

TRAINER PREPARATION GUIDE 4.7: ACCESS DEVICE AND OPERATING SYSTEM RESOURCES

Lesson Objective 4.7:

Access device and operating system resources.

Required materials to teach this lesson:

1. Microsoft® Word or similar word processing tool and access to the Internet.
2. Microsoft® Expression® Web 4 (preferred) or Notepad (Notepad++ is preferred; it provides real-time feedback for writing JavaScript). Download: <http://www.notepadplusplus.org/> (Internet Explorer® 9 or later).
3. 98-375-ENU-4.7-LP
4. 98-375-ENU-4.7-IC
5. 98-375-ENU-4.7-ICKey

Preparation tasks

Technical preparation activities:

1. None

2. **Vocabulary:**

accelerometer: a device that measures acceleration—a change in speed over time.

device independence: a characteristic of a program, interface, or protocol that supports software operations that produce similar results on a wide variety of hardware.

3. **Additional readings and resources:**

MSDN®:

The Windows® Runtime: <http://msdn.microsoft.com/en-us/library/windows/apps/hh464942.aspx>

Accelerometer Overview: [http://msdn.microsoft.com/en-us/library/ff431810\(v=vs.92\).aspx](http://msdn.microsoft.com/en-us/library/ff431810(v=vs.92).aspx)

Other resources (books, e-reference):

W3C DeviceOrientation Event Specification: <http://dev.w3.org/geo/api/spec-source-orientation.html>

Wikipedia: HTML5 in mobile devices: http://en.wikipedia.org/wiki/Html5_in_mobile_devices

Note: Support for HTML5 and CSS3 is changing and developing quickly. The list of resources is current as of January 2012. Check resources for current and up-to-date information at the time of classroom use.

Instructor computer setup:

1. A workstation with Internet access.

Instructional preparation activities:

1. Review the instructor suggestions in the notes view of Microsoft PowerPoint® presentation 98-375-ENU-4.7-LP.

2. Make copies of student documents available as needed.
3. Complete the instructions for the demonstration before class.

Lesson sequence (50 minutes)

Activating prior knowledge/lesson staging (5 minutes):

Instruct students to answer each question in the "Guiding questions" section of the In-class Activity document or in their personal class notes.

Guiding questions:

1. **What is WinRT and how is it used in web development?** WinRT stands for Windows Runtime, and it is used with Metro style apps to make it easy to use various hardware devices such as smartphones and tablets.
2. **How do mobile devices maintain and store contact lists and calendars?** Similar to an AppCache, devices have memory storage that is allocated for information such as contact lists and calendars.
3. **Most mobile devices have GPS components and built-in cameras. How can a web developer access and use these components?** Using the Windows Runtime, the developer can access the GPS components to provide real-time location information and navigational directions to the user. The developer can use the built-in camera for video chat (such as Skype) and video conferencing.

Lesson activity (35 minutes):

1. Teacher instruction
 - a. Use the PowerPoint presentation 98-375-ENU-4.7-LP to review the process of accessing device and operating system resources.
 - b. An In-class Activity document is available for use as needed.

Lesson review (10 minutes):

1. Lead students in a discussion of the guiding questions.
2. During and after the discussion, have students list any questions they have or any topics with which they would like more assistance.
3. Have students work in pairs to answer the additional questions written by students. Answer any questions that cannot be answered by students, or collect them for follow-up later.