# Component 3 (Project)

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## Analysis

## Project Identification

### Summary of my project

The project that I intend to complete is an infinite running game. Games like these can be played by a single player at a time. The player navigates through the game using the space key to jump navigating along the infinitely scrolling level manoeuvring themselves around a constantly changing environment. A high-score is calculated by the distance that the player completed plus the number of rewards that the player collects. This high score can then be compared with others scores to enable competition between players. The game-play gets progressively harder with a higher speeds and potentially harder level design.

I aim to make this game accessible, allowing anybody to play regardless of age, ability, and income, etc.



### Characters

The game includes a single playing character. This character is controlled by the player. To play the game this character is moved through the levels. If the player comes into contact with the walls or any other dangerous game object the score is reset and the game begins from scratch.

### Sounds

I want the game to have an arcade like feel. Therefore I will implement simple sounds to create this impression. I will have a theme tune that plays continuously, speeding up as the game gets faster, this will increase the adrenaline response of the player.

### Sprites

Much like my inspiration I aim to use pixel art for my sprites. This will add to the arcade feel of the game. Although the monochrome aspect of the original game is visually interesting I believe that sprites with a wide range of vibrant colours will be more entertaining for younger audiences.

## Computational Methods

The game is suitable for a digital solution as it has principles / physics that can be easily enforced by simple algorithms. A non-computational version of my project would lack immersion as in game objects would not be able to be individually controlled. Due to the fundamental lack of refreshing controllable graphics in non-computational situations it is imperative that my program uses a computer.

Another benefit of creating this game computationally is the potential for networked gameplay. In a future version of this game networked gameplay would allow players to play the game socially, creating an element of competition.

### Thinking Abstractly

In order to simplify the gameplay and the production of the project many unnecessary aspects of reality are discarded. The main example of this is the 2D nature of the game, although in reality the world is seen in 3D a 3D game would overcomplicate the design / ease of gameplay. Another example of abstraction in my design process is the blocky graphics used, the need to make the game photo-realistic is diminished allowing me to focus on creating an engaging playing experience.

### Thinking Ahead

My games gameplay will be controlled using the space bar (To Jump) / arrow keys (^:To jump).

In order to navigate through the menu screens / settings and to pause the game a mouse cursor will be used.

In the eventuality that I port my game onto mobile platforms tapping will allow the player to jump.

### Thinking Procedurally

I will make use of object oriented programming in order to maximise efficiency of my program. All moving objects will share a class with more specific sub classes being employed for each specific character.

I will also break my program down into subroutines. This will help to increase the efficiency of the program by decreasing the amount of reused code.

### Thinking Logically

For collision detection the program will continuously check to ensure that the character hasn't collided with the platforms. When the player collides with a in game object a decision should be made on what the necessary response is.

### Thinking Concurrently

The program will use event driven programming meaning that when the user triggers an event code will be executed. This is a form of parallel processing.

## Stakeholders

The target audience for my game are young people that play computer games casually. I want my game to be accessible to everybody regardless of age, computer literacy, and ability. As the game uses simple assets I expect the game to appeal especially to younger audiences but to also be visually interesting for older players, I have chosen an array of people from all walks of life to provide feedback on my project throughout the design process.

I will use a range of named and unnamed stakeholders in order to collate a wide-range of opinions on how best to implement the features of my game. My named stakeholders include: Iustin Tamasanu (A Computer Science Student that enjoys playing computer games casually), Esme (A palliative paediatric physiotherapist), and Dora Turner (A young occasional computer gamer that enjoys simple games). I will collect regular feedback from these named stakeholders while sending out opinion polls to collect data from a wider range of my target audience.

## Research

In order to develop my ideas more thoroughly I will look into four similar games made by other developers. This will help me decide what features I want to include in this game and how best to implement them.

### Moto X3M (from [www.coolmathgames.com](http://www.coolmathgames.com))

This fast paced online 2d driving game provides an immersive experience with its bold graphics and clever controls. The user uses the arrow keys to control the motorbikes speed and tilt in order to navigate through the constantly changing terrain, this provides great control over the bike throughout the game. The game ends when the users body touches the course, this is animated through a fireball explosion, insinuating a crash.



The levels become more difficult as the game is played through, with more complex level design. This provides a good feeling of progression however most of the levels can be passed with little skill.

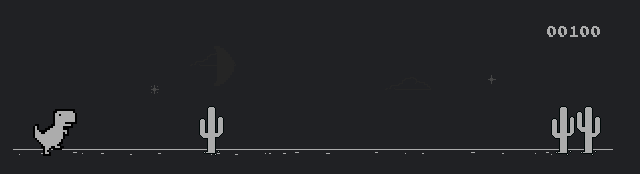
The aim of the game is to complete the levels as quickly as possible, a star based scoring system is used to quantify the speed of the level completion. Many players enjoy speed-running the game with a record completion time of 13 minutes and 11 seconds.

Time deductions are offered when players flip the bike (0.5 sec for 1 flip, 1 sec for 2 flips, ect). This provides an interesting high risk / high reward aspect to the game.

Although I enjoy playing this game, I am aiming to create a simpler game aesthetically. I want my game to be easily accessible to all regardless of ability and in order to achieve this my game should use simple controls as some audiences may find the multiple keyed controls hard to use.

### The Chrome Dino Game (Build into The Chromium Project)

The Chrome Dino game is a simple 2d game. The user navigates through a desert environment by jumping over cactus / other objects as the game speeds up / more objects to avoid are added.



#### Controls

For more experienced gamers the controls may seem limited, the space bar is the main control (Allowing the dinosaur to jump), however this is perfect for people with reduced coordination such as young children, elderly people, and people with coordination difficulties. I like the idea of implementing a similar control layout in order to maximise accessibility.

