ACM Game Development Project – Review Sessions

1st Chapter: Basic Concepts on DirectX

Objective: Create a basic DirectX environment for our application

DirectX objects:

- Using Direct3D, create an object capable of drawing in the 3D environment.
- Using DirectInput, create an object capable of retrieving input from keyboard, mouse and game controllers.
- Using DirectAudio, create an object capable of providing sound playback.
- Using Direct3D Lighting, create an object capable of controlling lighting in the 3D environment.

First Drawings

- Game Loop and concept of scene in DirectX
- Draw polygons using indexed vertex
- Applying Textures to a polygon

2nd Chapter: Basic Concepts on DirectX

Objective: Incorporate and combine different elements to a DirectX scene.

2D Objects

- Create and render 2D panels
- Review the panel.cpp class

3D Objects

- The DirectX (.x) format for mesh models
- Load Mesh Models
- Render Mesh Models
- Review the mesh.cpp class

Animated 3D Models

- Index animated mesh models

- Load Animated Mesh Models
- Render Animated Mesh Models
- Review the model.cpp class

Sound Playback

- Load mp3 and wav files
- Play sound files
- Review the sound.cpp

3rd Chapter: Game Project Implementation

Objective: Review the structure of a game application.

Game Application Structure

- Implement dynamic libraries for meshes, sounds and textures
- Implement the game loop.
- Implement the Render_2D function.
- Implement the Render_3D function.

The Render_2D function

- Implement an array of 2D objects to render.
- Implement transparent textures for 2D objects.
- Render using the panel.cpp class

The Render_3D function

- Implement an array of 3D meshes to render.
- Implement an array of 3D animations to render.
- Render using the mesh.cpp and model.cpp classes.

4th Chapter: Game Scene Design

Objective: Review the elements of a 3D game scene

Terrains

- Create a Terrain using indexed vertex.
- Apply textures to a Terrain.
- Blend textures using texture stages.
- Blend textures using pixel shaders.
- Ideas for optimization

Skyboxes

- Create a skybox using indexed vertex
- Create a sky dome using meshes
- Ideas for optimization
- Implement a database with event responses.
- Collect event status from all game objects subject to events.
- Play sound on event.
- Update animation on event.
- Change game state on event.

5th Chapter: Game Scripting

Objective: Review techniques of game scripting and On-Play updating.

Game Scripting

- Review concepts of game scripting
- Review concepts of online game scripting

Game Objects

- Review techniques for grouping of game objects
- Review the use of classes to group and update game objects
- Create object classes for different game objects

Updating the game state

- Create an update function for the objects of the game
- Update from databases (xml)
- Update using DirectX DirectPlay
- Ideas for optimization of the update function