**Developer Diary**

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# Introduction

This Developer Diary is a requirement for a 4th Year software development module, Mobile Applications Development 3. Within this diary I will keep account of the thought process and weekly development of the game.

# Entry 1. 28/09/18

By reading the design document that was provided by the customer I could see that he was looking for me to develop a platformer game. His main concept idea is you move an avatar through an ever changing world and along the way you will have to jump over obstacles, defeat enemies and collect bonuses. The overall aim is to collect as many of these bonuses along the way to the finish line.

Key points about the game:

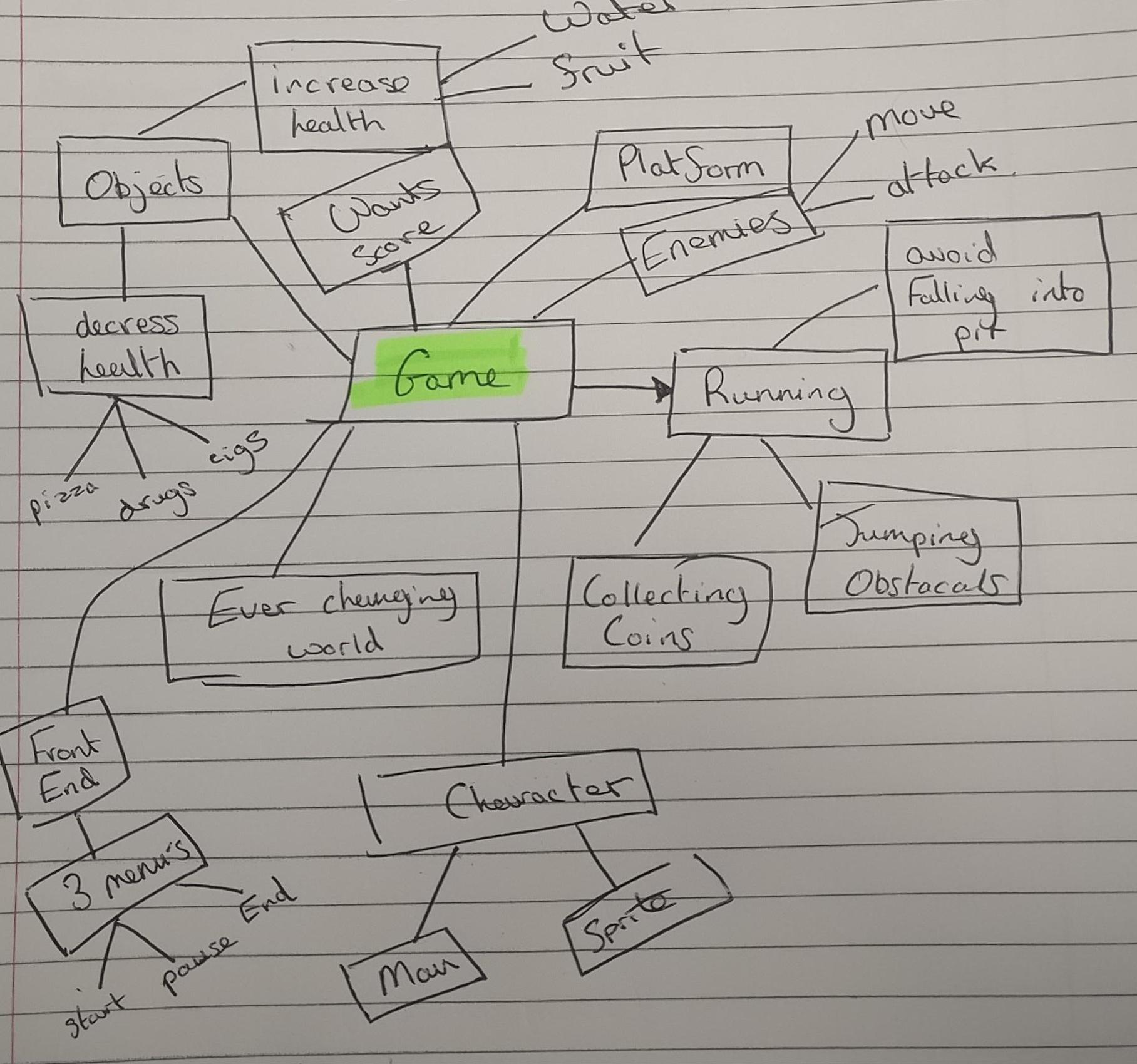
1. Platformer
   * Marathon
   * Ever-changing world
2. Objects
   * Coins
   * Positive Objects
   * Negative Objects
3. Character
   * Has health
4. Front End
   * Start menu
   * Pause menu
   * End Menu

Issues to flag with customer

* Controllers
* Layout
* Enemies?
* Scoring
* Social media

# Entry 2. 01/10/18

Here I have included a mind map that I created to try and understand the game which I am developing



# Entry 3. 07/10/18

Completed another day of research into how the game was going to be developed. I searched the Asset store for potential sprites and tiles that could be used within the game. At the moment I am not sure what we can and can’t use from the asset store. This will need to be cleared up with the lecturer.

To get things rolling I created a new project within Unity and linked that project my GitHub

# Entry 4. 09/10/18

I started development by creating a character within Unity. I felt it was the best approach to create a character. Get him to move and then work onto the rest of the game like platforms etc. As I am new to Unity I looked for online tutorials on how to help create a 2D Unity game. Unity itself provides great documentation which I used help get my character moving. When using Unity, there is two main ways that you can develop a game. One is by primarily using the unity engine to create all the core mechanics. The second way is by using both Unity and C#. Due to being in a Software Development course I felt it would not be beneficial to just use Unity as it is mostly drag and drop. By using both Unity and C# I will learn more about the core mechanics. At the moment I am just focusing on getting the game working with the pc keyboard. I will change that to touch screen inputs at a later point.

# Entry 5. 11/10/18

Now that the character is moving I wanted to get the character running on a platform. During labs we were shown 2D colliders. All I needed to do was add a 2D collider to one of the tile objects, change the characters physics and the character was then able to walk back and forth on the platform. This was done as more of a test. Tile development will come at a later stage.

# Entry 6. 12/10/18

Before I started creating the first level I felt it was important to make my character jump. By pressing the spacebar the character was able to jump. The character doesn’t have jumping animations but that can be added at a later stage. By at least having the character jumping the game can be created and tested.

# Entry 7. 15/10/18

The customer wanted to have an ever changing world for his game so my initial thoughts are to create 2 or 3 levels. One level the character could be running his marathon in the countryside, the second level in a city and the third a beach. At the end of each level the character would see a small bit of the next level before that level would end. This is to try a show the ever changing world. The example below explains my thought process.

A picture containing building

Description automatically generated

To start development on creating the levels I found tile assets on a website that was providing training. I am still unsure whether we are aloud use 3rd party sprites and tiles. I plan to ask my lecture next time I see him. For the time being I continued to use 3rd party assets to create the first level.

# Entry 8. 16/10/18

After creating the first level I wanted to take focus away from to game for a while so I developed the main menu using the resources provided through Unity.

The menu has five buttons

* New Game (Start a new game)
* Load Game (Load an existing game)
* Settings (View and change game settings)
* Score (Show user scores)
* Exit (Exit the game)

I have all five of the buttons above working when clicked. When Load Game, Settings or Score are clicked a sub-menu is opening which allows the user to complete their required task.

# Entry 9. 18/10/18

I enquired about the use of sprites and have learning that only 10% of your sprites used within this game are aloud to come from the asset store. This will mean that I will need to create the sprites myself. I have decided to use GIMP to create the sprites. I will keep the designs basic which I feel will add to the games experience.

# Entry 10. 22/10/18

I creating all the new tiles for the first level. I just need to replace the existing tiles with the new tiles within the game. This process should not take to long to complete as I am now familiar with the process. I am hoping to get this done within the next day or so. A meeting has been set up with the customer to show progress and get any feedback of change that are needed with the game.

# Entry 11. 24/10/18

Today I had a meeting with my customer. I demonstrated the progress that was made and discussed different ways in which we could improve on what was outlined on the design document. Below are the points the customer agreed to change.

* Instead of the controls being up arrow to jump it is now going to be space bar to jump.
* In relation to the collectables the customer agreed that it would be better to just have healthy and un-healthy food and not have coins as the game layout would become to cluttered.
* As the game is intended to be a person running a marathon I felt having an enemy was getting away from the whole point of the game and plus as the platforms will be small the enemy would not have a lot of space .

# Entry 12. 26/10/18

All the sprites for level one have now been created and added to the scene. Also added collectables which that character can now collect. A health bar needs to be added so that when the character walks into a bad item the players health will be reduced or it the character walks into a good item there health should in increased.

# Entry 13. 10/11/18

Health bar is now working as specified above. For every good item which is collected the player gets 100 points added to there score. For every bad item collected the player gets 100 deducted from there score. This score is stored on file so the player can view the score through the main menu and attempt to try beat the score at a later stage.

Checkpoints have been added to the game. When the player walks through a checkpoint, the checkpoint changes colour to indicate that it has been activated. If the player dies after this point they will be respawned to the checkpoint location.

The game now also detects when the player falls into water. When this is detected the player now respawns either back to the start of the level or to an activated checkpoint.

# Entry 14. 22/11/18

Today I focused on getting all the UI functionality working. I tidied up the main menu adding a theme colour and background. Both the colour and background was shown to the customer for approval. The idea behind the colouring is to try and make everything stand out. The character is on a journey to try and be healthy. I am trying to portray this by making the colours stand out. The New Game, Load Game and Exit functionality is working.

The pause menu was added to the game. When the character selects the pause button while playing the game, game time stops and a menu is shown. The menu lets the player resume the game, save the game or exit the game to the main menu.

Other pop-up menus have also been added to the game. If the player completes a level a menu pops up congratulating the player, shows there score and ask the user whether they wish to restart, go to the next level or exit to the main menu. If the player dies and has no health remaining then a pop-up menu is shown telling the user that the game is over and ask them whether they wish to restart the level or exit to the main menu. Finally if the user finishes the final level then a message is shown telling them this while showing there score. The user is asked whether they wish to start the game again or exit to the main menu.

The second level layout has been set out but is not yet complete.

# Entry 15. 29/11/18

Firstly in relation to including social into the application, this is no longer need as stated by our lecture.

The game is nearly complete. Today the second level was complete. All the functionality from level one was brought into level two. This made creating the second level very quick.

Audio was added. I felt with the audio that it needed to be simple so that it does not take away from the playing of the game but still needed to work with the style of game. I managed to get a free audio package through the Unity Asset store. I checked with the customer to make sure that he was happy with the audio and once I got his approval I added the audio. There is 3 different audio tracks. One for the main menu, One for Level One and one for Level two. I also added an audio snippet for when the character eats an item of food.

For new comers to the game there needed to be a introduction pop-up. I added an introduction that pops up when the game starts up for the first time. After this first time play It does not open but can be accessed through the settings menu. This introduction explains the aim of the game and the controls for moving the character.

# Entry 16. 03/12/18

The game is now complete. Today I fixed a few bugs that were within the game. One bug was that affecting the gameplay was that when the character jumped onto a moving platform, he would slide off. This bug has not been fixed. This was the biggest bug that needed fixing.

I also tidied up sections of the code and made sure that it was commented.

The next step is to test the game. The testing process can be see below.

# References

inScope Studios Platformer Tutorials: <https://www.youtube.com/playlist?list=PLX-uZVK_0K_6VXcSajfFbXDXndb6AdBLO>

Respawning - <https://www.youtube.com/watch?v=udUNv5aEXIU&t=0s&list=PLad18qy5_-O5wiFDIyaHeQLYvi4oGKDCn&index=3>

Unity Main Menu - <https://unity3d.com/learn/tutorials/topics/user-interface-ui/creating-main-menu>

Pause Menu - https://www.youtube.com/watch?v=JivuXdrIHK0

Game Testing

# Testing Requirements

**1.0:** User must be able to start up game**.**

**1.1:** On start-up of the game asplash screen must be shown displaying the game and Unity logo.

**2.0:** On playing the game for the first time an Instructions guide should appear after the splash screen.

**2.1:** On playing the game for the second time the Instructions guide should not appear.

**3.0:** The user must to be able to access a new game by selecting the “New Game” button.

**3.1:** The user must be able to load a previously saved game by pressing the “Load” button.

**3.2.0:** The user must be able to access the Setting by pressing the “Setting” button.

**3.2.1:** While within the Settings menu the user must be able to turn audio off by selecting the toggle button.

**3.2.2:** While within the Settings menu and with the music already off, the user should be able to switch the music back on by selecting the toggle button.

**3.2.3:** While within the Settings menu, if back is selected, the user must be returned to the main menu.

**3.3.0:** While within the main menu after starting the game for the first time, if the user selects the “score” button, High scores for Level 1 and Level 2 should be both 0.

**3.3.1:** While within the main menu after completing Level 1, if the user selects the “score” button, High scores for Level 1 should contain a number and Level 2 should be 0

**3.3.2:** While within the main menu after completing Level 1 and Level 2, if the user selects the “score” button, High scores for Level 1 and Level 2 should contain a figure above 0.

**3.3.3:** While within the score menu if the user selects “Back” button the user should be brought back to the main menu.

**3.4:** While within the main menu, if the user selects the “Exit” button the game should stop running

**4.0:** Within a level, if the user selects the “III” button a menu should appear and the game should pause.

**4.1:** Within a level, if the user selects the “Pause” button and then selects “Resume Game” from the pause menu, the game should then resume.

**4.2:** Within a level, if the user selects the “Pause” button and then selects “Save” from the pause menu, the game should save.

**4.3:** Within a level, if the user selects the “Pause” button and then selects “Exit” from the pause menu, the user should be directed back to the main menu.

**5.0:** While within a level, if the user presses Left keyboard arrow button the player should start moving to the left of the screen.

**5.1:** While within a level, if the user presses Right keyboard arrow button the player should start moving to the right of the screen.

**5.2:** While within a level, if the user presses spacebar button the player should jump into the air.

**5.3:** While within a level, if the user presses the right keyboard arrow button and then presses the spacebar the player should jump while moving to the right.

**6.0:** The player should be able to walk through a platform.

**6.1:** The player should be able to jump onto a platform.

**6.2:** The player should be able to jump on a moving platform.

**7.0:** The player should be able to collect one of the food items by moving into it.

**7.1:** If the player collects a good food item the score at the top should increment by 100 and if the players health is low the health should increase.

**7.2:** If the player collects a bad food item the score at the top should decrement by 100 and the players life should decrease.

**8.0:** If the player falls into water the player should be respawned to the start of the level. One life should then be removed.

**8.1:** If the player falls into water and has only one life, a dialog box should appear informing the user that the game is over.

**8.2:** If the user collects to many of the bad foods the player will die and be respawned to the start of the game.

**9.0:** If the user walks into a checkpoint the checkpoint should change colour.

**9.1:** If the user walks into a checkpoint and then falls into the water the player should then be respawned to the checkpoint.

**10.0:** If the user completes level 1, a dialog box should appear informing the user.

**10.1:** If the user completes level 2, a dialog box should appear informing the user that the game is over.

# Test Plan

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Description automatically generatedA screenshot of a computer

Description automatically generatedA screenshot of a social media post

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