



CS 458: Game Application Development
Unity Lab Assignment 2 (Phase 2)

The Flappy Bird (Level 2)



1. Goal

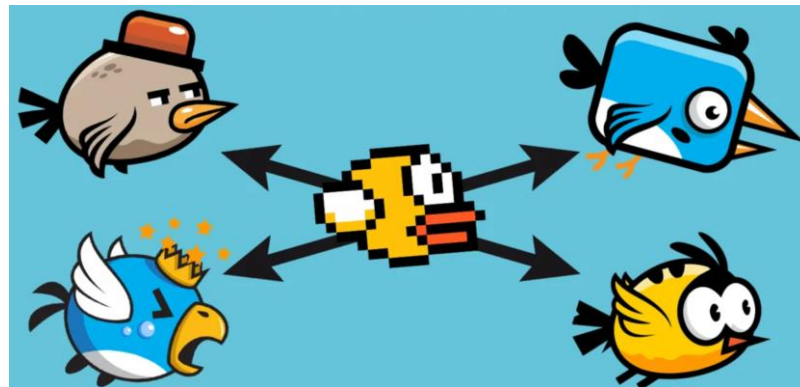
The goal of this assignment is to improve your game development skills using the Unity platform. In this assignment, you will apply some game designing rules that were covered during the lectures in Chapter 1 (e.g., Aesthetics, game rewards, etc).

You will continue developing the game you have worked on in assignment 1 “[The Flappy Bird](#)”. Specifically, you are asked to improve your developed flappy bird game by adding some interesting features which make the game more challenging and enjoyable for the players.

2. Requirements

You are encouraged to add a variety of features to enhance gameplay and make the flappy bird game more engaging. Particularly, do the followings:

- **Add Shop System:** Add shop system that allows the players to select a character among a list of possible characters. You should add a shop button to the start menu so the player can select the character before playing. Below is an example of different possible characters for the flappy bird game. (3 points)



- **Add Collectible Coins:** Add coins that the player can collect for extra points. Place the coins in varying positions to encourage skilful navigation. Distribute the coins between pipes in random way. (2 points)



- **Add Score System:** Implement a scoring system that tracks both the number of successful passed pipes and the number of collected coins. Display the scores prominently at the top of the screen during the game as shown below in Figure 1. When the game finishes display the final scores “the number of collected coins and passed

pipes” as shown below in Figure 2. For this level of game make a termination condition such that the game finishes after a certain time “For the evaluation set the time to 1 minute or less”. (2 points)



Figure 1



Figure 2

- **Add Reward System:** Introduce a reward mechanism for achieving certain milestones, such as passing a specific number of pipes or collecting a certain number of coins. The rewards should be a Cup and Shield. So, two different rewards should be included in the game as follows: (3 points)
 - **Cup:** Players will win a cup when they successfully pass a certain number of pipes. The game should offer two kinds of cups: Silver and Gold cups. You can set the required number of pipes for each cup to any number you prefer but state that in the documentation later. For the evaluation, set the number of pipes required to win the silver cup to 10 pipes and for the gold cup set it to 20 pipes. If the player successfully passes 10 pipes a silver cup should appear at the top of the screen (right or left corner) and when the player passes 20 pipes automatically the cup colour should be switched to gold colour.
 - **Shield:** Allow the player to survive crashes for a limited time. When the player collects a certain number of coins, the bird will survive for a specific time (The bird will not die even though it crashes with the pipes, but this will be only for a specific time). Set the number of coins for surviving to any number you want. “For the evaluation, set it to a small number such as 10 coins”.

These features can make the game more dynamic and engaging, offering players a richer experience.

3. Grading and Submission

- This Assignment should be solved individually.
- The Assignment is out of **10 marks**. “Marks distribution is shown above”
- The game should be completed at the end of November (each section during their lab hour)
- You will present a **demo** of your game to your teacher during the lab session.

Good Luck ...
Happy Gaming ...