

3D Ball Catching Simulation Using Maya

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Course: GVC – Graphics & Visual Computing

Overview:

This project implements a simple but interactive 3D mini-game built using Autodesk Maya 2026 and Python (maya.cmds). A ball repeatedly falls from random positions, and the user interacts with a paddle to catch it. The project demonstrates 3D modeling, animation, scripting, UI creation, HUD display, and object interaction.

Objectives:

- Create an interactive 3D game environment in Maya.
- Implement falling-ball animation using Python scripting.
- Provide paddle movement controls through UI and keyboard binding.
- Display score using a heads-up display (HUD).
- Apply GVC concepts such as modeling, animation, simulation logic, and UI integration.

Tools Used:

Autodesk Maya 2026, Python (maya.cmds), Maya Script Editor, Playback timeline, Maya UI Elements.

Key Features:

- 3D modeled environment (walls, ground, paddle).
- Procedural ball creation at random X–Z positions.
- Smooth falling animation using keyframes.
- Paddle movement via UI buttons and keyboard.
- HUD-based scoring system.
- Automated spawn intervals and difficulty scaling.

GVC Concepts Used:

Modeling, Animation, Python scripting, UI creation, Interaction logic, Camera framing, Lighting & rendering.

Conclusion:

The project successfully demonstrates an interactive 3D simulation in Maya using animation-driven logic and Python scripting.