

TRAINER PREPARATION GUIDE 1.6: CAPTURE USER DATA

Lesson Objective 1.6:

Capture user data. *Topics:* Save and restore user data, save and restore game state, handle input states, store data, manage game state.

Required materials to teach this lesson:

1. 98-374-ENU-1.6-LP
2. 98-374-ENU-1.6-IC
3. 98-374-ENU-1.6-IC_Key
4. 98-374-ENU-1.6-PC

Preparation tasks

Technical preparation activities:

1. Vocabulary:

game state: a phase of a game, such as the title screen, loading, pausing, gameplay, and so on.

input state: the condition of the input device being queried.

state machine: a design pattern defined by a set of game states and actions that are executed only within those states, where only one state is active at a time.

user storage: read-write storage supported by the game platform for saving information from the game at run time. The data can be associated with a particular player's profile, or it can be available to all players.

2. Additional readings and resources:

Other resources (books, e-reference):

Miles, Rob. Microsoft XNA Game Studio 4.0: Learn Programming Now! (Redmond: Microsoft Press, 2011)

Rogers, Scott. Level Up: The Guide to Great Video Game Design (West Sussex, UK: John Wiley & Sons, 2010)

Schell, Jesse. The Art of Game Design: A Book of Lenses (Burlington: Morgan Kauffman, 2008)

Instructor computer setup:

1. None

Instructional preparation activities:

1. Students should have experience playing games that store user data in different ways.
2. It is suggested that students have experience programming games that take input from the keyboard, mouse, and game controller.
3. Review the instructor notes in the notes panes of the Microsoft PowerPoint presentation slide deck.

4. Make student documents available as needed.

Lesson sequence (50 minutes)

Activating prior knowledge/lesson staging (5 minutes):

1. **What type of data is stored when a game is saved?** The current level, score, inventory, character profile, objectives completed, gameplay duration, and so on.

Guiding questions:

1. **What does user data consist of?** User data generally consists of the user's profile and game progress. Game progress might represent the last level achieved (or checkpoint within a level), character attributes, achievements, inventory, score, and objectives completed.
2. **How is user data saved and restored?** User data is saved and restored so players can continue from where they left off. This could be after a player's turn is over or when the game is restarted. User data can be saved by the user at any time, when certain objectives have been met, at particular locations in the game, or automatically saved by the game. The user data can be restored by accessing a load menu at the beginning of the game or during the game.
3. **How is game state saved, restored, and managed?** The term *game state* refers to a phase of a game, such as the title screen, loading, pausing, gameplay, signing into an online game, and so on. A state machine is a design pattern that manages the different states of a game by taking into account actions that are executed within those states and transitions between states, and making sure that only one state is active at a time.

Lesson activity (40 minutes):

1. Teacher instruction (15 minutes)
 - a. Use the included PowerPoint® presentation to review capturing user data.
 - b. Refer to examples of user data that are saved for certain games. For example, the type of user data stored in a football game will be different than the data in a role-playing game.
 - c. Instructions for the in-class activity are found in the presentation. Students should use the in-class activity document provided.
2. In-class activity (20 minutes)
 - a. Students are to complete 98-374-ENU-1.6-IC.
3. Post-class Activity (5 minutes)
 - a. Provide instruction for the post-class activity as needed. Establish a completion date.

Lesson review (5 minutes):

1. Discuss the guiding questions.
2. Discuss the results of the in-class activity.
3. Instruct students to write and submit any questions they have or any topics about which they would like more assistance.
4. After class, look through the student responses and follow up with any student requiring additional help.