

COSC 729: Virtual Reality and its Applications  
**Spring Semester 2017**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

This project is meant to familiarize you with the WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **3/6/2017**

**Submission:**

Submit your code files and all scene assets in a single zipped file (as a \*.zip) and submit the file on blackboard.

Example: **Assignment\_03\_sharma.zip**

**Description:**

In this project you will create a **VR City** environment. You are expected to create an entire virtual environment that combines 3D Studio Max models and WorldViz Vizard coding. You will be required to do the following:

1. **Modeling:** Create a Virtual City and have at least 10 Buildings
  - a. You have to use freely available 3D models over the internet.
    - You have to use atleast 2 models from 3ds Max (import Greek temple)
    - You have to use atleast 2 models from Sketch up
  - b. You have to use textures
  - c. At least 12 **UNIQUE** models
    - i. Must be different models (trees, streets, cars, etc)
    - ii. Must be uniquely textured
    - iii. Must use simple animations in Max or in Vizard
  - d. You must use polygonal modeling or convert non –polygonal objects to a polygonal object in order to export from Max to WorldViz Vizard.
  - e. Export your model from 3D Studio Max into Vizard using the OSG/IVE exporter.
  
2. **Programming:** The VR City should comprise of
  - a. Add atleast ten avatars in the environment
    - Make one avatar go around the Greek temple
    - Utilize keyboard or mouse callbacks to control the movement of the avatars.
    - Change the speed of the avatar through the user of cursor.Refer: C:\Program Files\WorldViz\Vizard5\tutorials\GUI
  - b. Add multiple windows  
Refer C:\Program Files\WorldViz\Vizard5\examples>windowViews
  
  - c. Add a sky with environmental map, add audio file  
(Refer "Using actions example.py")  
Refer: C:\Program Files\WorldViz\Vizard5\tutorials\multimedia
  - d. Create action events in the environment [refer animating avatars example.py]
    - comment the code to mention action event1, action event 2, etc.
    - Action events should be on other objects in the environment(Refer "teacher in a book" for vizard. Refer "animating avatars example.py")

3. Create an **AI controlled behavior and path finding** for evacuation

a. You can use the AI functionality implemented for bees as mentioned in "teacher in a book" for vizard.

Refer "transformations and the scene graph example.py"

(Refer path following behavior in "onTheFly.py" in tutorials)

**Or**

b. Use functionality to demonstrate the various kinds of animations that can be exported by our 3ds Max exporter plugin.

Refer: C:\Program Files\WorldViz\Vizard5\examples\animations\ ImportedAnimations.py

**Extra Credit**

1) Add Graphical User Interface

Refer: C:\Program Files\WorldViz\Vizard5\examples\graphicalUserInterfaces

C:\Program Files\WorldViz\Vizard5\examples\animationPaths/