

# TRAINER PREPARATION GUIDE 1.4: DESIGN THE USER INTERFACE

## Lesson Objective 1.4:

Design the user interface. Topics: UI layout and concepts, asset management, game state, gamer services.

## Required materials to teach this lesson:

1. 98-374-ENU-1.4-LP
2. 98-374-ENU-1.4-IC
3. 98-374-ENU-1.4-IC\_Key
4. 98-374-ENU-1.4-PC

## Preparation tasks

### Technical preparation activities:

#### 1. Vocabulary:

**asset:** refers to a part of a game that is not executing managed code. It includes all art assets, such as textures, sprites, meshes, effects, and fonts; and includes sound assets, such as music or brief sound effects. It also can include data assets, such as tables of levels or character attributes. Assets are referred to collectively as *content*.

**content pipeline:** a set of processes used to manage a game's art and data assets when the game is built.

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

**gamer services:** a library of code for working with Xbox Live®. These services communicate directly with the gamer, the gamer's data, or otherwise reflect choices the gamer makes. Gamer services include input device and profile data application programming interfaces (APIs).

**graphical user interface (GUI):** the use of pictures rather than just words to represent the input and output of a program.

**user interface (UI):** the aspects of a computer system or program that can be seen (or heard or otherwise perceived) by the human user, and the commands and mechanisms the user uses to control its operation and input data.

#### 2. Additional readings and resources:

**MSDN®:**

**XNA® Game Studio:** <http://msdn.microsoft.com/en-us/library/cc178930.aspx>

**Windows® User Experience Interaction Guidelines:** <http://msdn.microsoft.com/en-us/library/windows/desktop/aa511258.aspx>

**Other resources (books, e-reference):**

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

Rabin, Steve. Introduction to Game Development (Boston: Course Technology, 2008)

**Instructor computer setup:**

1. None

**Instructional preparation activities:**

1. Have students review UI layouts of various games, including interfaces for signing into lobbies for online play.
2. Review the instructor notes in the notes panes of the Microsoft PowerPoint® presentation.
3. Make student documents available as needed.
4. Lesson sequence (50 minutes)

**Activating prior knowledge/lesson staging (5 minutes):**

Have students describe the user interfaces for two games within the same genre. Ask them to describe three rules for UI design.

**Guiding questions:**

1. **What are principles of UI design?** Simplicity, unity, flexibility, intended audience, color, and feedback.
2. **How are assets managed?** The XNA Game Studio Content Pipeline process starts with assets in their original form as files, and it continues to their transformation as data that can be retrieved and used within an XNA Game Studio game through the XNA Framework Class Library. XNA Game Studio uses a content pipeline to help a game run fast. Without the content pipeline, a game would have to be built with its art assets in their original file format. When the game needs to load its art to draw it on the screen, it would have to determine its format and convert the data into a form that it can use more directly. This would have to be performed at run time, for each asset, which would make the game slower.
3. **What are the different states of a game?** 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.

**Lesson activity (40 minutes):**

1. Teacher instruction (15 minutes)
  - a. Use the included PowerPoint presentation to review user interfaces.
  - b. Refer to examples throughout the lesson and elicit UI design examples from the students' experiences. Have students critique existing user interfaces and cite good UI practices that are independent of the game genre.
  - 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. Engage students in 98-374-ENU-1.4-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.