Final Project- Programming Virtual Reality-INFO-I590

As a part of final project, first took, prefabs from Unity Asset store to create a space station kind of environment. In this environment, I used a Robot prefab, and attach Third Person controller to it. However, the flow and run through the environment was quite sketchy and not fluid. Hence stuck to First Person Controller, and attached Robot Prefab to it, through fly through the environment. Created, 4 rooms which has different kinds of ideas I wanted to incorporate in the environment. Each of these rooms have been created with Wall Scripts, extending to what I have done in previous Assignments. Extended in the form of, the positioning of the walls and the colors consistent to the environment, made some effort to match to the environment.

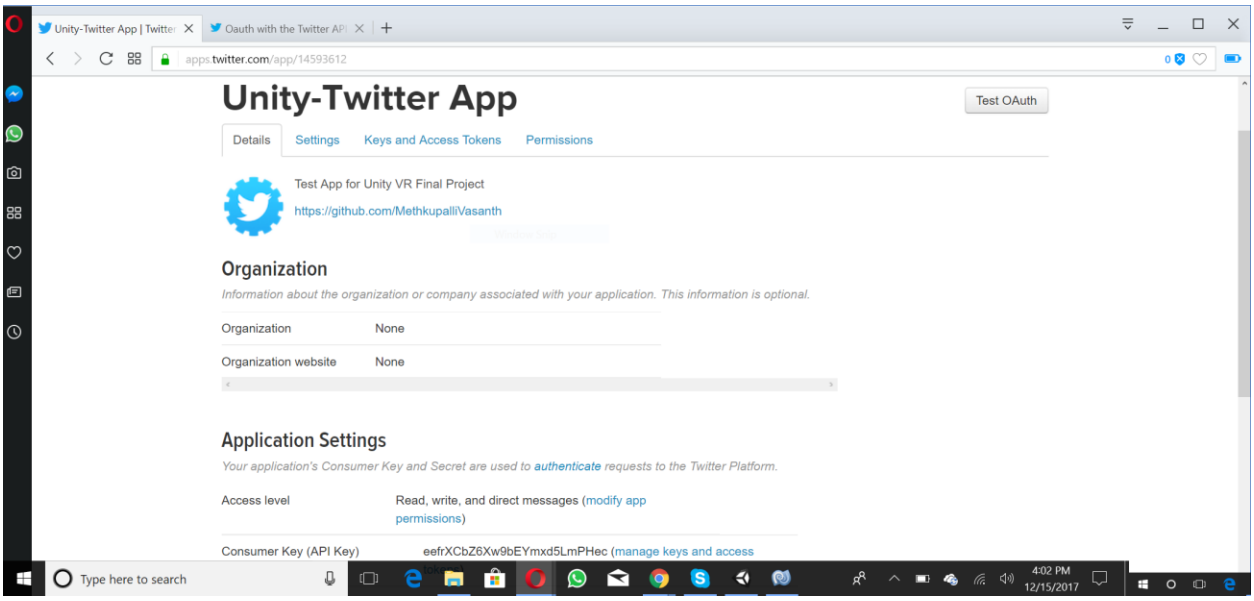
Essentially, the user can move around the scene, control his drone, with I and K keys to move it up and down, and move along with him. There are triggers for each treasure-chest.

When the user makes a jump to the bottom level from the edge, make sure he runs towards the halo and goes near the treasure chest. That's when the trigger is activated for Twitter access. Make sure, you clear the column in PIN and Tweet fields before authorizing it, while using the Twitter API.

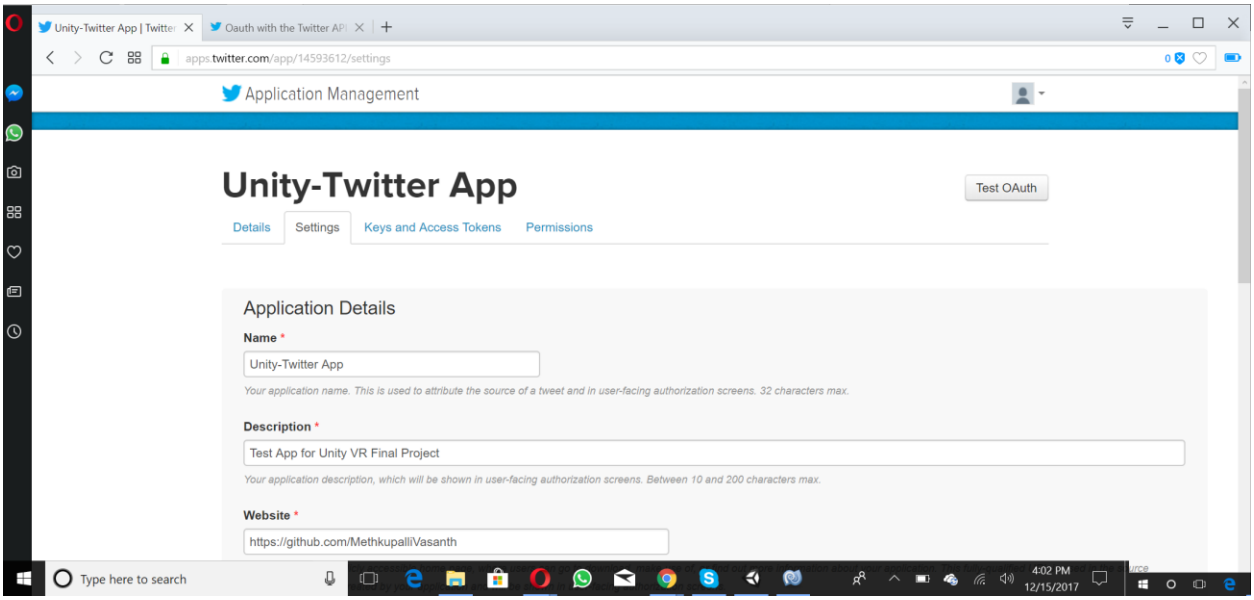
1. An immersive environment including: [50 points / 10 points each]
    - complex lighting- For complex lighting, I experimented with ambient light. Point light and added different tinges to make the environment look in sync and coherent. In addition to that, added a halo to the scene above the treasure chest where it had the twitter api trigger.
    - textures and materials-Used the copper as material to generate paths for the user to roam around the scene, made the path fit to the entry to the various rooms.
    - Sounds- Used some popular tracks, in one of the rooms to create triggers for treasure chest. Which is kind of like a challenge for the user to guess the tracks and post these tracks over twitter.
    - physics (i.e. interaction between objects): In one of the rooms, created bouncing cubes with varying colors with scripts. These can be pushed around for an interactive effect as well.
    - overall style/coherence: Based on the above textures and colors, tried to maintain a coherent feel throughout the environment.
2. User interaction. [40 points]
    - For user interaction, I have developed a couple of things where user can interact with the environment.
    - Allowed the user to be able to push the bouncy cubes with various colors.
    - Allowed the user to go into one of the rooms to look at the mirror to be able to look at the robot prefab attached to the third person controller. However, decided

not to use the controller, since it was hard to control the camera and head bob movement. So stuck with the First Person Controller.
    - User can interact by entering one of the rooms, and moving close to one of the treasure chests, plays a popular track which the user has to take note of. With all the three treasure chests.
    - By jumping of the top level user, can go to the second level where moving near to one of the treasure chests, issues a trigger for the user to enter the tracks heard in the top level and post it in Twitter.
    - Also, the user can control the drone, which hovers around him, can use the I key to go up and K key to move down. The drone follows the user.
3. At least 5 unique scripted elements. [85 points / 17 points each]
    - Based on previous Assignments, things learned from the class, and curiosity, went through with various ideas and implemented them.
    - Wall.cs scripts were written to create rooms and the walls, added color to those walls consistent to the environment colors. Was considering doing the complex maze with rooms, but decided in the last moment to stick with rooms.
    - DroneMovement script was written for the drone to move up and done, different functions were written for up and down movementS. Tried adding additional functions to control the front and back movements, however, decided to make it child of FirstPerson Controller, felt the movement and camera was better that way.
    - For accessing the Twitter API, I took some help from the Lets tweet twitter API and following steps were done, which I would like to discuss in detail in the next section. GUI for the user is developed using the Demo script, took the implementation of the API, and made some changes to the GUI to access twitter for posting tweets.
    - Sound_Trigger script was used to trigger the treasure chest and play the audio on triggering. Animation was achieved in that way.
    - Twitter_Activate script was used to create a trigger to load the GUI, for accessing twitter and posting the tweets, it has to be observed that the twitter game object has been created while unchecked which is later enable in the script, for the very reason to not pop out everywhere in the scene and rather act like a finish line.
    - Color_Changer script was attached to randomly bouncing balls which used lerp and time to change colors.

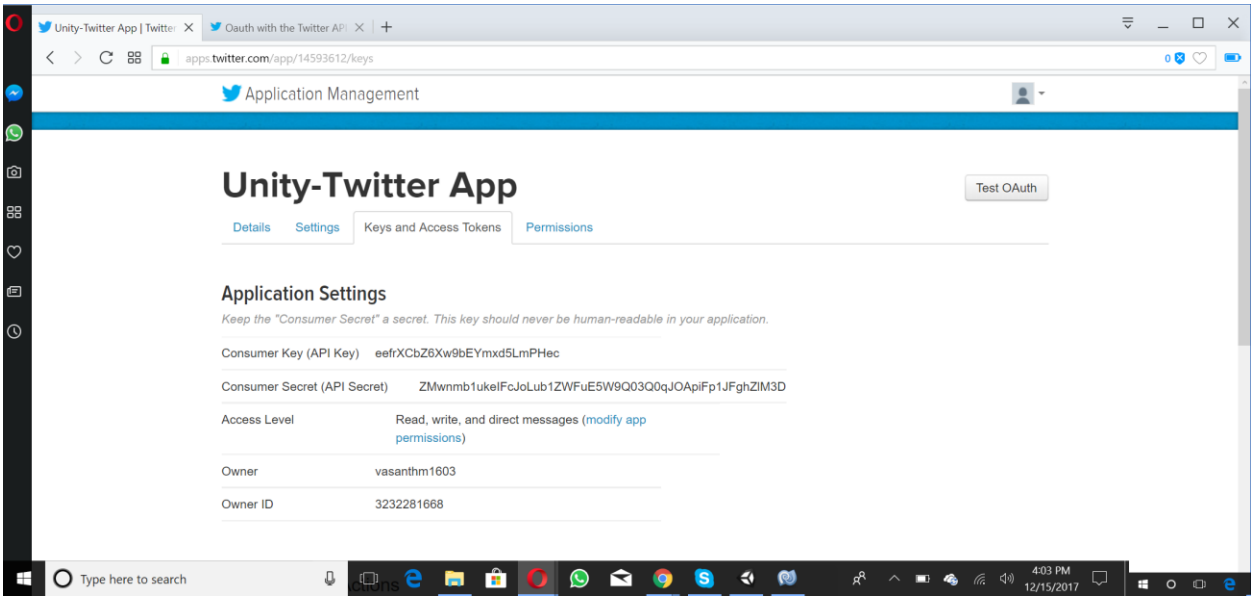
4. Following were the steps done to make twitter access available to the scene. Will go step by step describing the process. The API access code, Twitter.cs, was taken from the Lets tweet test app, however the GUI, and triggers on when to pop up was my primary focus and was able to demonstrate it in the following screenshots.



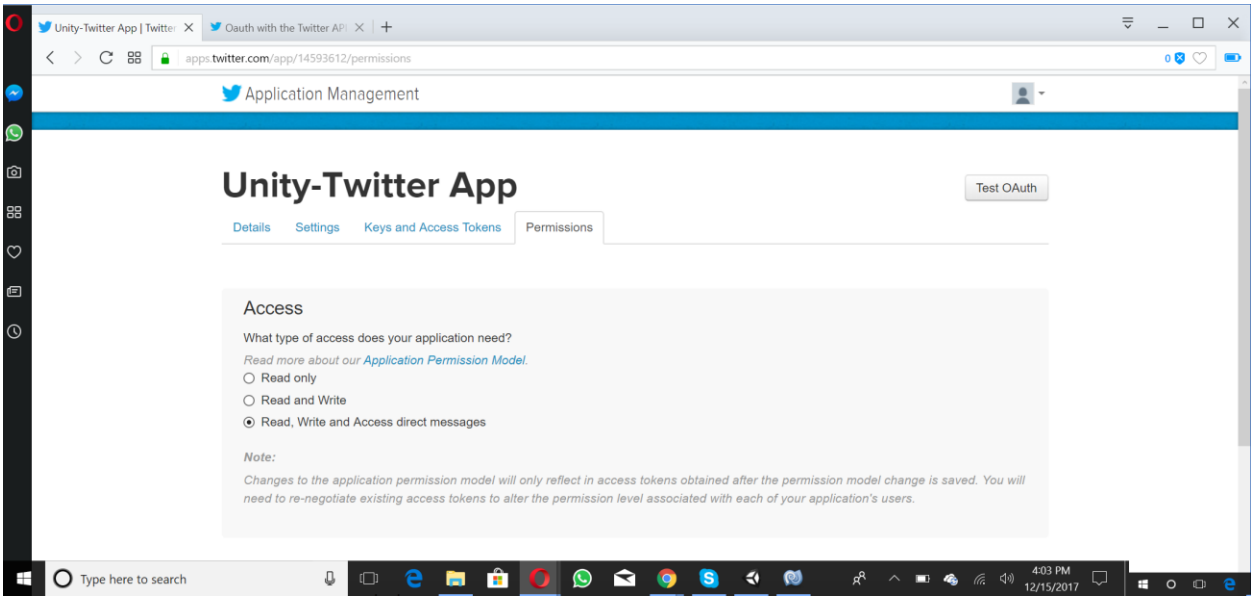
Step1: Create your own Test app in developers apps . And give your landing OAuth Url, and other details as necessary, forked the test app into my git repo as well.



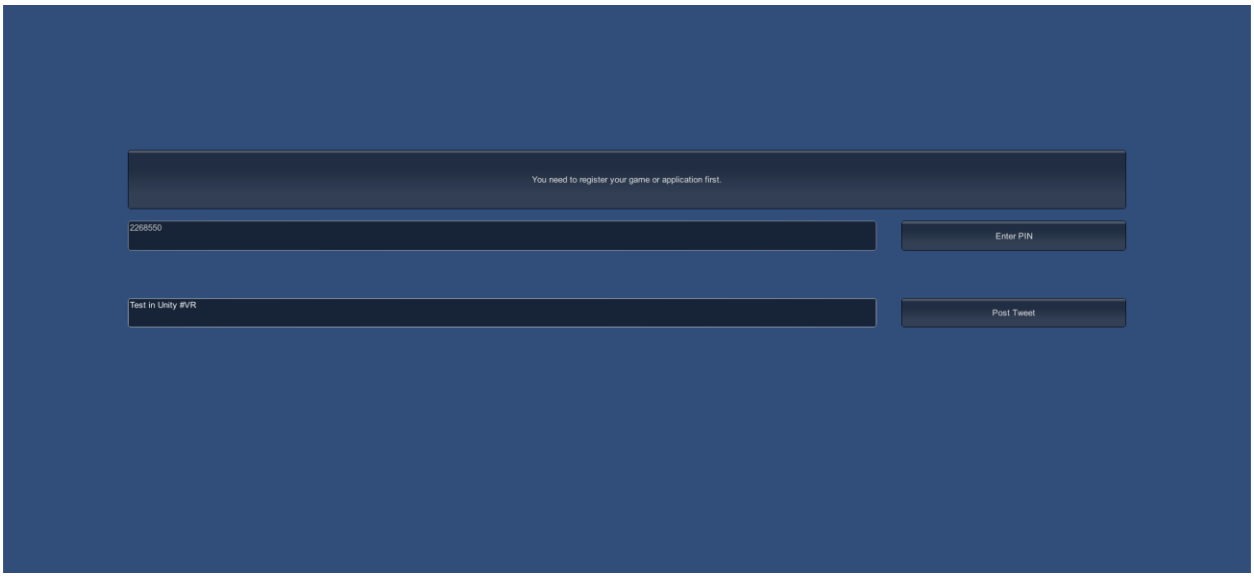
Step2: Updating the details and settings.



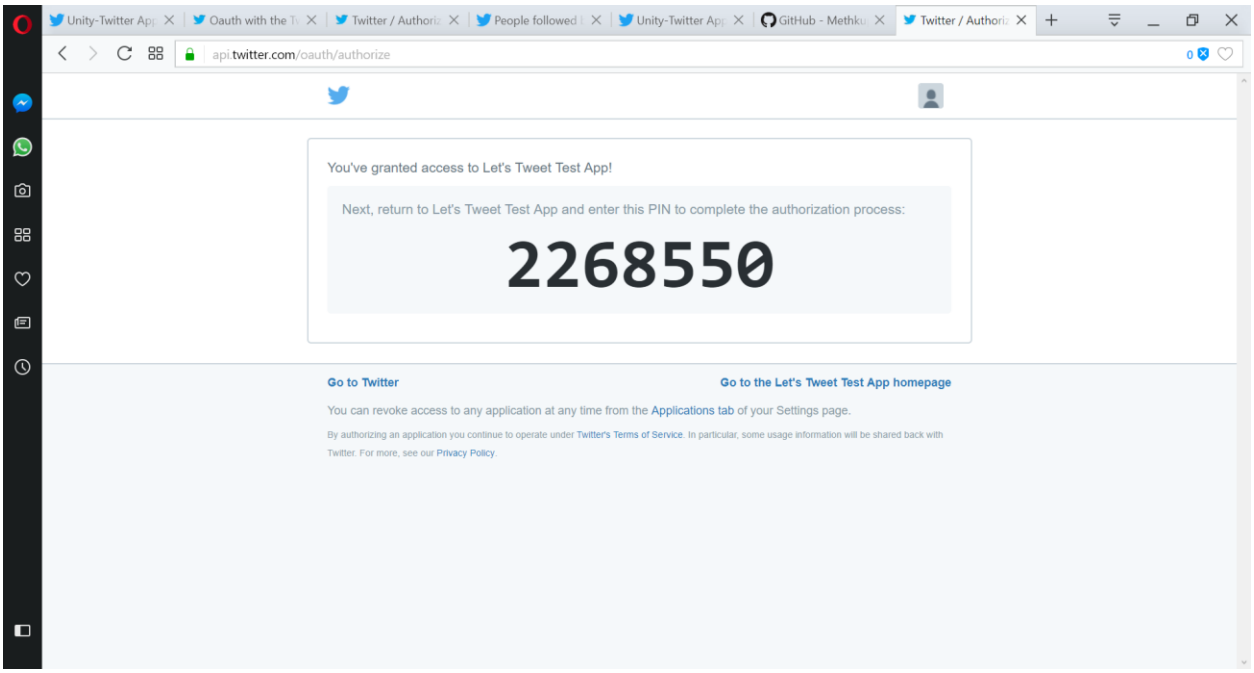
Step3: Getting the Consumer Key and Consumer Secret which has to be provided in the demo script to access the twitter api.



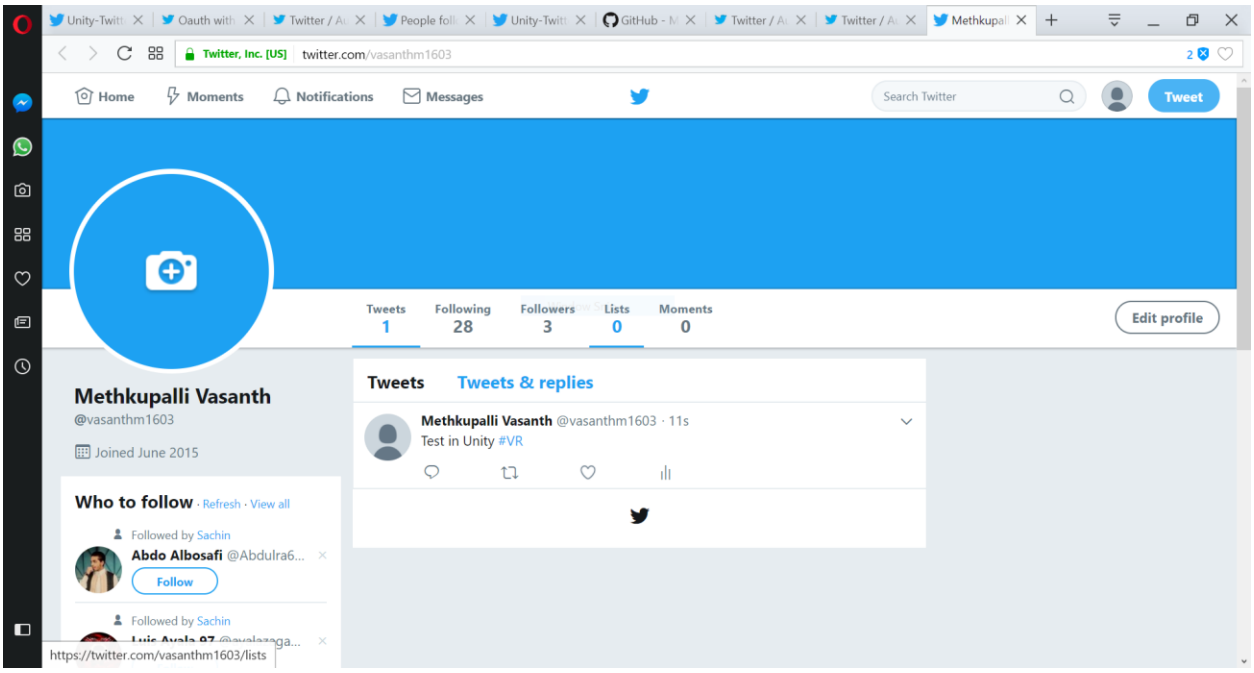
Step4: Providing proper permissions to access the API.



Step 5: Once we load the GUI, we need to give access for our application to GUI, and then it loads the user info directly from the next time. We click on generate pin to give us access, can be seen in the next image.



Step 6: Entering the PIN to give authentication to post the tweets.



Step 7: The same tweet entered in the GUI can be seen in the home page of the user.