OK, or press the pound (#) sign to cancel.

1609

Please wait while I look through records for any other available sections.

1610

I'm sorry, but there are no more available sections for ...

1611

... has the following section or sections available ...

1612

I'm sorry, but that course is not in the catalog.

1613

I'm sorry, but I don't have permission to add that course.

1614

I'm sorry, but I can't add that course. It has no sections yet.

1615

I'm sorry, but that section is not available.

1616

I'm sorry, but it's too early to add that course. Please consult your advisor for the appropriate date.

1617

I'm sorry, but it's too late to add that course. Please consult your advisor for an alternative.

1618

... where you are on the waiting list.

1619

Press one if you want to register for another academic session, or press the pound (#) key if you want to exit now.

1650

Invalid reference number.

1651

There are no sections available for that reference number.

1900

Please contact the system administrators and tell them there is a problem with the option table on option number ...

1901

Please contact the system administrators, and tell them that the local identification records have been deleted. Thank you.

1902

Please contact the system administrators, and tell them there is a problem with the Session table.

1903

Please contact the system administrators, and tell them that there is a problem with your regtime_table entry. Thank you.

1904

This is the Interactive Voice Response System. I am trying to send error messages to the system administrator through electronic mail but am having problems. Please have the system administrator check into it.

1905

Please hold for a moment as I finish up the last call.

1906

Please contact the system administrators, and tell them that I cannot find my section records. Thank you.

1907

I'm sorry, I am having problems with the computer. I will attempt to save your registration. Please call back later.

2000-2500

Local phrases, including course names, session titles, restriction phrases, etc.

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