COSC2659 - iOS Development Assignment 2

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Introduction

Memento is a sound memory game that provokes players to trigger their memory. The name of the app is inspired by the movie Memento directed by Christopher Nolan. By searching for a resemblance game in the App Store, I can safely determine that this game can be listed in the Card game category.

Motivation
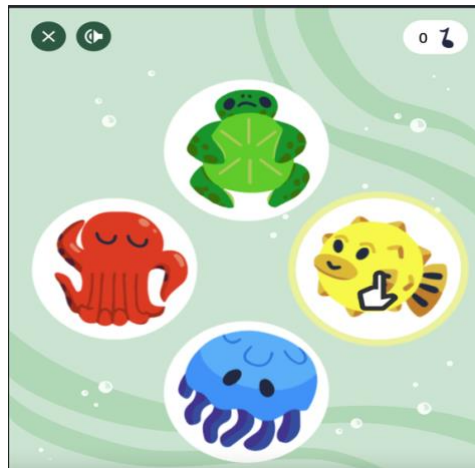
Google Memory Game

While searching for game inspiration, I stumbled to see Google Memory Game and I was curious about how to make the game in SwiftUI.

Game rules

This is a unique and engaging interactive sound-matching memory puzzle game. The computer will play first, and players try to repeat the tiles. Try to remember as much as possible. Each round will give you 5 points. The game has 3 levels: easy, medium, and hard with respective of 60, 30, and 15 seconds. This cool sound game will challenge and sharpen players' listening and memory skills.
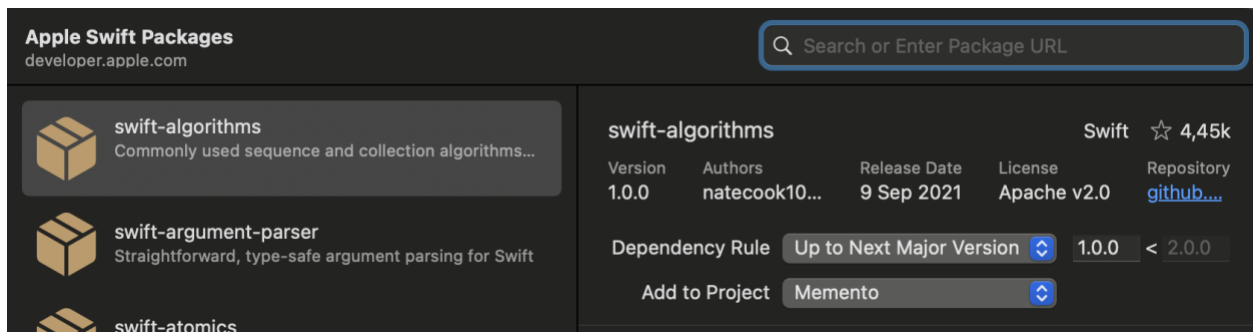
Set up Projects

When starting the project, make sure the packages have been installed successfully. If not, please follow the below steps:
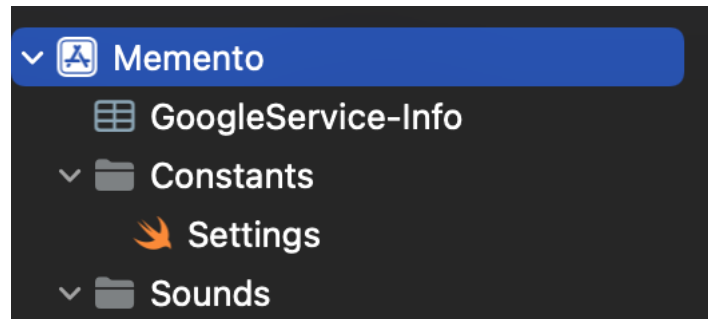
Step 1. Locate to Memento xcodeprj file
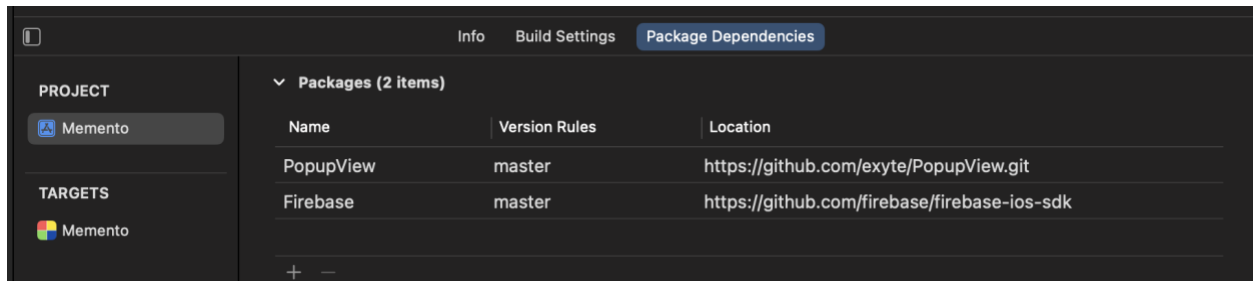
Step 2. Delete these packages using the – button

Step 3. Add new packages using the + button and this window will show

Packages URL used in this project are:
- https://github.com/exyte/PopupView.git
- https://github.com/firebase/firebase-ios-sdk.git

In Firebase packages, when all the download has finished, please choose the "Firestore Firebase" checkbox.

Main features
The game application consists of four views:
- Menu View: In this view, it is best to describe the program flow using the diagram
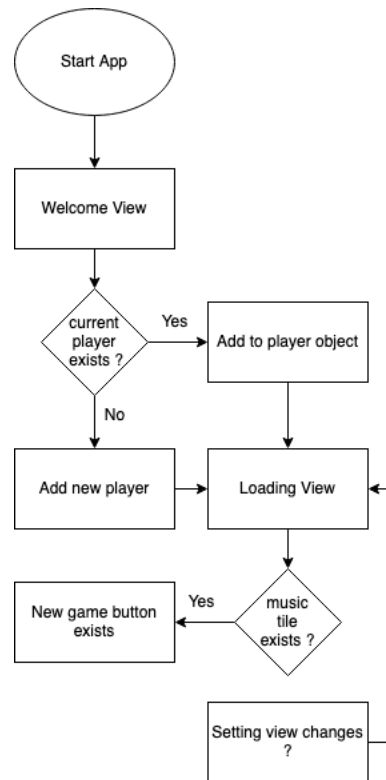
Menu view flow

- Leaderboard View: In this view, all the past players' scores are fetched from the Firestore database and sorted by their highest score based on each level of the game
- Game View: In this view, 4 tiles of different colors are set, and players can play by trying to repeat the tiles. Moreover, players can have the option to pause the game, resume or retry and can go back to the menu view. The game mechanism can be best illustrated through the diagram below:
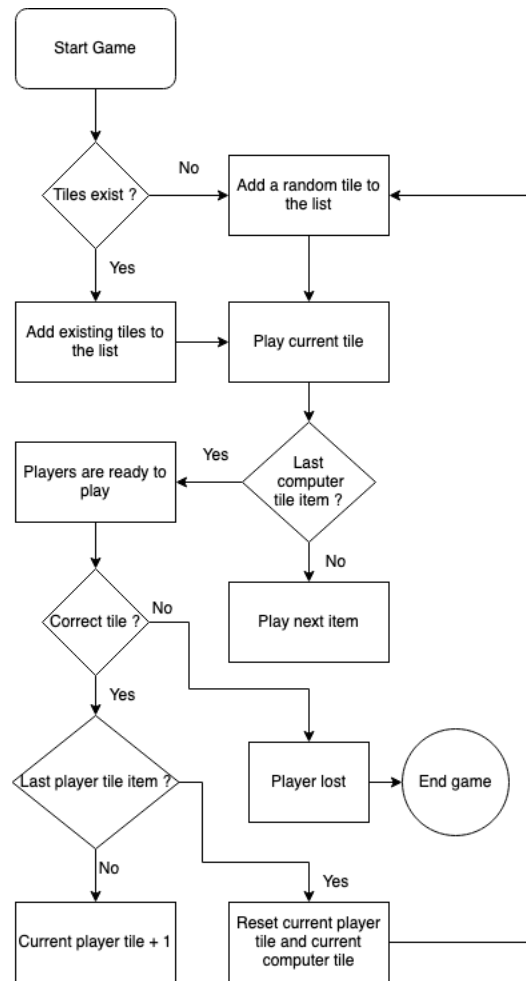
Game flow

- How to play view: In this view, a pop-up view will be presented with the rule and there would be a button to dismiss.

Background music is also added to most of the view, except for the game view since this is the sound memory game.

The effect sounds when playing a game are also added when players:

- Start new game
- Pressed on a music tile
- Hit correct repeating the music tiles
- Hit the wrong music tile
- Lost the game or achieve a high score

The game UI design is tested with all iPhone screen devices >=11.

Extra features

The extra features that are implemented are:

- By setting up Firestore to store computers' moves, players can exit their devices out of memory mode and can continue when they revisit the app.
- Players can register for different names

- Leaderboard shows ranked players with a list of players and show different batches when they are 1st, 2nd, or 3rd place in each level
- Players can adjust the level settings and turn on/off background music
- Application only works on iPads
- Players can switch to light or dark mode and the background music, or the settings can also be different.

Screenshots/Video

Based on the application requirements, it is better to record the video than a GIF. Links to the video can be found here:

https://drive.google.com/drive/folders/12KkUNaBdItR9Ym4QDllGCBU6NaRhq7ln?usp=sharing

Github Link for screenshot view observation: https://github.com/phu0n9/Memento