

KEY IN-CLASS STUDENT ACTIVITY 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.

Resources, software, and additional files needed for this lesson:

1. None

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 a player can continue where he or she left off. This could be after a player's turn is over or 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?** A 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, making sure that only one state is active at a time.

Student activity:

Directions to the student:

Read the following scenario and respond to the situation presented. Verify your answers with the instructor. Request assistance from the instructor as needed. Share your ideas with the class.

Scenario:

Khadder the Destroyer is an action-adventure game in which players fight their way through ever-increasing swarms of enemies to rescue Princess Sreyms from the evil warlord Magnilub. It is easy to lose a life to enemies, and a player is expected to fail a couple times before mastering a level; therefore, saving and restoring user data is a significant part of the game design. Players score points for how many enemies they defeat and gain credits for purchasing new inventory, such as costumes and weapons.

Content:

You have been asked to design the user data management system. Describe your plans for handling user data.

First, specify what user data you will save. What important pieces of data would the user expect to be restored when play is resumed after a player loses a life, or when a player loads a saved game?

Second, explain how data will be saved. Will it be saved automatically at checkpoints, will you give the responsibility of saving to the user, some combination of these, or something else?

Sample Answer: (Answers may vary)

User data:

1. Character profile (costume, strength, agility, and so on)
2. Score
3. Credits
4. Inventory items
5. Objectives completed
6. Current objective
7. Number of enemies defeated

The game will be saved automatically at certain checkpoints, but the user also can have the option of saving in the middle of a checkpoint. The automatic saving will allow users to resume at the last completed checkpoint even if they forget to save the game themselves. They may also save their progress before a boss battle, in which it is likely that they will lose their life, so that they will not need to start at the last checkpoint.