

#### **PROPOSAL**

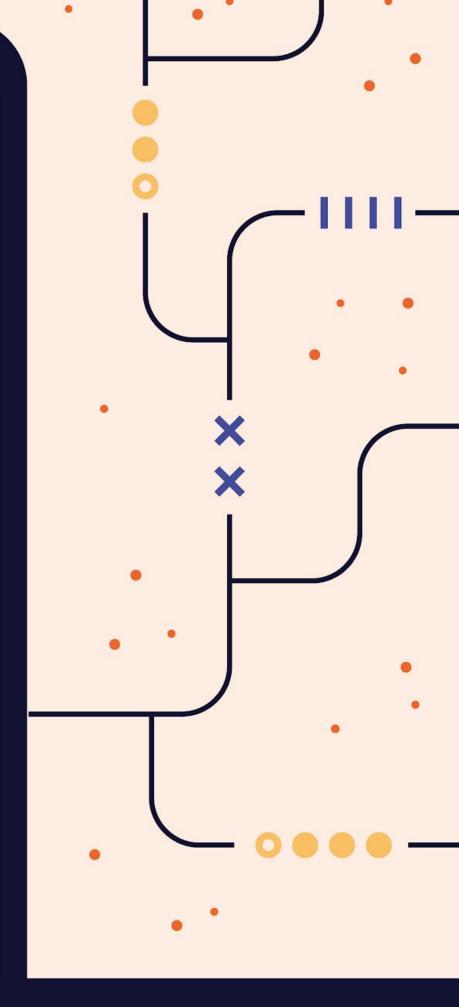
- Drum kit simulation
- Placed in a galaxy on a stage
- Keys on the keyboard are pressed to play different sounds from the drum kit

- Changeable stage lighting
- Optional metronome backing to play along to
- Spherical camera manipulation to move around the stage

### Demonstration







## CONCEPTS FROM CLASS

# Object Model Viewers & Cameras

- Used downloadable .obj files & Blender, to create the final model
- Incorporated a spherical camera to move about the scene
- Used the Phong model for stage lighting
- Focus on diffuse and specular
- Heavy use of rgba

Lighting

#### Skyboxes

- Used to create a galaxy-like atmosphere surrounding the stage
- Essentially places
   a texture on a
   large cube and
   places the camera
   inside of it

- Heavy use of UI features with Pygame package
- Recognizes
   keydown and
   mouse
   movements to
   change lighting
   and toggle
   options

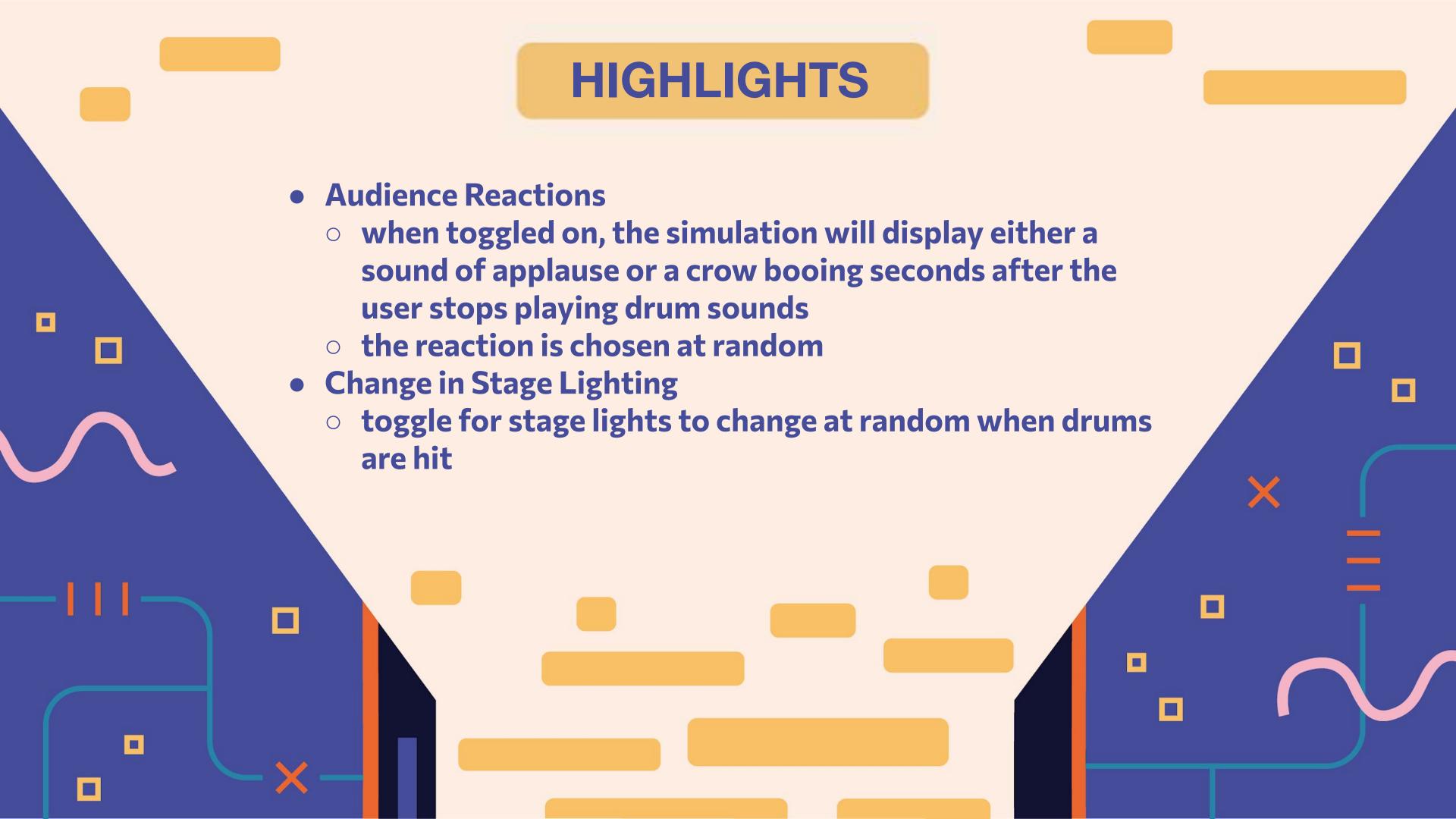
UI & Pygame

# CONCEPTS BEYOND CLASS

- Used Pygame.mixer module and free .wav files from online
- Includes functions such as:
  - Sound()

**AUDIO UI** 

- Music()
- o .stop()
- play()
- pause()
- .fadeout()
- o .set\_volume()



#### **DIFFICULTIES**

#### Hardcoding of Model

 Issues with path implementation on Windows computer to delete drag & drop necessity

#### **Light Location**

 Determining where the stage lights were in the model to line up the light spheres

#### **Audience Reaction Timing**

 Implementing sound in the Graphics Engine rather than in the UI caused unwanted looping sounds

#### **Searching for Sounds**

 Finding good quality, free, and downloadable sounds online took a lot of time

#### FUTURE ADDITIONS

 Addition of drumsticks that move to the specific drum as its key is pressed

 Drum head/cymbal lights up as a different color when its key is pressed

OR

- Guide for keyboard function that can be toggled on and off
- Lighting animation stage lights move back and forth, flash, etc.