| CSC 491 Assignment 3 | Author: Krishnan Mahadevan |
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## 1. Project Title

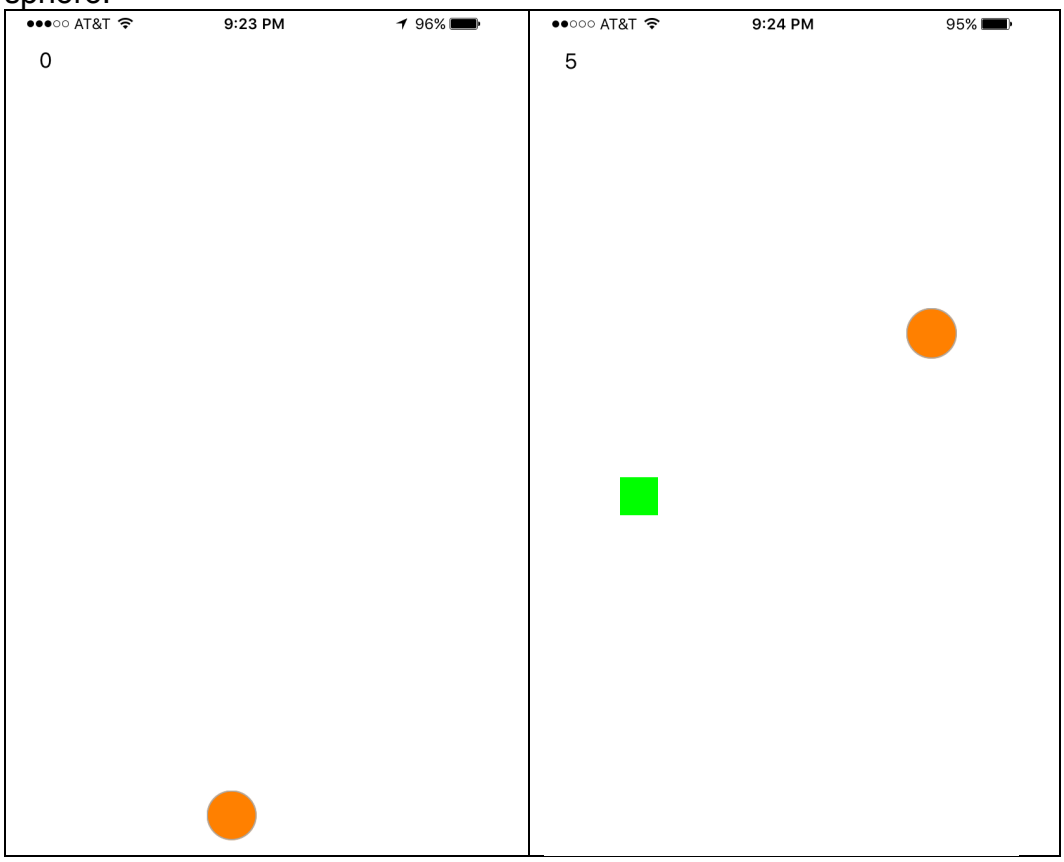
Assignment 3

## 2. Developer(s)

Krishnan Mahadevan

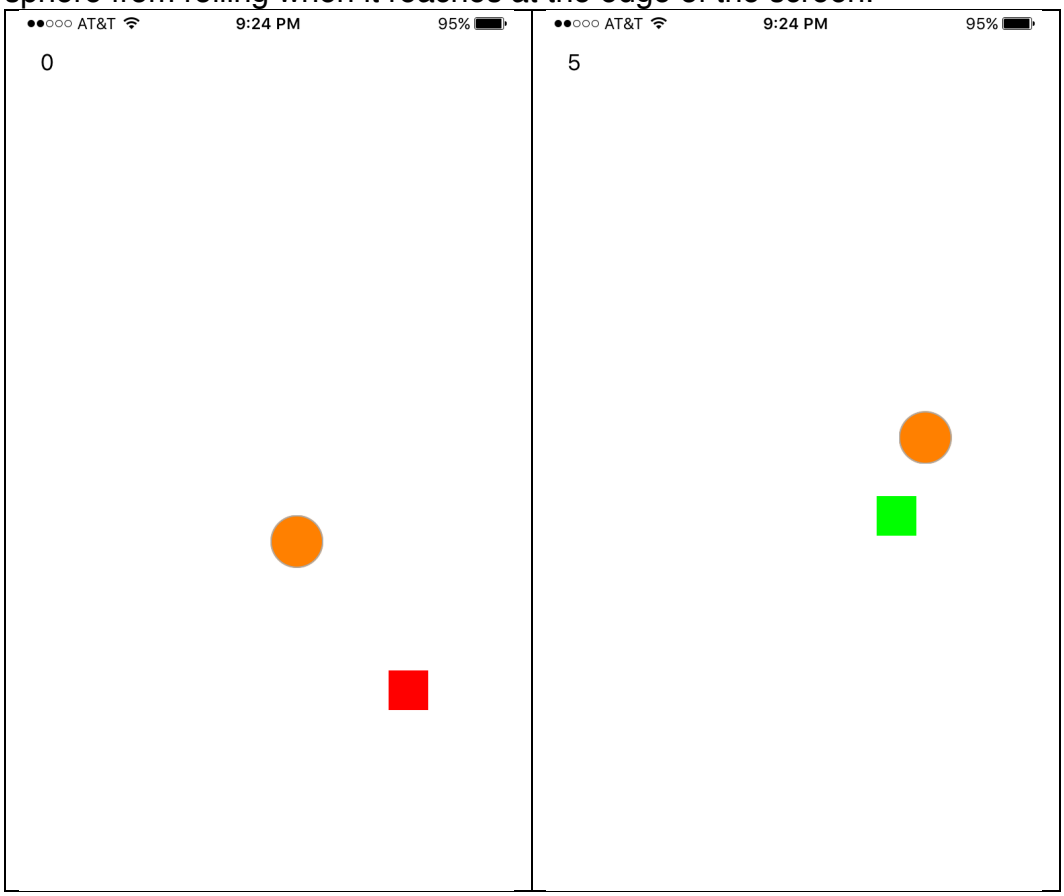
## 3. Project Description

For assignment 3, I am submitting the motion control game. It consists of a sphere that can be moved on any part of the screen, by tilting the IOS device. The app detects the direction of tilt and adjusts the velocity to set the sphere rolling. The ball comes to a stop when it hits the boundaries of the device. The IOS can be perceived to be a playing board with a ball rotating in it. To play the game the user must roll the sphere by tilting the phone to hit moving blocks, that appear sporadically from left to right of the screen. The blocks are distinguished by Red and Green colors. When the user hits a Green block, he will get 10 points. Similarly, when the user hits Red block he losses 5 points. The score board appears on the top left of the screen and keeps the total running as the user hits the block with the sphere.



## 4. Technical Design

The sphere is a UIView object called CircleView. The sphere's functionality is encapsulated by the CircleView Object, that inherits the abstract GameObject, which is a parent object. Its movement is propelled by points x and y readings from Accelerometer. Depending upon the data from Accelerometer, the x and y axis of the sphere are altered to give an effect of the sphere rolling. The screen bounds are taken considered to stop the sphere from rolling when it reaches at the edge of the screen.




Like sphere, the block is also a UIView object called BlockView. The action of creation of the block is managed by a Timer. When the blocks are created, they are assigned green and red colors randomly. Depending upon of the color tag values are assigned that are nothing but the points. Animation is applied to the BlockView object to move the block from left to right by adjusting the X axis. Similarly, the block randomly appears anywhere on the screen by calculating the Y axis. Multiple blocks appear simultaneously making it a challenge for the user to play the game. The system of the sphere colliding the block is designed using a Visitor Pattern. This makes detection and updating score a very clean approach.

Scores are managed by the Scoreboard object. The Scoreboard object is a singleton class and only once instance is available across the entire app.