

# CSC 496 Fall 2023

## Lab 4: Create a Mini-Game Using SpriteKit

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Figure 1: Game developed with SpriteKit

## Introduction

The goal of this lab is to develop a game using SpriteKit with the following requirements:

- Understand the basics of game development in SpriteKit.
- Implement game mechanics such as moving objects and collision detection.

Our course webpage: <https://www.cs.wcupa.edu/schen/ios23/>

# Lab Instructions

## Objective

Create a game similar to Richman 4 using SpriteKit.

## Key Concepts to Cover

- SpriteKit basics
- Game physics
- Collision detection
- User interface design for games

## Requirements

1. **Player Movement:** The player should be able to move back and forth on the x-axis.
2. **Object Generation:** Coins and bombs are to be randomly generated and fall from the top of the screen.
3. **Object Disappearance:** Coins and bombs should disappear if they hit the ground.
4. **Coin Collection:** The player is to collect coins before they hit the ground, with a display showing the total number of coins collected.
5. **Game Termination:** The game ends immediately if the player contacts a bomb.
6. **Character and UI Design:** You are free to choose your own character profile and build your own game UI.

## Evaluation Criteria

- Implementation of game mechanics and SpriteKit features (70%)
- Creativity in character and UI design (20%)
- Code quality, readability, and comments (10%)

## Deliverables

Submit your lab report (in PDF format) and the entire project as a compressed zip file to D2L under the appropriate lab assignment. Include all code and project setting files (.xcodeproj).