

# ROLLING BALL Project

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## 1. Environment set up

Platform : Window7/Window8

Browser : Chrome

Specific browser setting for opening local image file

## 2. Game introduction:

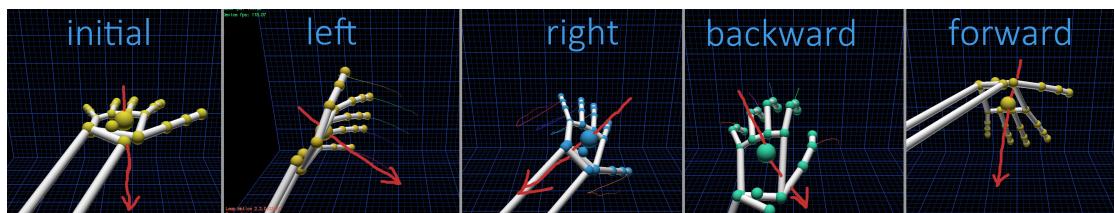
It is a challenging and entertaining 3D control game. In the game, with the help of LEAP MOTION, users use their hands to control the rolling directions of the ball. During the rolling process, the ball might come into different landforms, obstacles and need to trigger some elements to keep the game going. Users aim to pass all these landforms while avoiding obstacles and reach the destination as fast as they can.

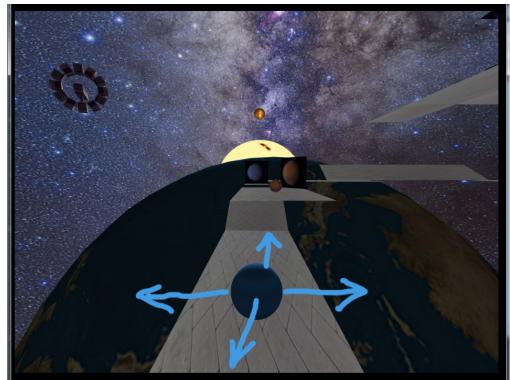
## 3. User interface

Both Leap Motion control and Keyboard control are available for this game.

### 3.1 Leap Motion control:

The normal vector of your palm is used to determine the external force (including the direction and magnitude) applied to the ball as the following figures show:



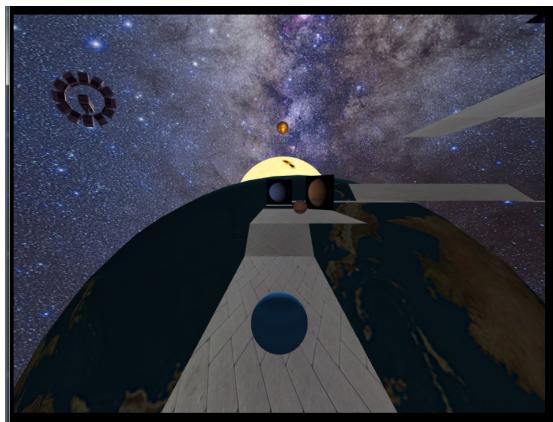


### 3.2 Keyboard control:

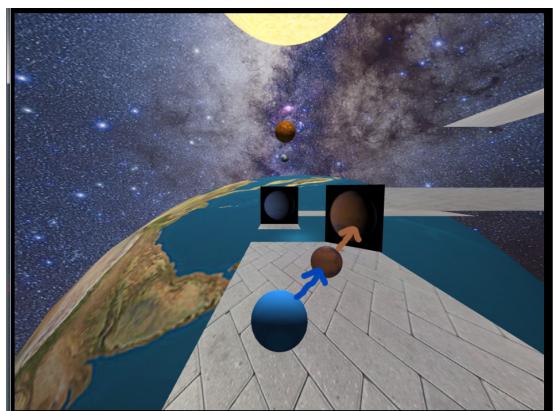
Use ‘w’, ‘s’, ‘a’, ‘d’ to control the ball moving forwards, backwards, leftwards, rightwards respectively.

## 4. Game Flow:

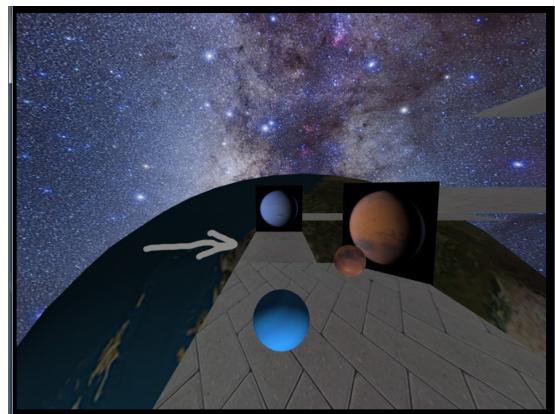
### 4.1 Beginning of game



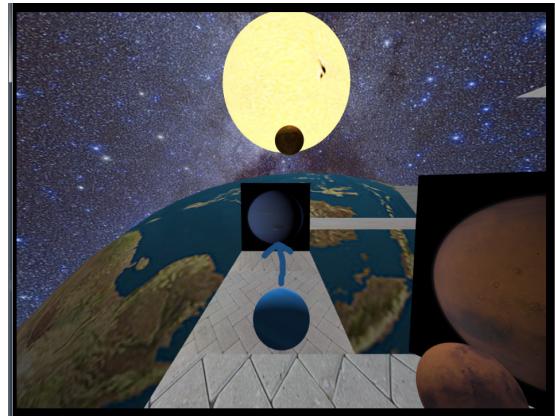
### 4.2 Control the ball to hit the brown ball.



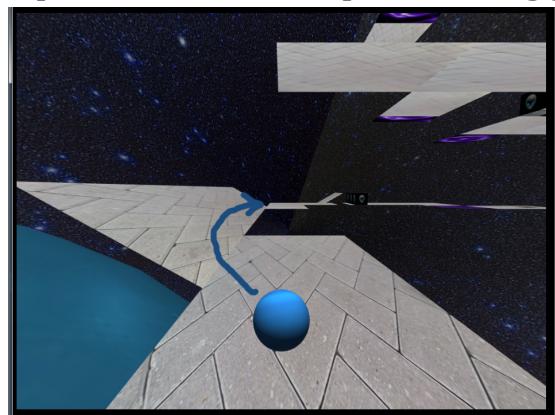
**4.3 The road ahead will not appear until the brown ball hit the specific board.**



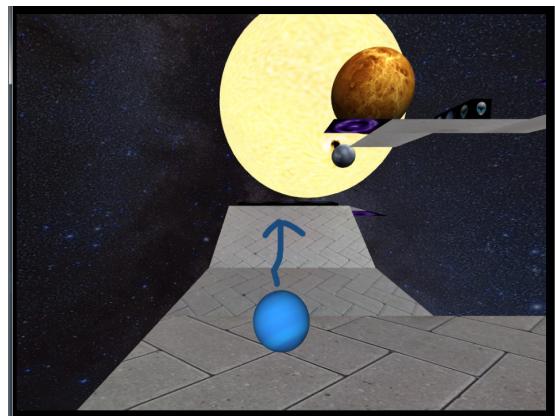
**4.4 Control the ball to push the cube in the way of your road**



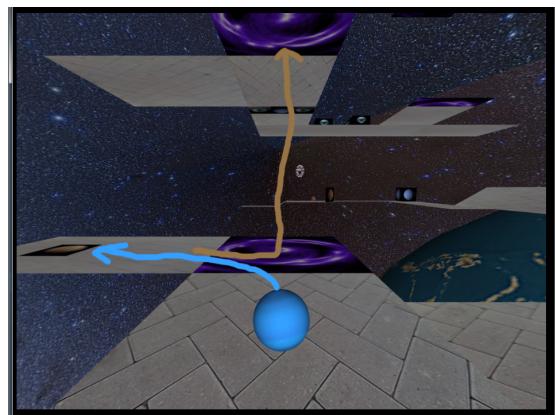
**4.5 By using the oblique wall, the ball can pass this long gap**



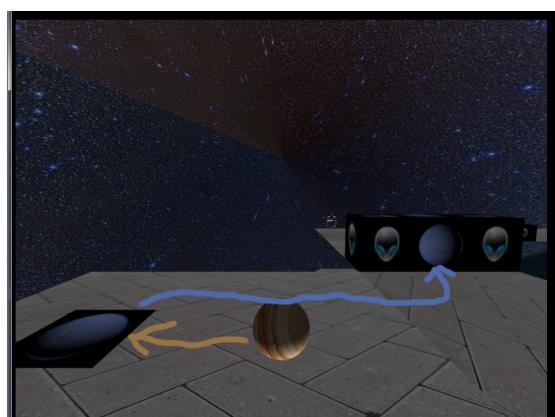
**4.6 The ball with sufficient speed can pass through the gap ahead of the slope.**



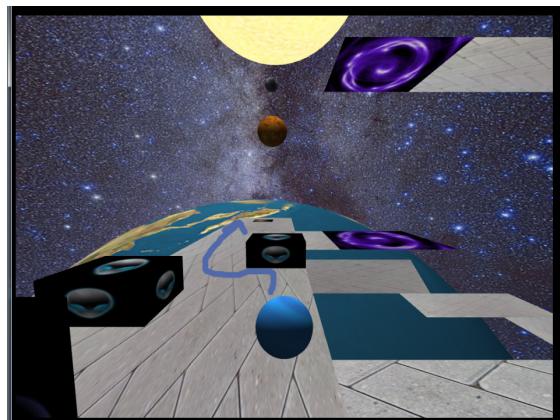
**4.7 The ball needs to transform by hitting the spot before it can get to the second floor**



**4.8 The ball needs to transform back before pushing the obstacle ahead**



**4.9 Control the ball to avoid the obstacles ahead**



**4.10 Another transform is needed to get to the third floor**



**4.11 Reach the red area and you win the game!**

