



BSc in Software Development – Year 3  
Mobile Applications Development 2 Project  
Part 2 – Implementation – 55% of Module Mark

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## Game Overview

Flying goose is a classic horizontal-style game in which the player controls the Goose to pickup some of the rewards in game that will feed the Goose. The main task of this game is to complete the 5 levels and feed the Goose which has some challenges to perform. The ingame enemies are obstacles that are appearing on screen which initially kill the player.

## Features

The features listed in the Design Document we're not achieved but new features have been added to make the game interesting and fun to play. The aspect of flying through the obstacle has been kept and implemented that the obstacle change in size to make the game harder. Obstacles are randomly spawned off screen which are then appearing on screen. The obstacles are no longer changing colour when entering different levels but instead a new aspect to the game has been implemented which show which level your currently in.

There are 5 in game levels which have different rewards spawning that have to be collected in order to get a score and also each level has different background. The main idea was to get score when the player flies through the obstacles without touching them but new idea has been now adapted. Instead of getting a score when player passed the obstacle, now the player has to collect some of the rewards that are appearing on screen.

### Level 1

In this level the player has to collect 10 breads to get into next level. 1 bread = 1 score.

### Level 2

In this level the player has to collect 20 cupcakes to get into next level, if the player dies he will be then taken back to level 1 and his score will be reset. 1 cupcake = 2 score

### Level 3

In this level the player has to collect 30 cookies to get into next level, if the player hits the obstacle or the ground he will die and he will be then taken back to level 1. 1 cookie = 3 score.

### Level 4

In this level the player has to collect 40 on coming pancakes which appear off screen. If the player dies then he will be taken back to level 1 and his score will be back to 0. 1 pancake = 4 score.

## Level 5 – Final Level

This is the final level of this game in which the player has to collect 50 cakes in order to feed the goose. If the player dies then he fails to feed the goose and will be taken back to level 1 and his score will be back to 0. 1 cake = 5 score.

The main idea was to have high score and challenge the player to score more, but the aspect has now been changed to winning the game when completing all levels. The game can then be restarted and played all over again.

The reward system that was initially an feature is no longer an aspect of the game. The player now score to unlock new level and feed the goose and keep her alive.

## Control Mechanism

The controls are remaining the same , the player can use the “space bar” to fly and also use the “left” and “right” arrow to control the player.

## In-Game Menus

There are number of in-game menus such as:

Intro Menu, Start Menu, Pause Menu, Game Over Menu and Victory Menu.

The Intro Menu has some important information about the game before starting it. All of the menus and buttons have been created by me using [Paint.net](https://www.paint.net/). This menu wasn't planned in the design document but with the new idea of “Introduction Level” it has now been fully implemented to the game. The button “Begin” will take the user to the “Introduction Level” which can also be called “Tutorial Level” in which the player has only to pick up 1 pickup (bread).



## Start Menu



The start menu is just a simple menu where the user can start the game

#### Pause Menu



Pause Menu which allows the user to pause the game and either go back to the game or restart the game.

#### Game over Menu



The game over menu is the menu that appears when the user dies.

### Victory Menu



Victory menu is the menu that appears when the player completes level 5. In this menu the player can go back to the main menu.

## Sprites

All of the sprites including the main player have been taken from google and then transformed into .png using [Paint.net](https://www.paint.net/). None of the sprites were taken from assets.

## Problems

During the development I ran into many problems that caused a lot of errors. The main problem was with receiving score without picking up the rewards (pickups). There was no error but the score kept getting added without the player collecting the pickups. The problem was in one of the scripts file, there was a method created for adding score which wasn't suppose to be there. Luckily the problem has been sorted and the scoring system works fine.

Another problem was with the obstacles and pickups spawning. The obstacles and pickups were spawning with only one sprite. This held me off for a long time as the spawning system wasn't complete. The problem is now sorted and the obstacles and pickups are now randomly chosen from number of different sprites which get then spawned on screen.

There was another problem that I had with the obstacles for the scoring system. Initially the idea for scoring system was to get a score when player passes an obstacle. There was an

error with the collider that was set in between the gaps of the obstacle. The idea of scoring system is now changed to collecting rewards in-game which made the game more interesting and fun to play. This problem allowed me to implement new idea for the scoring system that works really well.

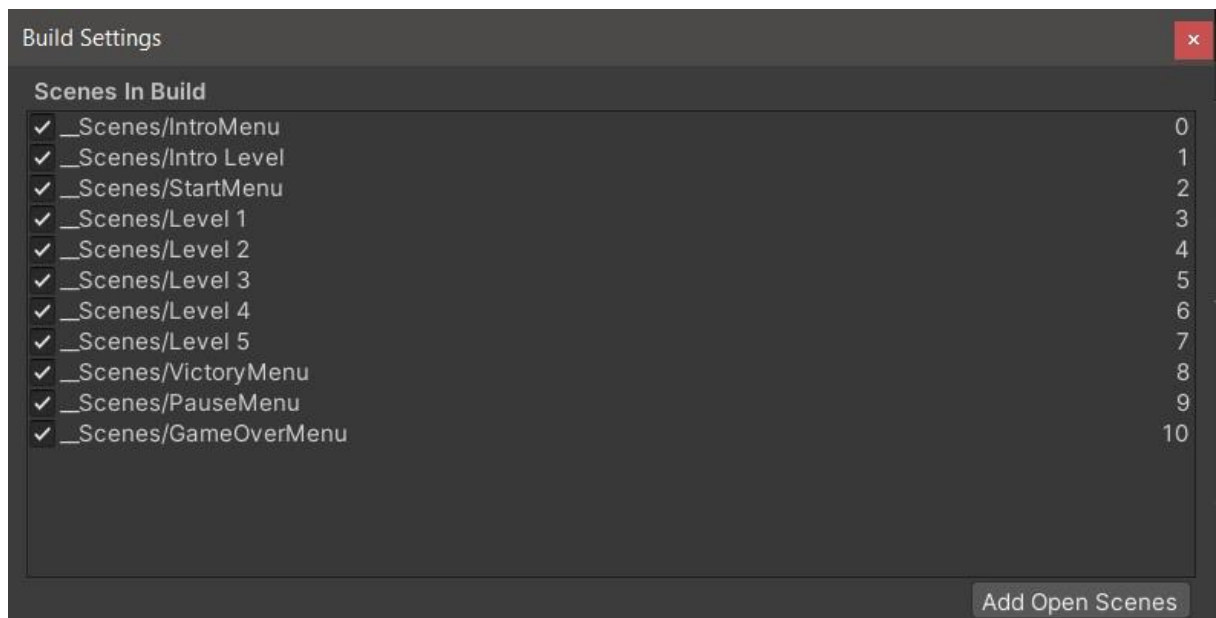
## Learning

I have learned a lot when developing my first proper game in Unity. I have only made a small 3D game before in Graphics Programming but was nothing compared to what I have now developed. The game is not amazing but I think It has many great features to make it fun to play. Unity is amazing for developing games and I really enjoyed developing this game. I have learned most of the options that are available on Unity. In general I feel like I have learned a lot during this development.

## Conclusion

I feel like I have improved my coding skills when developing this game. There are number of features that I wanted to implement but unfortunately I wasn't able to develop them on time. I feel like if I had more time I would develop better game with much more features and functionality. If I could go back in time and do different game I would have chosen a different game. Although I am really happy with my game and the features that I was able to implement.

## Build Settings



## References

- I have used "Prototype" font from which is used for the score and score count.

<https://www.1001freefonts.com/search.php?q=prototype&search.x=0&search.y=0>

- I also used some Sound Effects from mixkit website for the player jump <https://mixkit.co/free-sound-effects/game/>

- Pickups sprites were taken from Pinterest

<https://www.pinterest.ie/pin/451134087681840435/>

- The Player image <http://pixelartmaker.com/art/9f2efab846a3cec>