

## KEY IN-CLASS STUDENT ACTIVITY 1.7B: WORK WITH XNA

### Lesson Objective 1.7:

Work with XNA®. *Topics:* work with XNA hierarchy (initialization, update loop, drawing).

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

1. None

### Guiding questions:

1. **What is the purpose of the *Initialize*, *Update*, and *Draw* methods?** The *Initialize* method is called once at the beginning of a game and is responsible for game setup before the first call of the game loop, update and draw. The *Update* method executes the game logic, such as updating the position of a character. The *Draw* method is used to draw each frame of the game.
2. **How do the *Update* and *Draw* methods work together to form the game loop?** The *Update* and *Draw* methods are called once every 60 seconds for a default XNA game. For example, *Update* will update variable values and *Draw* will use those values to display an image in the game window.

### Student activity:

#### Directions to the student:

Read the following scenario and identify the method in the XNA hierarchy where the code for the following actions should be placed. Choose from *Initialize* (I), *Update* (U), and *Draw* (D).

#### Scenario:

Jay Hamlin has just started a new job at Trey Research as a game designer. He is especially excited to use the powerful game development environment of XNA Game Studio. While out celebrating his new position with friends, he discovered that they did not understand much about how video games work. He could tell that the terms *initialize*, *update*, and *draw* had little meaning to them as he described his current project. He needs some examples of these game loop methods to better explain the process to his friends.

#### Content:

1.   D   Display an image in the game window.
2.   U   The player's energy variable increases when the X gamepad button is pressed.
3.   U   The intensity of the red variable in an RGB color increases over time.
4.   D   Show a new character on the screen.
5.   U   When the Start button is pressed, the game state changes to the Instruction screen.
6.   I   The number of enemies begins at 10.
7.   U   The gamepad is checked to see if the B button is pressed.
8.   I   Set the number of lives to 3.
9.   U   Change the location of a mouse pointer.
10.  D  Show the color of a car.