COSC 829: Advanced Virtual Reality Systems
Fall Semester 2013
Instructor: Dr. Sharad Sharma
Assignment 2

This project will span a period of 4 weeks and 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: **10/3/2012**

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_02_sharma.zip**

Description:

In this project you will create a *VR University* 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 building and at least 8 classrooms
    a. You can use freely available 3D models over the internet.
    b. You have to use textures
    c. At least 12 **UNIQUE** models
        i. Must be different models (computers, benches, chairs, etc)
        ii. Must be uniquely textured
        iii. Can 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 University should comprise of
    a. Add atleast ten avatars
        - Utilize keyboard or mouse callbacks to control the movement of the avatars
    b. Add a sky with environmental map, add audio file
    (Refer "Using actions example.py")
    c. 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. **Multi-agent System**: 1 **CUSTOM** avatar (such as a student or instructor) and 1 **INBUILT** avatar in vizard to create a multi-agent system.
    a. Must use a basic bone system and animation
4. 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 path following behavior in "onTheFly.py" in tutorials)