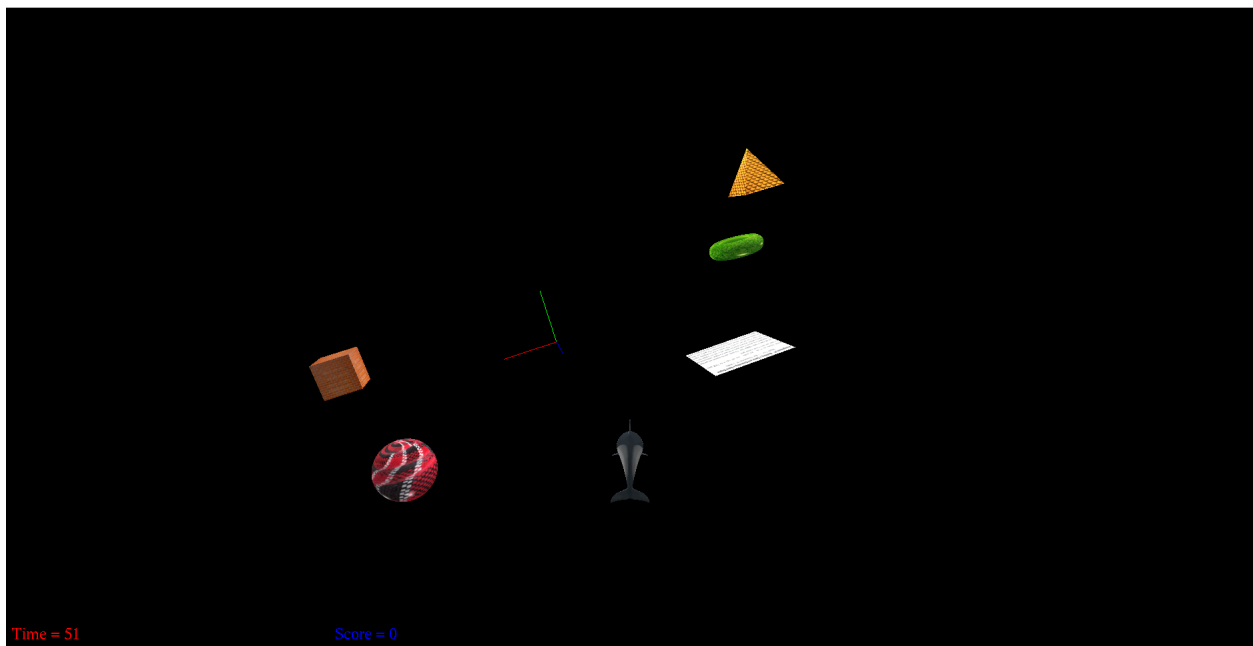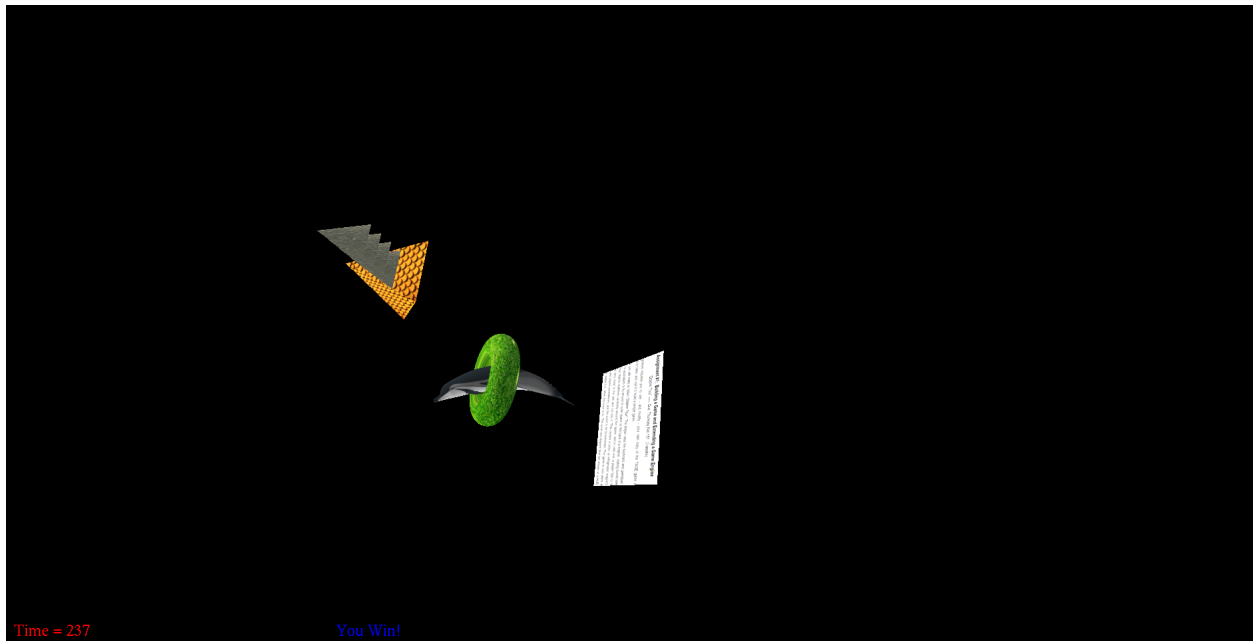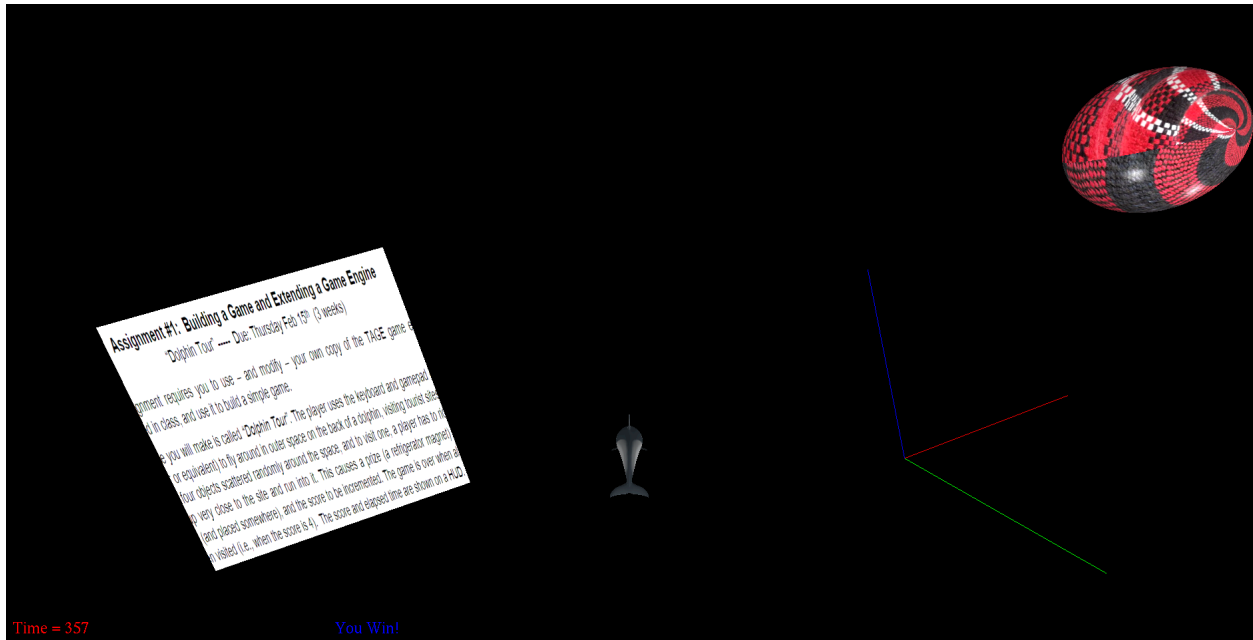1. Gabriele Nicula, CSC165-01, A1 – Dolphin Tour

2. Screenshot(s):

3. How the game is played:

Dolphin starts in the center and there are 4 objects arranged towards the corners of the screen. The objective is to visit all 4 objects with the dolphin in order to win.

Keyboard Controls:

       A/D: Yaw Left/Right

       W/S: Move Forward/Backward

       ArrowUp/ArrowDown: Pitch Up/Down

       Spacebar: Alternate between connected camera, and disconnected camera

       Q/E: Roll Left/Right

       2, 3: Wireframe true/false on the dolphin

       4: Reset camera to 0, 0, 0

       ESC: Escape to abort

       Note: SpaceBar and 2, 3, 4 keys work only after clicking the game window

Game controller

       X-Axis Left Joystick: Yaw Left/Right

       Y-Axis Left Joystick: Move Forward/Backward

       X-Axis Right Joystick: Pitch Up/Down

       Controller Button 3/4: Move Forward/Backward

4. Additional Game Activity:

Added dolphin roll on its moving direction axis with keyboard keys 'Q'/'E'

5. Additional Game Object

The additional game object is a manual golden textured object pyramid inspired by the course example. It is defined through its 18 vertices exactly like in the course example ManualPyramid.java. I applied a texture and positioned the object on the left upper corner.

6. "Refrigerator magnet" object is a textured triangle-shaped magnet. It is defined as a manual indexed object with 3 vertices. The definition is in a1\MyMagnetObject.java. The magnets are placed as "badges" on/near the custom Pyramid every time a "site" is visited by the Dolphin. The magnets are placed indexed on the Y coordinate to look like vertical string of magnets.

7. List of changes to TAGE engine:

   a) tage\GameObject.java: Added methods for computing movements of the game object, specifically:

   public void moveForwardBack(float speed) // limited to a max distance to origin
   public void pitch(float speed)
   public void yaw(float speed)
   public void roll(float speed)

   b) tage\input\action: Added classes that implement movements of the dolphin, specifically:

   tage\input\action\ForwardBackActionJ.java
   tage\input\action\ForwardBackActionK.java
   tage\input\action\PitchActionJ.java
   tage\input\action\PitchActionK.java
   tage\input\action\RollActionK.java
   tage\input\action\YawActionJ.java
   tage\input\action\YawActionK.java

8. The Logitech Wingman Cordless game controller did not work on "pitch" when bound to Axis.RY as my XBox controller did. So I changed "pitch" to bind to Axis.RZ which seems to be the left-right movement of the secondary joystick and it works. I tried many things, like binding to SLIDER as the device manager/controller device shows on Windows or tried using other axis.

Also I wish I had more time to comment all the classes and methods that I implemented.

9. Just having forward/backward dolphin movement on two Game controller buttons.

10. List of assets:

assets\textures\assign1.png - made by me

assets\textures\brick1.jpg - made by me

assets\textures\corvette1.jpg - [Closeup of Red and Black Striped Woven Fabric · Free Stock Photo (pexels.com)](#)

assets\textures\gold1.jpg - [Photo of Cone Pattern · Free Stock Photo (pexels.com)](#)

assets\textures\grass1.jpg - [Green Grass · Free Stock Photo (pexels.com)](#)

assets\textures\magnet1.jpg - [Metal Sheet · Free Stock Photo (pexels.com)](#)