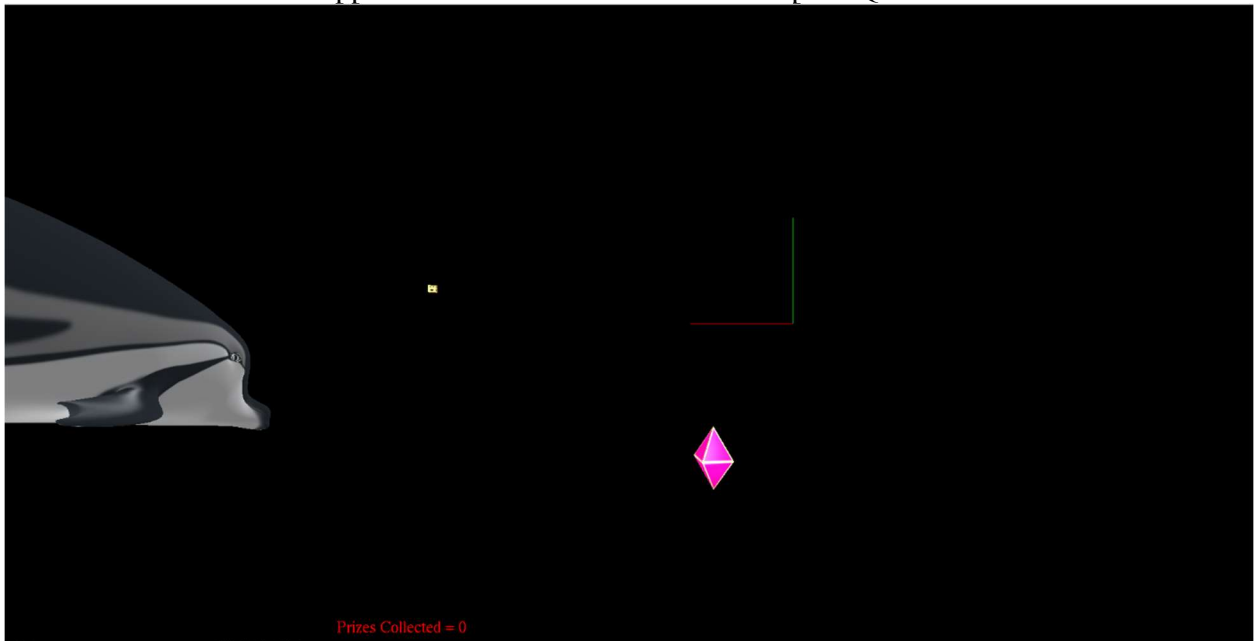


1. Nicholas Appert CSC-165 Section 1 “A1 - Dolphin Quest 1”



- 2.
3. Welcome to Dolphin Quest 1! You will be a perfect candidate for our new Space Dolphin Cleanup program. Over the years, we have genetically modified dolphins so that they no longer require oxygen and can swim through space! Isn't that spectacular?

Now for the job. We are still in the alpha testing phase, so we will start with something simple. Fetch as many artifacts from outer space as possible so we can research them and further our efforts to keep the galaxy clean and safe for interstellar travelers such as yourself.

Here are the basics for your space cleanup mission:

- There are three different artifacts you can find, the Cube of Happiness, the Sphere of Division, and the Candy Torus. Each will add one point to your Prizes Collected statistic.
- Unfortunately, we have not yet managed to genetically modify our dolphins with opposable thumbs, so you will have to dismount your dolphin steed and collect each artifact yourself.
- Don't worry, we will provide you with a tether so you don't get lost! It won't let you get too far away from your mount.
- We hit the budget on this one, so your tethers will not be elastic enough to bounce you back to your dolphin. Make sure you can get close enough before attempting to mount it once more.
- Additionally, our findings show you may encounter an additional very powerful artifact...more on that later.

### **Keyboard Controls**

W: Move Forward  
A: Turn Left  
S: Move Backward  
D: Turn Right  
Up Arrow: Look up  
Down Arrow: Look down  
Space: Mount/Dismount the dolphin  
E (while dismounted): Face the dolphin

### **Controller (xBox)**

Left Joystick: Move Around (similar to WASD controls)  
Right Joystick (up and down): Look up and down (similar to arrow key controls)  
B: Mount/Dismount the dolphin  
PRESS Right Joystick: Face the dolphin

4. **Additional Game Activity:** You didn't think the fun would stop there, did you? About that powerful artifact...it is none other than the Diamond of Power! If you let your dolphin get near it, it will receive a speed boost for a limited time and your counter will turn pink! Use this to your advantage to collect artifacts faster!
5. **Additional Game Object:** The Diamond of Power, which can be found closer to your deployment point and has been known to teleport after providing beings with its cosmic influence...Look for a bright pink diamond!
6. All right, enough with the act. Here are the changes I made to the TAGE engine!
  - a. I made an IControllable interface in order to link the differing functionalities of controllable GameObject and Camera objects together. Both classes now implement this interface and share the pitch() and yaw() functions.
  - b. I have written a pitch() and yaw() function for GameObject and Camera. Each takes in a float amount of rotation, up and down (for pitch) and left and right (for yaw), and applies that rotation to the objects they are called on. The pitch() function takes in positive values for upward rotation and negative values for downward rotation. The yaw() function takes in positive values for leftward rotation and negative values for rightward rotation.
7. As far as I can tell I got all requirements working.
8. I added an action on the controller, the B button, for mounting/dismounting the dolphin. Additionally, I added an extra action which invokes lookAt(dolphin) on the camera so it is less difficult to get lost.

*Assets List on Following Page*

## 9. Assets

- Animations
  - No animations.
- defaultAssets
  - No defaultAssets
- Models
  - dolphinHighPoly.obj – This asset was copied from the distributed TAGE examples.
  - dolphinLowPoly.obj – This asset was copied from the distributed TAGE examples.
- Scripts
  - No scripts.
- Shaders– These assets were all copied from the distributed TAGE examples.
  - heightCompute.glsl
  - HUDcolorFrag.glsl
  - HUDcolorVert.glsl
  - LineFrag.glsl
  - SkeletalVert.glsl
  - SkyBoxFrag.glsl
  - SkyBoxVert.glsl
  - StandardFrag.glsl
  - StandardVert.glsl
- Skyboxes
  - No skyboxes.
- Sounds
  - No sounds.
- Textures
  - diamondofpower.png – I made this.
  - divide.png – I made this.
  - Dolphin\_HighPolyUV.png – This asset was copied from the distributed TAGE examples.
  - smile.png – I made this.
  - stripe.png – I made this.