COMP228 Assignment 1 w/c 24th October 2022

Developing a Mobile App based on the Wheel of Fortune game.

Your Task
You will design and develop an application written in Swift 5 (or later) for iPhone 14. The App will play a simple version of the game Wheel of Fortune (see https://en.wikipedia.org/wiki/Wheel_of_Fortune_(American_game_show) for details of that game).

Gameplay:
1. At the start of a game, the computer selects a secret word or phrase from a built-in collection of them and presents it to the user with each character in the word replaced by a symbol (e.g. a blank square). A no-match counter is initialised to 0. The player's score is set to 0, Play commences.
2. At the start of a round, the player is assigned a reward value, for each letter correctly guessed during this round (the possible rewards are 1, 2, 5, 10 and 20 points). This is displayed to the player (this takes the place of the "wheel" bit of the wheel of fortune game)
3. The player then attempts to guess a letter which they hope will match one or more of the hidden letters in the secret phrase.
4. If the player's choice of letter matches one or more of those hidden, they receive a reward for each new match, which is then added to their total score for this game (i.e. if they guess the letter "E" and there are four hidden in the secret phrase, they receive 4 x the current reward value in points to add to their game total).
5. If the player's choice does not match a hidden letter, then the no-match counter is incremented.
6. If the player has made ten no-matches, then the game ends. If they have made less than ten, then play continues from step 2 (above) with the next round.
7. At the end of the game, the player's overall score is displayed and then stored in a high-score table (which should use a persistent storage mechanism so that it can be maintained across many uses of the app).

The App should:
1. Allow the user to play the game against the App which selects the secret phrase. **(worth 20%)**
2. Load sets of phrases from JSON files, included as part of the App bundle (i.e. phrases must not be hard-coded into the Swift source of the app). **(worth 10%)**
3. Provide an interface that allows the player to enter their choice of letter. **(worth 5%)**
4. Provide appropriate feedback on the user's choice. **(worth 10%)**
5. Use a persistent storage mechanism to save the scores of the player, so that, e.g. on starting the app, a high-score table can be viewed. **(worth 10%)**

6. Playability and Aesthetics: The app must feel and play like a good mobile app should. e.g. it must not have any awkward or unnecessary alerts, transitions, popups etc., and Labels and controls must be positioned correctly. **(worth 15%)**

The app should work in portrait and landscape orientation on an iPhone 14, maintaining a sensible UI in both **(worth 10%)**

Please ensure that your code is appropriately commented and meaningful variable and constant names are used. **(worth 10%)**

Your code should be clear and not overly repetitive (i.e. use functions and loops to avoid writing the same code multiple times). **(worth 10%)**

So that the assessor can check your game logic, please print the App's selected secret phrase to the console (i.e. use a Swift print( ) statement). This is probably best implemented in the section of code where the phrase is selected.

Important - Please note:
Do not use any 3rd-party frameworks in your App (e.g. Alamofire). Use Apple standard frameworks ONLY (i.e. only frameworks provided with Xcode). Use of third-party frameworks will involve a **penalty of 25%.**

Your App must be created using UIKit and Storyboard. Use of SwiftUI will involve a **penalty of 25%**

What to Submit
Your completed project should be zipped up and submitted via the online submission system (sam.csc.liv.ac.uk). (Right click the icon for the folder containing the project file and folder and choose "Compress")
Also submit a short informal document (1-2 sides of A4 at most) documenting how to use your app, and indicating any notable features.

Deadline for submission: Monday November 14th 2022 at 12:00

Reminder: This is the first of two assignments, each of which is worth 15% of the total mark for COMP228. Your portfolio of lab work will be worth another 10%.

Notes:
A number of sets of words / phrases is available to download from the Assignment One module of the COMP228 canvas page to add to your project.

A set of images of the standard letters of the alphabet is also available (can be used if you decide your solution uses images rather than text).

You may use any appropriate 3rd party images/video/sound-effects, to enhance the game.