CSC 496 Fall 2023
Final Project: A 2D Role-Playing (RPG) Pokémon Game

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Figure 1: Pokemon Game

Introduction

The objective of this final project is to apply the principles of 2D game development within Apple's SpriteKit framework to create an engaging Role-Playing Game (RPG) featuring Pokémon. This project serves as a hands-on opportunity to synthesize knowledge of inter-

active game dynamics, SpriteKit's suite of tools (Scene Editor), and the Swift programming skills acquired throughout the course. Key learning outcomes include:

- Mastering the SpriteKit framework to construct a 2D game environment.
- Implementing touch-based controls for player movement and interaction.
- Designing and managing game entities using the Entity-Component system.
- Integrating audio to enhance the gaming experience.
- Utilizing game physics to add realism and challenge to the gameplay.
- Developing a system to track and display the Pokémon captured by players.

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

Lab Instructions

Objective

Create a 2D Role-Playing (RPG) Pokémon game using SpriteKit and demonstrate it on your iPad by recording a video.

Key Concepts to Cover

- SpriteKit basics
- Game physics
- User interface design for games
- Entity-Component Design Patterns
- Audio integration in games

Final Project Requirements

Create a 2D Role-Playing (RPG) Pokémon game using SpriteKit with the following requirements:

1. The player can move around in the game world and capture Pokémon (10%).
2. Use SpriteKit with Scenes and Nodes to design the game world (5%).
3. Include an on-screen controller to move the player and a camera to track the player (10%).
4. Utilize the Entity-Component Design Pattern to add Collectibles and Physics to your

game (10%).

5. Add background music and sound effects (5%).
6. Track and display all Pokémon captured by the user (Bonus 5%).

Deliverables

Submit your app demo video (run your game on a real iPad) and the entire project as a compressed zip file to D2L under the appropriate lab assignment. Include all code and project setting files (.xcodeproj).

Submission

This is a group project. Each group only needs to submit one video and one set of code.

- Check the lab due date on the course website. Late submissions will not be accepted.
- Submit your assignment to D2L directly. When the group leader submits the project, please include the names of all team members in the Comments section of the submission form. This ensures proper credit is given to each group member.
- **No copy or cheating is tolerated**. If your work is based on others' or AI, please give clear attribution. Otherwise, you **WILL FAIL** this course.