

Washington State University
School of Electrical Engineering and Computer Science
Spring 2018

CptS 479 Mobile Application Development

Homework 12

Due: April 17, 2018 (11:59pm)

General Instructions: Rename your project folder to be lastname-firstname. Create a compressed zip file of this entire directory and submit as an attachment under Content → Homework 12 for this course on the Blackboard Learn system by the above deadline. You may submit multiple times, but only the most recent entry submitted before the above deadline will be graded. Make sure all files are actually copied into the app directory and not just referenced elsewhere on your computer.

Bored with your flight simulator game, you decide you need something more immersive. For this homework you will use SceneKit to implement a shape launcher game. Basically, when you tap the screen, a randomly-colored, random shape will be launched toward where you tapped. A video of the game is available at <http://www.eecs.wsu.edu/~holder/courses/MAD/hw12/hw12.mp4> (note: the text effects are not part of the app). Specifically,

1. Start with a new Game project using SceneKit. Remove the entire art.scnassets group, and remove any reference to it in the GameViewController class. You can leave in the camera and lighting, but disable “allowsCameraControl”. You can leave in the tap gesture, but will be replacing all the existing code. The game should run in portrait or landscape orientation.
2. Add a short mp3 file to your project as a “launch” sound effect.
3. Upon detecting the tap gesture, the app should do the following.
 - a. Determine the direction to the tap from the bottom-center of the screen.
 - b. Select a random color from at least the colors: red, green, blue, yellow, magenta.
 - c. Select a random shape from at least the shapes: box, sphere, pyramid, torus.
 - d. Create an SCNNode based on this shape that is affected by gravity, but has no friction or damping, and full restitution.
 - e. Position the node at the camera position and add it to the scene.
 - f. Apply a random impulse torque to start the node rotating.
 - g. Apply an impulse force in the direction of the tap and in the -z direction.
 - h. Play the “launch” sound effect.
4. Celebrate! It’s your last homework.