

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.**  
(Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.** (Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.**  
(Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.** (Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.** (Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.**  
(Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.** (Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.** (Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment



COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.**  
(Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.** (Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.** (Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment

COSC 477: Virtual Reality and its Principles  
**Fall Semester 2016**  
**Instructor: Dr. Sharad Sharma**  
**Assignment 3**

**VR City** Environment [Part 2]

This project will span a period of 1 weeks and is meant to update the previous assignment 2 you developed using WorldViz Vizard IDE. This assignment will get you prepared for the final project.

Please submit your assignment by: **10/3/2016**

**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 update the **VR City** environment. You will be required to do the following:

1. **Multi-agent System:** 2 **CUSTOM** avatars (such as a civilian and fireman) and **INBUILT** avatars in vizard to create a multi-agent system.
  - a. Must use a basic bone system and animation
  - b. Utilize keyboard or mouse callbacks to control the movement of the avatar you are logged in as.  
(Refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars)
2. **Audio:** *The VR City should comprise of*
  - a. Add sounds for avatars (refer: C:\Program Files\WorldViz\Vizard5\tutorials\avatars\speech.py)
3. **Programming:** Create evacuation scenario
  - a. **Slider:** add a slider to increase or decrease the speed of agents.( C:\Program Files\WorldViz\Vizard5\tutorials\GUI\
  - b. **Click an agent: Add text or any relevant description for agents when clicked.** (Refer; C:\Program Files\WorldViz\Vizard5\tutorials\picking)
  - c. Add two **proximity sensors:** Refer: C:\Program Files\WorldViz\Vizard5\tutorials\proximitySensors)
  - d. **Data File:** Record the elapsed time in a txt file. Record how many exits (key points in the city)the user saw before exiting. (Refer: C:\Program Files\WorldViz\Vizard5\tutorials\data\data.py)  
Note: copy the data.py from program files to a different location to play the file
  - e. **Virtual evacuation drill:** Incorporate the following script in your project. Make necessary adjustments to incorporate it in your city evacuation project.  
C:\Program Files\WorldViz\Vizard5\tutorials\flowControl\ experimentDesign.py
4. Extra Credit
  - a. Add fire and smoke in the environment