

# Multi-User Educational classroom Environment in Unity 3D:

---

NARAYANA SWAMY KOPPOLU

SARIKA RAJEEV

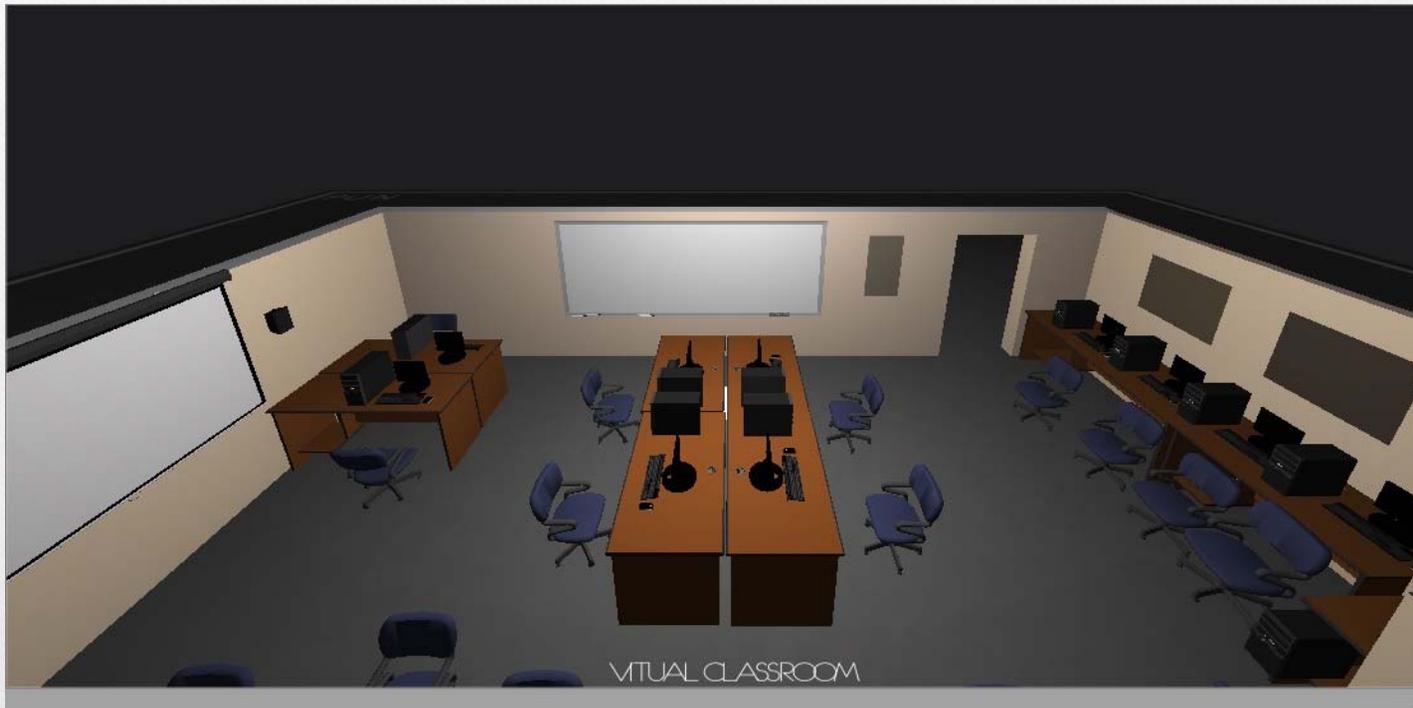
# Goal of the Project:

---

- The goal of the project is to presents a Virtual Reality Classroom environment that is similar to second life. The online virtual classroom is developed so that students can interact with each other and study together.
- The purpose of this project is to use a virtual reality classroom as a learning tool for education and for students that are enrolled in online classes. Our research focuses on how to create a virtual instructor and virtual students and how to integrate them into the online virtual reality classroom.
- The proposed system is a collection of different Virtual Classroom model environments created in sketch up and exported to Unity 3d which constitute the base of this application. Animations and interactivity were added to the environment through a variety of techniques.

# Educational classroom Environment

---



# Software's used in this project:

---

- Sketch up
- Unity 3D

# Functionality used

---

- Lights: We added spotlights. It combines both directional and point lights, and casts a cone of illumination that can be adjusted to have either a sharp or a soft edge around a circular illumination area.
- We added a sky using edit->Render setting, then clicking on skybox material.

# Functionality used cont....

---

- Photon Unity Networking : We used photon unity networking to produce multi user environment .
- Collision: We used the built-in collision detection will detect when the viewpoint has collided with another object in the scene and stop the viewpoint from moving any further.

# Functionality used cont....

---

- Added 1 avatar, whose clone added to environment, when a user tried to enter in the environment.
- Utilize keyboard or mouse callbacks to control the movement of the avatars.
- Avatar Animation: Avatar is walking and idle in the scene.

# Descriptions....

---

- A 3-d model third floor of computer science building was created in sketch up.
- The model was imported in unity 3-d.
- Using photon unity networking a multi user environment was developed.
- A chat system was coded using C-sharp language.

## Descriptions cont...

---

- When student login in virtual class, an avatar of the student will be added in the virtual class.
- Arrow keys allows the student to navigate around the virtual classroom.
- Students can chat with the instructor and other students using chat-box.
- The students can leave the class using leave room button.

# Login Instruction for the students ..

---

Welcome to virtual reality Online class

student name:

classroom no:

1 students are online in 0 rooms.

Currently no classroom are available.  
Classrooms will be listed here, when they become available.

# Student in virtual classroom...

---



# Difficulties encountered:

---

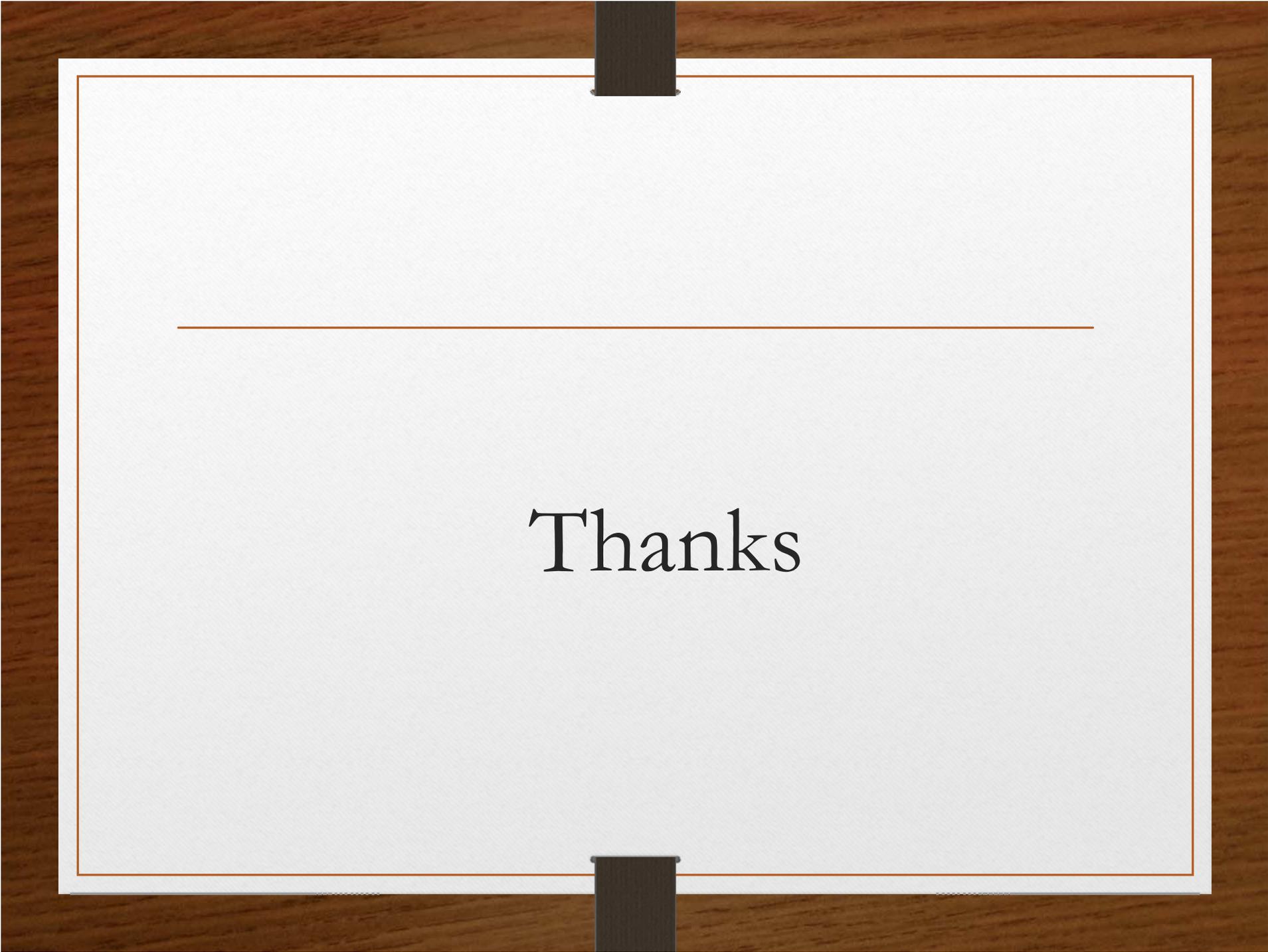
- Major problem we encountered is Collision of the user with the surroundings.
- Network connection.

# Future development...

---

- We would also like to implement alternative modes of inputs such as head mounted displays, Microsoft connect and data gloves .
- We want to do animation at the time of providing lecture by the instructor.

.



---

Thanks