

TRAINER PREPARATION GUIDE 2.5: UNDERSTAND DIFFERENT GAME PLATFORMS

Lesson Objective 2.5:

Understand the different game platforms. *Topics:* console, PC, mobile; compare memory management.

Required materials to teach this lesson:

1. Internet access
2. Microsoft Excel®
3. 98-374-ENU-2.5-LP
4. 98-374-ENU-2.5-IC
5. 98-374-ENU-2.5-IC_Key
6. 98-374-ENU-2.5-PC

Preparation Tasks

Technical preparation activities:

1. Vocabulary:

console: a special-purpose computer system designed specifically for the home user to play video games. A game console typically includes a CPU, one or more game controllers, audio output, and a video output device that connects to a television set.

garbage collection: a process for automatic recovery of heap memory. Blocks of memory that had been allocated but are no longer in use are freed, and blocks of memory still in use may be moved to consolidate the free memory into larger blocks.

memory management: procedures for optimizing the use of random access memory (RAM). These procedures include selectively storing data, monitoring it carefully, and freeing memory when the data is no longer needed.

mobile device: a handheld computing device with a touchscreen.

PC: a general-purpose single-user microcomputer designed to be operated by one person at a time.

Windows Phone®: the operating system that replaced Windows Mobile®; used on the Windows Phone 7®.

2. Additional readings and resources:

MSDN®:

Designing Applications for Windows Phone 7, Chapter 2: <http://msdn.microsoft.com/en-us/library/gg490770.aspx>

Game State Management: http://create.msdn.com/en-US/education/catalog/sample/game_state_management

Other resources (books, e-reference):

Create a Timeline Using Microsoft Excel®: <http://www.microsoft.com/education/en-us/teachers/how-to/Pages/timeline.aspx>

History of Computer Games:

<http://www.computernostalgia.net/articles/HistoryofComputerGames.htm>

History of Xbox®, Parts 1 and 2: <http://www.youtube.com/watch?v=RYylqNIBbQI>

Windows Phone: http://en.wikipedia.org/wiki/Windows_Phone#Games

Xbox 360® History: <http://en.wikipedia.org/wiki/Xbox>

Instructor computer setup:

1. A presentation computer with Office® installed and access to the Internet.
2. A projection system for demonstration purposes.

Instructional preparation activities:

1. Review Lesson 2.5 documents.
2. Make copies of student documents available as needed.
3. Review the tutorial on how to create a timeline using Excel so that you can assist students with this as needed. This could be a pre-class activity.

Lesson Sequence (50 minutes)

Activating prior knowledge/lesson staging (5 minutes):

Direct students to answer the questions in the “Guiding questions” section of the In-class Activity document or their personal class notes.

Guiding questions:

1. **What are the similarities and differences of console, PC, and mobile game platforms?** The console is a dedicated computer used for playing games. The Xbox 360 can be used to play games locally or online. The PC is used to play games locally or online. Windows Phone can connect to Xbox Live® and replaced the Zune® as a mobile device for gaming.
2. **How does memory management vary among these three platforms?** Memory management on the Windows Phone is more difficult than when using a console or PC because the Windows Phone has a smaller CPU, less RAM, and less available power because of battery usage.

Lesson activity (40 minutes):

1. Teacher instruction (15 minutes):
Use the included Microsoft PowerPoint® presentation to review platforms and memory management.
2. In-class activity (25 minutes):
Students are to complete 98-374-ENU-2.5-IC using Excel. If Excel is not available, this could be done as an in-class activity with poster board or large pieces of paper and markers.
3. Post-class activity (5 minutes):
Provide instruction for the post-class activity as needed. Establish a completion date.

Lesson review (5 minutes):

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