

Glutton Run

Burning calories was never this fun!

Game Design Document

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1. Concept Design

1.1. Summary

Glutton Run (working title), as the name says is a sides-scrolling Runner game similar to “Canabalt”. Runner games stand in a good position in the current market. These games do not actually stand out on PC or other consoles, but are way more popular and mostly played on mobile phones and tablet devices. In Glutton Run, you play a plump, food loving character that is forced to reduce weight. The idea of the game is to spread awareness to the people about the false effects of obesity in an excitingly fun way. The game’s core is to run the maximum distance, justifying the runner title, while you are challenged with environmental obstacles as well as other power-downs. The power-downs include junk food like Burgers, Cakes, Fries and Sandwiches. On the contrary, you will also come across power-ups like Energy drinks and other calorie burners (good stuff). There is also a special ability you can use after you burn a certain amount of calories.

The goal of the game is to achieve maximum score by running the farthest distance and also burning the maximum calories without triggering the "Game Over" screen (losing). The game is over when you reach the calorie limit and suffer fatigue, or you went through too many obstacles which results in moving the character off-screen, fall into game ending obstacles such as manholes or if you get bitten by dogs and/or caught by the police. Your score is the total distance covered, in addition to the number of calories you burnt in the run which is subtracted by the number of calories you gained. Bonus score is awarded for manoeuvring through the game and avoiding special obstacles such as getting the police off of you.

1.2. Concept

The concept of the game is simple but challenging. Simple, because it is the same Runner concept and challenging because there are certain feature that make this game interesting, different and difficult. Your focus is not just committed to running the farthest distance, but also to how you react to the challenging environment. Also, there are a few achievements you can complete to gain score bonuses.

The game gets more challenging as you will be experiencing different and more difficult hurdles to get through as you advance and at the same time, the reward is also burgeoned. The comedy or humour generated through this game is what motivates the players to immerse into its atmosphere. To achieve the best score, you will have to do the following:

- Run the farthest distance.
- Avoid power-downs as much as possible.
- Don't miss the power-ups.
- Avoid environmental and non-environmental hazards.

1.3. Gameplay

You start off running in a city style environment (after being kicked out of the house by the character's girlfriend) and progress your way into 1 other landscape. The landscapes include: City and Rooftop.

Each landscape has different environmental hazards that you have to avoid by jumping above, sliding beneath or by performing some actions. Some of the hazards/obstacles are:

The City- Manholes, Cars, Dogs and Police.

The Rooftop- Antennae, Girders, Birds and gaps between buildings.

Apart from the environmental hazards, there are some power-downs which affect you negatively, meaning you have to avoid them. The Food power-downs make the character gain more calories and in turn make him plump and slow. There is a Fat Bar that shows how plump your character has become and warns you when you are too close to losing. Every different food item has a fixed amount of calories which are added to the Fat Bar on pickup and the speed of the character is determined by the Fat Bar.

On the contrary, you will come across some power-ups that give you a boost and help you balance the Fat Bar. Every different power-up (calorie burners) has a fixed amount of calories that they burn and is shown by a chunk subtracted from the Fat Bar.

Note: The Fat bar does not go below its minimum value or over its maximum, when the power-ups or power-downs are picked up respectively.

1.4. Genre and Platform

Genre: 3D Side-scrolling Platformer.

Platform: Android/iOS with touch support.

2. Game Overview

2.1. Story

Bob loves to play video games. He loves video games so much that he would sit and play all day sacrificing sleep and exercise without noticing the time. Bob also loves food as much as he loves games. So, his daily routine would majorly include eating food and playing video games... Almost nothing other than these two activities seem to grab his attention.

Sick and tired of his loathsome and gluttony avatar, Bob's girlfriend Eve decides to fix him up. So she kicks him out of the house, forces him to do some exercise and tells him that she would accept his hand only after he is active, fit and energetic.

2.2. Character

Bob is a man of age 22, weighs 250 pounds and is 5'8" tall. He likes to play video games all day and hence lacks physical fitness. He loves to eat food and so he grows obese day after day. He is lazy, a glutton. After being kicked out of the house by his girlfriend Eve who is sick and tired of his laziness, Bob sets off on a weight loss drive.

2.3. Environment

The game starts after Bob being kicked out of the house by Eve. You will be sprinting all the way in four different environments, which come at random. They are: The City, The Forest, The Rooftop and The Village. You run in each landscape for about 30 to 45 seconds. The environmental details of each landscape are explained below.

The City- The key things seen in the City are: Buildings, footpaths, pedestrians, crossings, cars, manholes and double storied buildings. You will be challenged by the pedestrians and cars in the City. You must avoid manholes or it is game over. You will also have to make a choice to either go above or below the double storied buildings depending on the level of danger.

The Rooftop- The key things seen on the Rooftops are: Antennae, boxes, birds and the gaps between the buildings. You will be challenged by the birds and antennae. You must avoid falling into the gaps between the buildings or it is game over.

3. Game Proposal

3.1. Target Market

Glutton Run is a 3D side-scrolling, platformer runner game. The game runs on mobile and other handheld devices.

Some examples of runner games in the current market include

Temple Run/Temple Run 2 – 3D platformer/endless runner/action

Subway Surfers – 3D platformer/runner

Minion Dash – 3D platformer/runner

The viability of these titles in the current market is extremely strong and widely played by people around the world. Runner based games are purely addictive and most fun when played on-the-go. The titles falling under this genre are basically focused to be produced for mobile and handheld devices, as their integrity, strength and core are flawed on other gaming consoles.

Glutton Run is aimed at players who play “Runner” games on mobile/handheld devices. The gameplay is suitable for all audiences, but is slightly inclined toward the male gender and targeted for ages 7-32.

Anyone who enjoys playing side-scroller, platformer or runner games will have a great time playing Glutton Run.

3.2. Top Performers

Temple Run by *Imangi Studios* is one of the many successful runner titles in the market. After its release in August 2011, it eventually became the number one free iOS app in the store, attracting a huge audience. Imangi Studios was launched in 2008 and generated revenue of \$40,000 a year later and the game generated over \$1 Million in sales^[1]. While its sequel, Temple Run 2 which was released on January 16th 2013 has a current estimated daily revenue of \$6,652 and is ranked #43 on top free apps^[2]. With over a 100 million app users over iOS and Android systems, the games boast their achieved success.

Subway Surfers, co-developed by Kiloo and SYBO games is another successful Endless runner title in the market. It was launched in May 2012^[3]. Subway Surfers has current estimated daily revenue of \$23,195 and is ranked #42 on Top Grossing Apps and #27 on the top free apps^[4]. The app was downloaded by over 250 Million users over the iOS and Android systems.

3.3. Feature Comparison

The most common selling feature in these popular titles is competition and social interactivity. The two titles also slightly vary in their gameplay, but some features are predictably the same. For example, both the games have a coin collection theme which enables the players to unlock different characters in the game or upgrade power-ups. There are various other aspects such as gameplay, mechanics, concept and theme of the games that they differ in, but the core of these games is almost the same.

3.3.1. Player Controls

In both of the titles discussed above, the player (character) is always running, and the player has control only over the actions the character can do, like Jump, Slide or Roll.

In Temple Run/Temple Run 2, the players are allowed to jump over obstacles by sliding their finger up on the screen or slide under some of them by sliding their finger down, and the character is allowed to move from left to right in its designated path by tilting the device either to the left or right. At the same time sliding the finger left or right on the screen allows the character to turn left or right respectively, avoiding falling off the designated path.

In Subway Surfers, the players are allowed to jump over obstacles by sliding their finger up on the screen or roll under some obstacles by sliding their finger down. However,

¹ John McDermott, "Husband-and-Wife Team Behind Temple Run," <http://www.inc.com/best-industries-2012/john-mcdermott/imangi-studios-runaway-success-in-mobile-gaming.html>.

² "Temple Run 2," <http://thinkgaming.com/app-sales-data/341/temple-run-2/>.

³ Wikipedia the free encyclopedia, "Subway Surfers," http://en.wikipedia.org/wiki/Subway_Surfers.

⁴ "Subway Surfers," <http://thinkgaming.com/app-sales-data/18/subway-surfers/>.

unlike Temple Run, the designated path for the character does not allow players tilt their screen for movement, but instead, the players slide their finger left or right to change their lane. There are no turns in the game but there are different obstacles in each lane that the player has to choose and maneuver through them.

3.3.2. Concept

The concept of both the games is similar but not the same. There are a few changes and slight variations in each of them that make their concepts not look alike, for example, Gameplay and player controls as discussed above.

In Temple Run/Temple Run 2, the character starts running from weird looking creatures that chase him after stealing an ancient artifact from a temple (Yes, Indiana Jones!). The concept of the game is that the player has to run the farthest distance from the creatures while collecting coins and power-ups and maneuvering through obstacles.

In Subway Surfers, the character starts running away from a security guard and his dog after being spot doing graffiti on the trains in a subway. The concept of the game is to run the farthest distance escaping from the guard and his dog while collecting coins and power-ups and maneuvering through obstacles.

The concepts of both the games sound the same, but the variance in their gameplay and challenge put forth the players make them differ. Temple Run is running in a single lane while in Subway Surfers, the player has to manage 3 different lanes. I personally believe the concept of Subway Surfers is much stronger and challenging than that of Temple Run's. Temple Run allows players to move in the designed path and there is less choice for players and more co-ordination that is involved, while Subway Surfer allows the character to choose from 3 lanes and at the same time, not compromising the challenge and co-ordination.

3.3.3. Mechanics

The games are constructed by certain rules that confine the players to perform limited actions. The mechanics are designed in such a way that their importance is directed to the theme and style of the game. Both the games successfully engage players in an immersive environment while putting forth different levels of challenge throughout.

For example, both the games provide different power-ups to players to suit their theme and the importance of the power-ups are designed to tackle the game's challenge and difficulty. Temple Run provides power-ups such as Coin Magnet, Invisibility, Power Run and Coin Boost. Subway Surfers provides power-ups such as Coin Magnet, Super Jump, Jetpack, Double Score and Hoverboard. The power-ups are designed to tackle the game's own challenge, but the primary use of power-ups is to give the players the possibility to expand the chances of achieving a highscore within the game.

Also, the movement restriction rules designed by the games differ in their style, but are directed to their theme. These rules are designed in such a way that the players feel they are a part of the game, and that the challenge they are presented with, blends with the rules.

3.4. Game Analysis

The inspiration behind making Glutton Run is to spread awareness about the false effects of laziness and its ultimate effect on the health. The game's core is generally Challenge, Strategy and Collection, but can branch out into many other cores depending on the players' play-style.

Glutton Run can be produced in the Unity 3D game engine. Technical data was gathered in order to strengthen the previous research and ultimately provide depth to the overall game analysis. There are very few hurdles to look over during the production of the game. Glutton Run, when compared to the other runner titles is definitely a challenge because of its complex content, but is not impossible.

3.4.1. Technical Analysis

Glutton Run is a 3D side-scrolling platformer. The player will have limited control over one character and will be challenged with the game's mechanics. The players have to maneuver the character through different obstacles and use the power-ups provided in the game wisely.

3.4.1.1. Player Controls and Mechanics

Players will start the game with a *fat* human character that is kicked out of his house by his girlfriend. They will be running across two different landscapes avoiding different obstacles.

Player Controls:

- Slide finger up – Jump
- Slide finger down – Slide/Roll
- Tap on screen – Character skills
- Double tap on screen (when prompted) – Special ability (Fart!)

As the player runs a certain distance, he/she will eventually burn calories and lose fat. The character will then be transformed into an *averagely built* character and if the player runs farther, he/she will be transformed yet again into a *lean* character.

Fat ----- Average Built ----- Lean

The challenge here is that the player must control the rate of calorie intake and ways to get rid of the extra calories to maintain the character at its average level in order to achieve maximum bonus score. Also, the movement speed of the character depends on its stage. For example, the fatter the character, the slower it moves, and vice-versa.

For example, let us assume a scale of 1-100, 1 being the leanest and 100 being the fattest. If the character's weight (fat) ranges from 1-40, then it is lean. If the weight ranges from 40-60, then it is averagely built and if the weight ranges from 60-100, the character is fat. There are pros and cons for all the three different stages of the character (see Character Mechanics).

3.4.1.2. Pickups

The pickups offered in the game are categorized into three branches, *power-ups*, *power-downs* and *special pickups*. The power-ups are the pickups that make the character move to the leaner stages and the power-downs make it move to the fatter stage. The special pickups provide momentary bonus to the character and have a specialized effects when used in different stages.

Power-ups: The power-ups in the game include-

- Energy drinks
- Fruits and Vegetables
- Healthy meat
- Other high protein foods

The power-ups make the character lean. Each power-up makes the character leaner at different rates and the rate at which they appear in game depends on their rate of making the character lean. For example, the energy drinks make the character lean, faster; hence they will be rare to find in the game.

Power-downs: The power-downs in the game include-

- Pizzas
- Burgers
- Cakes
- Other unhygienic foods

The power-downs make the character fat. Each power-down makes the character fatter at different rates and the rate at which they appear in game depends on their rate of making the character fat. For example, the Pizzas make the character fat, faster; hence they will be rare to find in the game.

Special pickups: Special pickups are basically powers that provide momentary advantage to the character. Their importance, use and rarity affect the character stages differently. The special pickups include-

The Bicycle- This power allows the player to travel at maximum speed and can smash through obstacles for a little time.

The Pogo Stick- This power allows the player to jump higher and pick up bonuses and reach higher zones.

The Detoxifier- This power instantly changes the character stage to the average built stage.

3.4.1.3. Character Mechanics and Abilities

The player is provided with different abilities available to use for the character. Each and every stage of the character has different set of abilities the player can use to overcome obstacles and at the same time there are also some negatives, which the character suffers from except for the average built stage. These stage switches are basically in control of the players and depends on their skills and reflexes on how they manage to make these switches.

There are pickups in the game which affect the stages of the character. The negative pickups or power-downs such as Burgers, Pizzas, Cakes and other fat building foods cause the character to become fatter, while the positive pickups or power-ups such as Energy drinks, Fruits/Vegetables, Healthy meat and other high protein foods cause the character to burn fat and become fit. Each character stage is explained briefly below.

Fat stage: The players start the game with the character in this stage. This stage also comes into effect when the player picks up a lot of power-downs and ultimately becomes fat. In this stage, the character cannot jump high because it is fat and cannot slide. Instead of sliding, the character can roll and smash through the slide-able obstacles.

In this stage, the Pogo Stick pickup is strengthened. According to physics, every action has an equal and opposite reaction. Since the character is fat, the force it applies on the pogo stick will be high, resulting the character to jump higher than it can in other stages. Also, in this stage the Bicycle pickup is weakened. Since the character weighs more in this stage, the bicycle cannot handle the weight and will collapse sooner than it will in other stages.

Lean stage: The lean stage comes into effect when the player picks up too many power-ups and ultimately becomes lean. In this stage, the character can jump higher, slide normally and also float for a little amount of time defying gravity. The character is highly vulnerable to obstacles in this stage and may lose the run if he collides with a single obstacle.

In this stage, the Bicycle pickup is strengthened. Since the character is lean, the bicycle moves faster and cover a longer distance (in the same time) than it covers in other stages. Also, in this stage the Pogo Stick pickup is weakened. Since the character is lean, the pogo stick requires a lot of force to jump high and the character eventually gets tired and the pogo stick collapses sooner than it does in other stages.

Average built stage: The average built stage stays in effect as long as the players control their calorie intake and outlet. In this stage, the score achieved by the players is doubled. The character, in addition to sliding under obstacles and jumping above obstacles normally, can also

perform different skills and tricks which when chained by the player can achieve them a great bonus score. Some skills include- Parkour, Wall jumps and some other environment based tricks.

In this stage, the bicycle and the pogo stick pickups allow the character to perform tricks as well along with the bonuses they provide. The score is multiplied and then added to the final score in the form of a bonus.

3.4.2. Camera

The camera is fixed in a 2D perspective and is always focused on the character. The character is always on the left side of the screen (unless it is going through special abilities). The camera always moves with the character in its position through the environment. The environment moves from right to left into the scene, so the players can clearly have a look over the obstacles, power-ups, power-downs and pickups and maneuver accordingly.

3.5. Major Development Tasks

There are a few major development tasks involved in producing Glutton Run to be a successful title. The game can be produced in a 6-8 months' timeframe provided people working in the areas mentioned below

- **Concept Artist:** 15-25 days with two concept artists to come up with the basic mock-ups that are required before the game can go into the production pipeline.
- **Character Modeler:** One to Two months with four character modelers after being handed over the concepts from the concept artists.
- **Level Designer:** Two to Three months with four level designers after being handed over the concepts from the concept artists.
- **Animators:** Four months with four animators. The animators will be in charge of all the animations involved in the game including character animation, level animation and NPC animations.
- **Gameplay Programmer:** Two to Four months with four programmers to create a working demo with the provided assets and proceed to the final version of the game.
- **UI Programmer:** Two months with two programmers to create GUIs and play test its interactivity levels with other subjects.
- **Producer:** A financial support for most of the tasks and charges that occur during the production of the game.

3.6. Estimated Resources and Cost

Software	Total Months	Cost per month	Total Cost
Autodesk Maya	6	\$195	\$1,170
Unity 3D	6	\$75	\$450
Adobe Creative Cloud	8	\$50	\$400
3D Studio Max	6	\$195	\$1,170
Total			\$3,190

3.7. Estimated Schedule and Cost

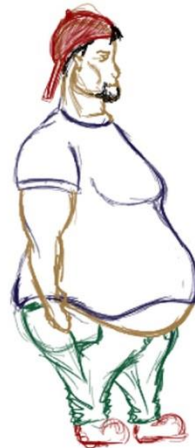
Title	Total Months	Cost Per Month	Total Cost
Concept Artist 1	1	\$3,500	\$3,500
Concept Artist 2	1	\$3,500	\$3,500
Character Modeler 1	2	\$3,500	\$7,000
Character Modeler 2	2	\$3,500	\$7,000
Character Modeler 3	2	\$3,500	\$7,000
Character Modeler 4	2	\$3,500	\$7,000
Level Designer 1	3	\$3,500	\$10,500
Level Designer 2	3	\$3,500	\$10,500
Level Designer 3	3	\$3,500	\$10,500
Level Designer 4	3	\$3,500	\$10,500
Animator 1	4	\$3,500	\$14,000
Animator 2	4	\$3,500	\$14,000
Animator 3	4	\$3,500	\$14,000
Animator 4	4	\$3,500	\$14,000
Gameplay Programmer 1	4	\$3,500	\$14,000
Gameplay Programmer 2	4	\$3,500	\$14,000
Gameplay Programmer 3	4	\$3,500	\$14,000
Gameplay Programmer 4	4	\$3,500	\$14,000
UI Programmer 1	2	\$3,500	\$7,000
UI Programmer 2	2	\$3,500	\$7,000
Producer	8	\$3,500	\$28,000
Total			\$231,000

3.8. Suggested Retail Price

The suggested retail price for the game can be around \$0.99. Basically the entire Runner based titles in the market cost around the same.

3.9. Concept Art

Following are some examples of the character mock-ups.



4. Game Setting and Important NPCs

4.1. Environment

Glutton Run is a mobile game that takes place in the busiest part of the city of San Francisco. The game starts after the character; Bob is kicked out of the house by Eve, his girlfriend. The players will be sprinting all the way in three different environments, which occur at random. They are: The City, The Rooftops and The Golden Gate Bridge. Players run in each landscape for about 30 to 45 seconds. The interactive elements and environmental details of each landscape are explained below.

4.1.1. Landscapes

The City- The city shows players, the tall buildings and the beautiful scenes in the city of San Francisco. The players run through crowded squares, shopping malls and important crossings in the city. They will also come across little groups of people on the roads.

The key interactive elements the players come across in the City are: barricades, dogs, footpaths, pedestrians, crossings, cars, manholes and double storied buildings. Players will be challenged by the pedestrians, barricades, crossings and cars in the City. Players must avoid falling into manholes, failing which, the game is over. Players will also have to make a choice to either go above or below the double storied buildings depending on the level of danger. The dog is another challenge to the players as it will be chasing them at random times in the city and they have to run away from it.

The Rooftops- The rooftops landscape is the same as the city, but the only difference is that the players will be running on top of the huge buildings and not on the roads. In this landscape, the players see beautifully clouded skies and birds flying across the screen.

The key interactive elements the players come across on the Rooftops are: antennae, boxes, birds and the gaps between the buildings. Players will be challenged by the birds, boxes and antennae. Players must avoid falling into the gaps between the buildings, failing which, the game is over.

The Golden Gate Bridge- The Golden Gate Bridge landscape shows a nice horizon where the water meets the sky in the background, speeding cars on the bridge in the middle-ground and the huge bars that support the bridge in the foreground.

The key interactive elements the players come across on the Golden Gate Bridge are: speeding cars. The Golden Gate Bridge is a bonus environmental landscape to make the people believe that the game is taking place in the city of San Francisco. In this bonus landscape, players only have to evade the speeding cars and collect score bonuses as much as they can. This landscape is rare and does not occur as often as the City or the Rooftops.

4.1.2. Seasons

Seasonal environment visuals can be added to the game to enhance player immersion. This can be done by patching the game with seasonal effects as the year goes by. Seasonal effects do not change the gameplay by any means. It is just eye-candy to the players to be a part of the game while they play.

4.2. Characters

There are three characters in the game as of now. One is the player character and the other two characters are non-playable. The different stages of the player character and the characteristics of all the characters are explained below.

4.2.1. Player Character (PC)

There is only one player character that is fixed for all the players who play Glutton Run. Players cannot change character but can purchase different apparel for the character from the in-game store. The character details are listed below.

Basic Information

Name: Bob McNally

Gender: Male

Age: 22

Date of Birth: 26th August 1991

Nationality: American

Appearance

Hair color: Deep Brown

Eye color: Brown

Height: 5'9"

Weight: 250 lbs.

Tattoos: A Dragon tattoo on the left shoulder.

Personality

Best Traits: Intelligent, helpful, honest, humorous, dependable, caring and well mannered

Worst Traits: Irresponsible, over-confident and lazy

Hobbies: Playing video games and the guitar

Other

~~Spouse~~/Girlfriend/~~Boyfriend~~: Evangeline Serra

Occupation: Student

Bob likes to play video games all day and hence lacks physical fitness. He loves to eat food and so he grows obese day after day. He is lazy, a glutton. After being kicked out of the house by his girlfriend Eve who is sick and tired of his laziness, Bob sets off on a weight loss drive.

4.2.1.1. Character stages and abilities

The player is provided with different abilities available to use for the character. Each and every stage of the character has different set of abilities the player can use to overcome obstacles and at the same time there are also some negatives, which the character suffers from except for the average built stage. These stage switches are basically in control of the players and depends on their skills and reflexes on how they manage to make these switches.

Fat stage: The players start the game with the character in this stage. This stage also comes into effect when the player picks up a lot of power-downs and ultimately becomes fat. In this stage, the character cannot jump high because it is fat and cannot slide. Instead of sliding, the character can roll and smash through the slide-able obstacles.

Lean stage: The lean stage comes into effect when the player picks up too many power-ups and ultimately becomes lean. In this stage, the character can jump higher, slide normally and also float for a little amount of time defying gravity. The character is highly vulnerable to obstacles in this stage and may lose the run if he collides with a single obstacle.

Average built stage: The average built stage stays in effect as long as the players control their calorie intake and outlet. In this stage, the score achieved by the players is doubled. The character, in addition to sliding under obstacles and jumping above obstacles normally, can also perform different skills and tricks which when chained by the player can achieve them a great bonus score. Some skills include- Parkour, Wall jumps and some other environment based tricks.

Special Ability (The Fart): The Fart ability allows the character the boost his way through a long distanced gaining bonus score. The fart ability can only be activated after the character has digested enough food power-downs and that it can literally fart.

4.2.2. Non-Player Characters (NPCs)

There are two non-player characters in the game. These characters have a relationship with the player character and may not necessarily appear during gameplay.

NPC 1- Evangeline Serra: This non-player character is Bob's girlfriend Eve. She is ambitious and hardworking. Bob and Eve go to the same college and live in an apartment off-campus. Eve

is Bob's junior but they study the same subject, Geology. Eve is fed up with Bob's irresponsible attitude and playing computer games all day. She is fed up of being laughed at by her friends in college parties. So, she decides to make Bob realize the false effects of not exercising and being fit. And one fine day, she confronts him and says she will only give her hand in marriage to him if he becomes active and fit.

Basic Information

Name: Evangeline Serra

Gender: Female

Age: 21

Date of Birth: 22nd May 1992

Nationality: American

Appearance

Hair color: Blonde

Eye color: Brown

Height: 5'7"

Weight: 140 lbs.

Personality

Best Traits: Caring, responsible, ambitious and hard working

Hobbies: Nail art, listening to music and reading books

Other

~~Spouse/Girlfriend~~/Boyfriend: Bob McNally

Occupation: Student

NPC 2- Bruno: This non-player character is Bruno, the city dog. Bruno is a homeless dog that roams in streets and searches the trash for its daily meal. Nobody took time to notice this dog's state. Bruno was separated from his mother when he was a little pup. Bruno is ferocious and brave. It chases people when it senses danger to itself or when it is provoked, but never backs of like most of the dogs do.

Basic Information

Name: Bruno

Gender: Male

Age: 21 months

Date of Birth: 14th February 2012

Appearance

Hair color: Black and White

Eye color: Brown

Breed: Miniature Schnauzer

Weight: 15 lbs.

Personality

Best Traits: Caring

Likes: Bones, digging and smelling

5. Flow

Glutton Run is an endless runner game that flows with a series of multiple *missions* players may choose to accomplish. It is totally dependent on the players if they choose to complete the missions or not, but completing them provides the players with rewards that will help them achieve a higher score in their next runs. Not completing the missions does not affect gameplay or the overall experience of the game. The primary goal of the game is just to set a highscore, beat highscores set by friends and brag about highscores just like other runner titles.

5.1. Missions

Every run, the players have at least 3 missions in their *mission log* that they can choose to complete. After they successfully accomplish at least one mission, they are given another mission immediately that comes into effect immediately in the next runs. The players can choose to embark directly on completing the missions provided in Glutton Run and eventually build up rewards that help them in their runs further, ultimately helping them to achieve a better score. The missions are easy in the beginning and successive missions eventually get *harder to accomplish* as the players complete the easy ones. For example, if the first few missions in the game are like when a player is supposed to jump over 5 obstacles in a run, the next missions would require them to jump over 10 obstacles in a run and so on. The game becomes

progressively difficult, but the players will be rewarded with *permanent score multiplier* bonuses in their next runs. This system basically forces the players to embark on these missions and complete them to enjoy the bonuses. Then again, the players can still choose not to focus on completing the missions but just on setting a highscore.

The missions in game also provide *periodical rewards* such as character costumes and extra in-game currency to purchase power upgrades or costumes from the in-game store. For example, for every 3 missions completed the players are rewarded in-game currency or costumes based on the difficulty of the missions. The more difficult the mission the player accomplishes, the greater the periodical reward.

Additionally, players are provided with daily missions, which they can accomplish in every 24 hours' time range. These missions give the players temporary rewards that power their character for the entire day, narrowing the difficulty to achieve or set a highscore, but they expire if the players fail to complete them within the time range (24 hours) of the particular mission.

5.1.2. Normal Mission List

Listed below are a few missions in Glutton Run. The missions are repetitive with progressive difficulty levels. The players stop receiving more missions when they reach a set permanent score multiplier.

- Jump over 3 obstacles in a single run
- Slide under 3 obstacles in a single run
- Burn 300 calories in a single run
- Perform 5 tricks in a single run
- Ride the bicycle for the first time
- Hop on the Pogo Stick for the first time
- Run in the Lean stage for 5 seconds
- Run in the Fat stage for 10 seconds

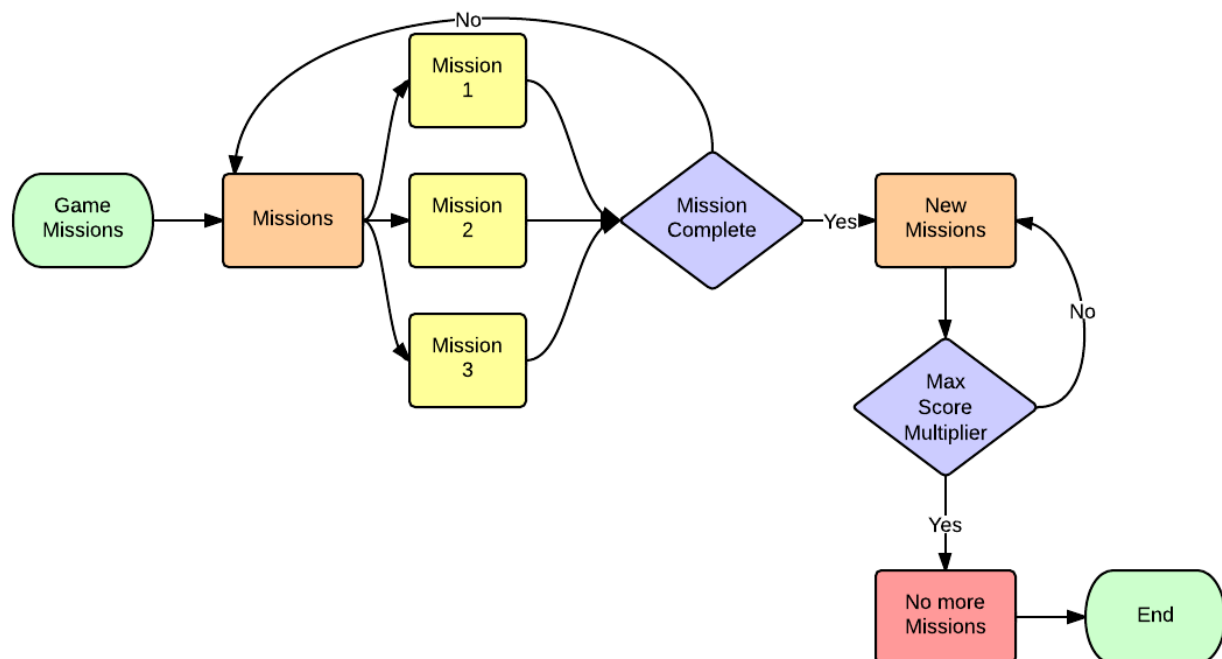
These are some examples of some missions in the game. The same missions listed above can be slightly modified to increase their difficulty in the following way.

- Jump over 10 obstacles in a single run
- Slide under 15 obstacles in a single run
- Burn 3000 calories in a single run
- Perform 10 tricks in a single run
- Ride the bicycle 3 times in a single run
- Hop on the Pogo Stick 3 times in a single run
- Run in the Lean stage for 25 seconds
- Run in the Fat stage for 30 seconds

The normal missions are repeated and cycled through with increased difficulty until the players reach a set amount of score multiplier. The game starts with the score multiplier at **x1** and for every 3 missions completed, the multiplier increases by **1**. Currently, the game's highest multiplier is set for a maximum of **x60**.

The players cannot choose to complete missions other than the 3 they are already provided with. They unlock other missions as they complete the previous missions. The players are still provided with a choice of 3 missions to choose from and can complete them in any order. If the players find a certain mission very difficult for them to complete, they can choose to waive it off paying in-game currency. Again, the waiver depends on the difficulty of the mission; the higher the difficulty, the costlier the waiver.

After the players reach the maximum score multiplier, they are not provided with any more missions, but they have a high multiplier which means their primary mission would then be to set the best highscore they can and compete with other players.



5.1.3. Daily Missions

5.1.3.1. Daily Missions List

The daily missions, unlike the normal missions must be completed within 24 hours after the players are notified about its effect. Failing which, the quest will expire not rewarding the players. Listed below are examples of daily missions.

- Collect 5 hearts
- Perform 5 tricks on a Pogo Stick
- Fart 3 times in a run

5.1.3.2. Daily Mission Rewards

Completing daily missions give temporary boosts to the players for the remaining time left over to complete the daily mission. The boosts are reset after the next daily mission comes into effect. Some of the temporary boosts include:

- Bicycle is upgraded to max for 24 hours
- Pogo Stick is upgraded to max for 24 hours
- Multiplier is increased by 5

5.2. Narrative

Glutton Run also has a small narrative to it. The game is made to create awareness to the people about the negative effects on health due to no exercise. So, a small background story supports this awareness concept in the game. The game's flow or the gameplay does not follow a certain narrative. It basically follows a runner theme where every run follows the same concept but a different challenge all the way through.

5.2.1 Story

Bob McNally (player character), is a 22 year old adult who loves to play video games all day. He lives in an apartment in San Francisco, California along with his girlfriend Evangeline Serra. They both go to the same college and study the same subject, Geology.

Bob never does his homework and his grades reflect poor performance at college. Though Eve, who is hard working, tries to spare some time to help Bob with his college work, he still does not put forth any effort. One fine day, Eve decides to do it the hard way and tells Bob that she will only go forward in their relationship and marries him if he becomes more active, fit, responsible and energetic... Well, un-glutton himself.

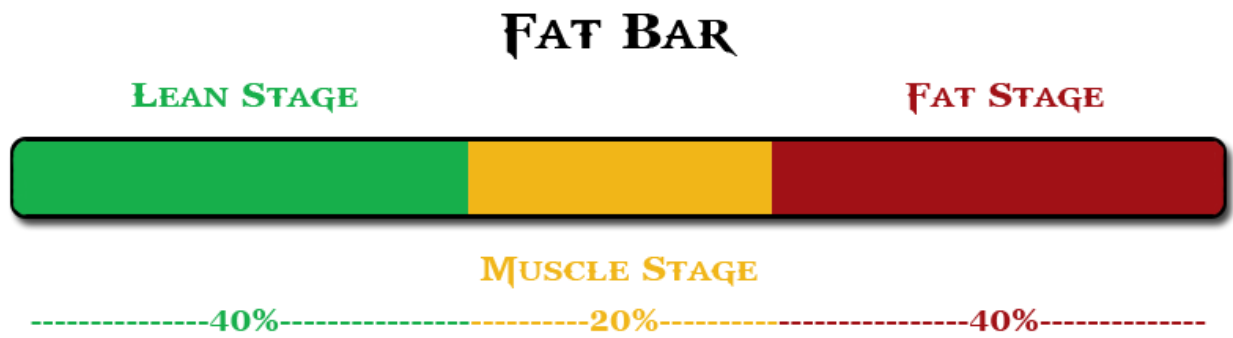
Though Bob is lazy, gluttony and irresponsible in all ways, he loves Eve very much and respects her words. He tries in vain to exercise but he cannot. He then starts giving lame excuses to skip exercise which infuriated Eve. She then kicks him out of the house and that is how Bob starts his weight loss drive (the game).

6. Game Mechanics

Players will run in each landscape mentioned previously for about 30 to 45 seconds. The players can choose to switch landscapes when prompted or can continue their run in any landscape. The landscapes occur at random.

The obstacles in the game are differentiated as: Normal obstacles, sliding obstacles and gap-like obstacles. Colliding with a minimum of 3 normal obstacles or sliding obstacles in less than 15 seconds will make the players lose their current run, triggering the Gameover screen. The gap-like obstacles always trigger the Gameover screen.

The players' interaction with the power-ups and power-downs show action with character acceleration/deceleration and also the **FatBar**.



FatBar- the **FatBar** shows how much fat the character has accumulated or got rid of. The **FatBar** is shown in **green** colour when it is filled up to 40% indicating the player is in the lean stage, it turns **red** when it is above 60% filled indicating the fat stage, and it turns **yellow** when it is in the range of 40-60% indicating the muscle stage. The **FatBar** is set to 10,000 calories maximum and 0 calories minimum where it will be increased or decreased based on the power-ups or power-downs picked respectively. Also, as the character runs, the **FatBar** keeps on depleting and that counts as calorie burning.

6.1. Character Abilities

Players are provided with a set of abilities available to be used by the character in every run. Each and every stage of the character has some enhancements enabling the player to overcome obstacles and/or set a highscore and some weaknesses on the abilities restricting them to accomplish the obstacle course. These enhancements and weaknesses are explained later in the document (see Stage Enhancements and Weaknesses).

6.1.1. Basic Abilities

Players will come across 4 **basic abilities** which they can use. They are: Run, Jump, Slide and a special ability, **Fart**.

Run- This character action does not require any user input. The character will be automatically running as the game begins. There are 3 aspects that affect the character running, they are: Acceleration, Deceleration and Collision.

Assuming the **Acceleration** of the character be “A”, The **Maximum Speed** the character can run with, be “S”, the **Minimum Speed** of the character be “M” and the **Current Speed** of the character be “C”.

The Acceleration- The character always accelerates at the same rate A. The acceleration stops after the character reaches its maximum speed S. The minimum speed M of the character is set, so that the character never falls in the gap-like obstacles when players jump. Though, players may fall if their jump is incorrectly timed.

The effect of power-ups on acceleration: When players pick power-ups like energy drinks, the character is slightly boosted to “C+10” for a short period of time and then eventually the speed falls down and always remains less than or equal to the maximum speed S. The boost speed cannot go above S+10.

The effect of acceleration on FatBar: The rate of acceleration is directly proportional to the rate of depletion in the **FatBar**. That is, as the acceleration increases, the rate at which the **FatBar** gradually decreases also increases.

The Deceleration- The character will be decelerated at the rate of “C-10” for every power-down that is picked. The deceleration stops if the character has reached the minimum speed M.

The effect of deceleration on FatBar: The rate of deceleration is inversely proportional to the rate of depletion of the **FatBar**. The rate of depletion of the **FatBar** decreases and also a chunk is added to it due to the power-down pickup.

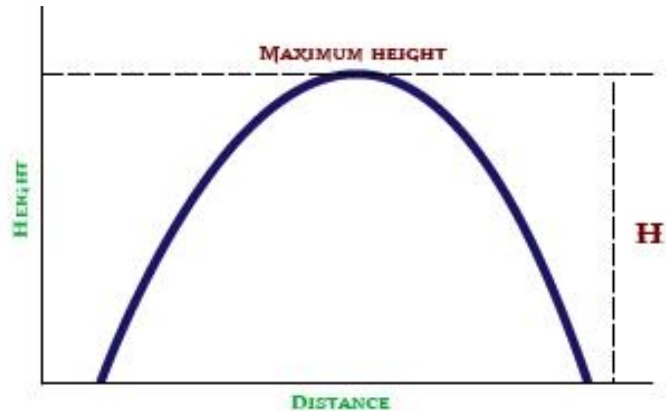
Collision- When the character is collided with a collider (obstacles), its current speed C drops to minimum speed M instantly. Collision has no effect on the **FatBar**. A “1 second” cooldown is given until the character experiences the next collision. That is, all the collisions are negated for 1 second after the previous collision. However, the character may fall in the gap-like obstacles in the collision negation time as well.

Jump- The character jump action requires a “slide finger up” input on the device the game is being played. When this action is called, the character jumps to a height “H” and will be in the air for 2 seconds. As the character already holds certain acceleration, it would be easy to cover the obstacles in the game. The air time ensures the character to get past obstacles. However, if the jump is not timed right, the character may experience collision with obstacles or falling into the gap-like obstacles.

Let the height of the character’s collider (character itself) be “h”, The height to which the character can jump be “H”, height of obstacle colliders be “x” and the height at which the sliding

obstacle colliders are placed be “h” (same as the character height, as the character cannot jump above the sliding obstacle colliders).

NORMAL JUMP CURVE



From the above, $H = h = 2x$.

Note: The character always jumps a distance directly proportional to the current speed “C” of the character.

Jump distance $\propto C$

Slide- The character Slide action requires a “slide finger down” input on the device the game is being played. When this action is called; the character slides on the ground to avoid sliding obstacles. The character slides for 2 seconds with the current speed C , the time interval is to ensure the easy movement of the character through the obstacle. However, the character may still collide with the obstacle if the Slide is not timed right. While sliding, the height of the character’s collider h is cut to half to ensure that the character can easily slide through obstacles.

While sliding, $h = h/2$.

Note: The character always slides a distance directly proportional to the current speed “C” of the character.

Slide distance $\propto C$

Fart- the Fart ability requires a “double tap” input on the device the game is being played. When this action is called, the character farts with great pressure (in complete comic sense) and pushes itself forward. The character flies a certain distance till the **FatBar** is completely depleted with a speed equal to twice the maximum speed S of the character. However, the fart ability can only be used when the **FatBar** is filled up to more than 90% and is prompted on the screen. It is up to the player whether they choose to use it or not.

Fart distance = $2 \times S / \text{Time taken for the **FatBar** to be completely depleted}$

FatBar depletion rate = Strength of the power-downs / 2

If there are different power-downs picked up to fill the **FatBar**, then the rate of depletion is the arithmetic mean of strengths of all the power-downs picked up.

Depletion rate = \sum Strength of power-downs / total number of **different** power downs

6.1.2. Pickups

Players are provided with 3 different pickups in Glutton Run which further enables the players to gain temporary boosts in the game to enhance their runs and the score. These pickups are further enhanced and weakened for certain character stages. The pickups can be upgraded permanently using the in-game currency or real money.

The Bicycle pickup- Whenever the Bicycle is picked up by the character in a run, the character's movement speed is accelerated instantly to "**S+40**" (Maximum Speed + 40). The character will be riding the bicycle across the levels and all the obstacles are overridden. The character becomes immune to any collision for 7 seconds. However, falling into gap-like obstacles will end the run.

Bicycle Speed = **S+40**

The probability and the number of power-ups and in-game currency that can be obtained by the players during the pickup duration are increased and their value is doubled.

This pickup is visually shown with a motion blur effect on the character as it speeds its way through the levels. This pickup can be upgraded using the in-game currency or real money, providing the upgraded effect to the players permanently in any run after the upgrade.

The Bicycle upgrades:

- Level 1 – The bicycle lasts for 7 seconds. (Default)
- Level 2 – The bicycle lasts for 9 seconds. Cost: 500 in-game currency.
- Level 3 – The bicycle lasts for 11 seconds. Cost: 1500 in-game currency.
- Level 4 – The bicycle lasts for 13 seconds. Cost: 7500 in-game currency.
- Level 5 – The bicycle lasts for 15 seconds. Cost: 15000 in-game currency. Further, the final upgrade adds a custom effect for the bicycle and appears unique from all the other levels of the upgrade.

The Pogo stick pickup- Whenever the Pogo stick is picked up by the character in a run, the character's jump height is doubled by "**H+H=2H**". The character will have no control over the Jump function for the duration of this pickup as the character will always be jumping, but the

players can tap their finger on the screen to time the jumps and evade obstacle collisions. The character is immune to falling into gap-like obstacles for 7 seconds. However, the collisions will still be doing their function.

Pogo Stick Jump height = $2H$

The probability and the number of power-ups and in-game currency that can be obtained by the players during the pickup duration are increased and their value is doubled. Moreover, the character will be jumping higher than it normally does to reach certain heights to collect power-ups and bonuses.

The pickup is visually shown with the screen moving rapidly along with the character as it is jumping high. The pickup can be upgraded using the in-game currency or real money, providing the upgraded effect to the players permanently in any run after the upgrade.

The Pogo stick upgrades:

- Level 1 – The Pogo stick lasts for 7 seconds. (Default)
- Level 2 – The Pogo stick lasts for 9 seconds. Cost: 500 in-game currency.
- Level 3 – The Pogo stick lasts for 11 seconds. Cost: 1500 in-game currency.
- Level 4 – The Pogo stick lasts for 13 seconds. Cost: 7500 in-game currency.
- Level 5 – The Pogo stick lasts for 15 seconds. Cost: 15000 in-game currency. Further, the final upgrade adds a custom effect for the Pogo stick and appears unique from all the other levels of the upgrade.

The Detoxifier- Whenever the Detoxifier is picked up by the character in a run, the character's stage is instantly changed to the Muscle stage (See Character Stages and Advanced Abilities). Moreover, the Detoxifier has a passive bonus that can be upgraded using the in-game currency or real money, providing the upgraded effect of the pickup to the players permanently in any run after the upgrade.

The Detoxifier passive upgrades:

- Level 1 – The players can collect doubled in-game currency after running 3500 meters. (Default)
- Level 2 – The players can collect doubled in-game currency after running 2500 meters. Cost: 500 in-game currency.
- Level 3 – The players can collect doubled in-game currency after running 1000 meters. Cost: 1500 in-game currency.

- Level 4 – The players can collect tripled in-game currency after running 2500 meters. Cost: 7500 in-game currency.
- Level 5 – The players can collect tripled in-game currency after running 1500 meters. Cost: 15000 in-game currency.

6.1.3. Character Stages and Advanced Abilities

There are 3 different stages of the character (See FatBar). The players always start the game in the Fat stage. The concept of the game is that the players have to use their skill to maintain the character in the Muscle stage as long as possible, because the muscle stage provides the players the ability to achieve the most score in the game. Picking power-ups make the character lose fat and gradually get down to the Lean stage and picking power-downs make it gain fat and gradually get to the fat stage. Both the fat stage and the lean stage have disadvantages.

Fat Stage- The players start the game with the character in this stage. This stage also comes into effect when the player picks up a lot of power-downs and ultimately becomes fat. In this stage, the character cannot jump high because it is fat and cannot slide. Instead of sliding, the character can roll and smash through the slide-able obstacles.

In the fat stage, the character cannot jump as high as it can in any other stage due to its over-weight state. The jump function in this stage is halved.

$$\text{Jump height in Fat stage} = H/2$$

The character cannot slide under obstacles in this stage, but instead, for the same functional input, the character rolls through obstacles smashing and destroying them. Also, in this stage, the maximum speed of the character is reduced.

$$\text{Maximum speed of the character in Fat stage} = S-40$$

In the game, this is the only stage in which the character can use the special ability; the fart. The players will be prompted on the screen that the Fart ability is available to use when the character's FatBar is over 90%. The ability requires a double-tap input when prompted.

The effect of the Bicycle in fat stage: The bicycle pickup is weakened in the fat stage. The bicycle only lasts 3 seconds as the character is heavy in this stage and for every upgrade point on the bicycle pickup; a 1 second bonus is added to its duration. Hence, the maximum duration a player can ride the bicycle in the fat stage is **3+1 (for each upgrade point)** seconds which can be a total of 7 seconds.

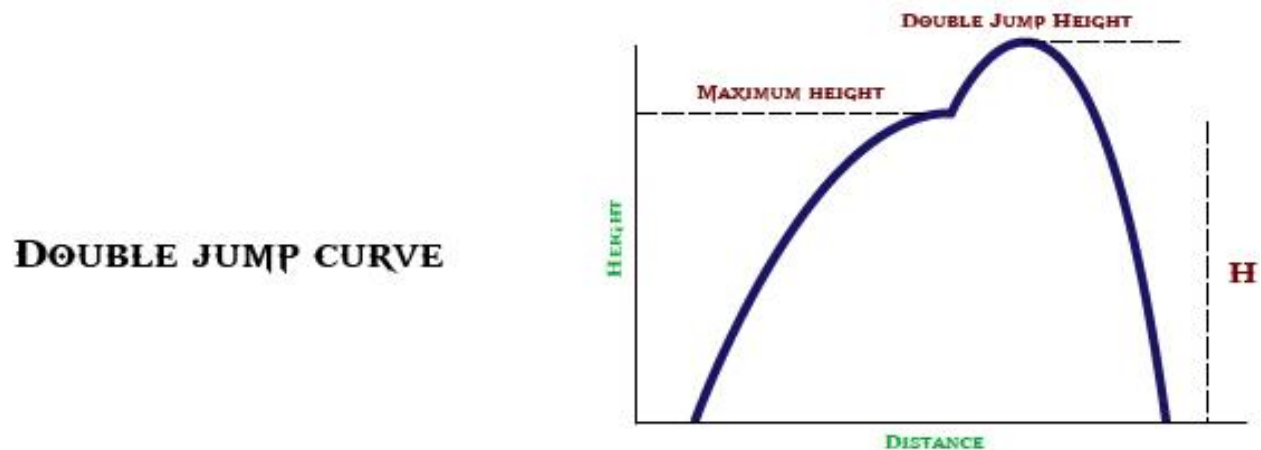
The effect of the Pogo stick in fat stage: The pogo stick pickup is strengthened in the fat stage. As the character is heavy, it can obtain great thrust from the pogo stick and reach higher altitudes to collect bonuses. The height the character can reach with the

pogo stick is again doubled by its own value. However, the duration of the pickup remains same and improves after the upgrades as usual.

$$\text{Pogo stick jump height in fat stage} = 2H \times 2 = 4H$$

Lean Stage- The lean stage comes into effect when the player picks up too many power-ups and ultimately becomes lean. In this stage, the character can jump higher, slide normally and also have the ability to double jump. The character is highly vulnerable to obstacles in this stage and may lose the run if it collides with a single obstacle.

In the lean stage, the character has the ability to **double jump** as it is lean and weightless. This secondary ability requires another slide finger up input after the first jump input is given. If the players fail to input another jump input while the character is in the air, the double jump function is reset after the character touches the ground.



The double jump's height is always added to the current altitude of the character, that is if the players choose to jump after the character reaches the maximum height H , then the double jump will take the character to an altitude of $H+5$. If the players choose to double jump when the character is at an altitude of $H-3$, then the double jump will take the character to an altitude of $H-3+5 = H+2$.

$$\text{Jump height in Lean stage} = H$$

$$\text{Double Jump height} = \text{Current altitude of the character} + 5$$

The character can slide under obstacles normally in this stage. Also, in this stage, the maximum speed of the character is increased.

$$\text{Maximum speed of the character in Lean stage} = S+40$$

The effect of the Bicycle in lean stage: The bicycle pickup is strengthened in the lean stage. The bicycle lasts for the same duration depending on the level of the pickup's

upgrade and as the character is lean, the bicycle's speed is increased. Additionally, the character can jump and also double jump while on the bicycle to reach higher altitudes to collect bonuses.

Maximum speed of the bicycle in Lean stage = $S+80$

The effect of the Pogo stick in lean stage: The pogo stick pickup is weakened in the lean stage. As the character is lean, skinny and weightless, it gets really weathered hopping the pogo stick for longer duration. The height the character can reach with the pogo stick remains the same as it is in all stages (except fat stage), that is **2H**. Hence, the maximum duration a player can ride the pogo stick in the lean stage is **3+1 (for each upgrade point)** seconds which can be a total of 7 seconds.

Muscle Stage- The muscle stage stays in effect as long as the players control their calorie intake and outlet. In this stage, the score achieved by the players is doubled. The character, in addition to sliding under obstacles and jumping above obstacles normally, can also perform different skills and tricks which when chained by the player can achieve them a great bonus score. Some skills include- Parkour, Wall jumps and some other environment based tricks.

The chain starts with a score of “**300**” whenever the player successfully jumps over or slides under an obstacle. As soon as the character reaches the muscle stage, the environment changes to a point where the obstacles will be in such a way that the character can perform tricks with their help. However, failing to do which, the character still suffers collision and falling into gap-like obstacles.

The trick score increases by **200** for every successful chain. If the player breaks the chain either by jumping or sliding when there are no obstacles or when they collide with any of the obstacles, the trick score multiplier is reset to 300 and then starts to multiply for every successful maneuver.

Assuming ‘**X**’ is the current trick score of the player. In the beginning, the trick score is 300 and for every successful trick the score increases by 200; making the current trick score be equal to the sum of **trick score before performing the trick + 200**.

Trick score multiplier = $X + 200$, where **X is the current trick score**.

The effect of the Pickups in muscle stage: The pickups work normally (see Pickups) in the muscle stage. There are no special modifiers that can change the effects of the pickups in the muscle stage. Except for the fact that the character can also perform tricks in the duration of the pickups which give them the bonus score for the tricks.

In this case, the chain starts at “**500**” and for every successful trick, the score increases by 300. This slightly modifies the equation for the trick score multiplier while the character is using pickups in the muscle stage.

Trick score multiplier = $X + 300$, where X is the current trick score.

List of some tricks that can be performed in the muscle stage:

- Side flip
- Front flip 180
- Dive roll
- Wall jump
- Wall flip
- Monkey vault
- One handed vault
- Wall Run
- Back flip roll
- 180 roll

List of some tricks that can be performed while the character is on pickups:

Bicycle tricks-

- Bunny hop
- Can-Can
- No footer
- One hander
- Grind
- Wall tap
- Superman
- Abubaca

Pogo stick tricks-

- The chick
- The duck
- Froggy
- One footer
- No footer
- Scissors kick

6.2. Missions and Achievements

6.2.1. Normal Missions

Every run, the players have at least 3 missions in their *mission log* that they can choose to complete. After they successfully accomplish at least one mission, they are given another

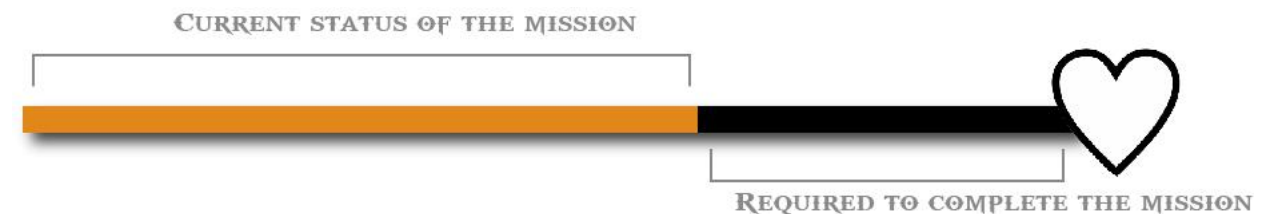
mission immediately that comes into effect immediately in the next runs. The players can choose to embark directly on completing the missions provided in Glutton Run and eventually build up rewards that help them in their runs further, ultimately helping them to achieve a better score (See Missions in Flow).



YOU NEED TO COMPLETE ONE MORE MISSION TO UNLOCK THE NEXT LEVEL

6.2.2. Daily Missions

Players are provided with daily missions, which they can accomplish in every 24 hours' time range. These missions give the players temporary rewards that power their character for the entire day, narrowing the difficulty to achieve or set a highscore, but they expire if the players fail to complete them within the time range (24 hours) of the particular mission (See Missions in Flow).



YOU NEED TO COLLECT THREE MORE HEARTS TO COMPLETE THE MISSION

6.2.3. Achievements

Achievements are set goals in the game which when completed players earn **stars** and are showcased in the Highscores screen. Each achievement is progressive, which means that the players need to perform the set actions to gain stars for that respective achievement. Every achievement has 3 stars that can be gained and earning every successive star is difficult than the previous.

Example of achievement:

Star 1 – Upgrade all pickups to level 3

Star 2 – Upgrade all pickups to level 4

Star 3 – Upgrade all pickups to level 5

The example above is an interpretation of one single achievement. Players earn stars for every completed segment of the achievement which are shown in the achievements menu.

6.3. Power-ups and Power-downs

6.3.1. Power-ups

The power-ups in the game help **deplete** the calories in the **FatBar** and its score is added to the final score. The power-ups also provide short bursts of speed to the character when picked up. The power-ups include Energy drinks, Coconut water, Fruits and vegetables (Fruits and vegetables include: Papayas, Water melons, Bananas, Mangoes, Carrots, Spinach, Broccoli and Corn) and Calorie burners.

The power-ups basically make the character go to the leaner stages faster. Again, picking them up and calculating in which stage the players want the character to be is up to the players. The short bursts of speed the character gains when the power-ups are picked increase the character's current speed for 0.5 second.

If the character's current speed is less than the maximum speed, then the character will be accelerated faster to reach the maximum speed while boosted. If the character's current speed is equal to the character's maximum speed, then the character will be boosted over the maximum speed for 0.5 second and then the speed falls down to the maximum speed.

Boost speed = **C+20 for 0.5 second**

Each power-up decreases a set number of calories from the **FatBar** and contribute the same number to the final score.

Energy Drink	=	1000 points/3.5% from the maximum FatBar
Healthy Meat	=	750 points/2.5% from the maximum FatBar
Fruits/Veggies	=	500 points/1.5% from the maximum FatBar
Calorie Burners	=	250 points/0.5% from the maximum FatBar

Note: The FatBar does not go below its minimum value or over its maximum, when the power-ups or power-downs are picked up respectively.

6.3.2. Power-downs

The power-downs in the game **restore** the calories in the **FatBar** and its score is subtracted from the final score. The power-downs make the character decelerate when picked up. The power-downs include Burgers, Pizzas, Cakes and Fries.

The power-downs basically make the character go to the fatter stages faster. Again, picking them up and calculating in which stage the players want the character to be is up to the players.

The deceleration always affects the character's current movement speed and the speed is decreased.

If the character's current speed is less than the maximum speed, then the character could be decelerated down to the minimum speed. If the character's current speed is equal to the character's minimum speed, then the character will not be decelerated any further.

Power-down deceleration = **C-20**

Each power-down restores a set amount of calories to the **FatBar** and the same is subtracted from the final score.

Burgers	=	1000 points/3.5% of the maximum FatBar
Pizzas	=	750 points/2.5% of the maximum FatBar
Cakes	=	500 points/1.5% of the maximum FatBar
Fries	=	250 points/0.5% of the maximum FatBar

Note: The FatBar does not go below its minimum value or over its maximum, when the power-ups or power-downs are picked up respectively.

6.4. Audio

There are a few audible tracks the players would hear when they perform certain actions or trigger an event such as the special ability. Some tracks are rare and require the players to either perform tricks and achieve a high trick chain or manipulate strategically to change their character stage. These tracks are also accompanied by visual words on the screen of what the tracks would sound like and the reason they serve in the game would be excessive immersion for the players. Some of the audible track words and their occurrences in the game are listed below.

"Sweeeeeeeet!", when players manoeuvre 5 obstacles successfully (successfully means, without colliding with any obstacles).

"Awwwesome!", when players manoeuvre 15 obstacles successfully.

"Master Burner!", when players manoeuvre 30 obstacles successfully.

"Faaat Burner!", when players activate the special ability every 3rd time.

"Gluttony!", when players pickup too many power-downs in a certain duration.

"Kill-e-riees!", when players pickup too many power-ups in a certain duration.

"Trickster!", when players perform 5 tricks successfully.

"Master Trickster!", when players perform 15 tricks successfully.

“God of Tricksters!”, when players perform 30 tricks successfully.

These audible tracks are triggered whenever the players perform the appropriate actions and if an action is triggered when an audible is being played, that particular action’s audible overrides the previous audible.

6.5. Camera

The camera is fixed in a 2D perspective and is always focused on the character. The character is always on the left side of the screen (unless it is going through special abilities). The camera always moves with the character in its position through the environment. The environment moves from right to left into the scene, so the players can clearly have a look over the obstacles, power-ups, power-downs and pickups and maneuver accordingly.

6.6. Arithmetic Score

There is score for a few aspects in the game like: Power-up score, Power-down score, score for the distance travelled, score during special ability, score for the number of calories burned and score for the number of calories gained. **The final score is obtained by adding all the scores, multiplying the sum with the current player multiplier and finally subtracting the negative scores.**

The score multiplier grows a level for sets of missions the players complete. The starting score multiplier is set to “1”.

Power-up score- There are set points for all the power-ups that can be collected in the game. These points will be **added** to the final score.

Power-down score- There are set points for all the power-downs that can be collected in the game. These points will be **subtracted** from the final score.

Distance score- The distance score is calculated by multiplying the current score multiplier of the player with the total distance travelled by the player in that run. The distance score is **added** to the final score.

$$\text{Distance score} = \text{Multiplier level} \times \text{total distance travelled}$$

Score during special ability- While using the Fart ability, the current score multiplier of the player is doubled and is affected with the distance travelled by the player while using the fart ability. The special ability score is **added** to the final score.

$$\text{Fart score} = 2(\text{Multiplier level}) \times \text{Distance travelled while farting}$$

Score for burning calories- The total number of calories burnt in the whole run is determined by calculating the number of calories subtracted from the **FatBar**. For example, as the limit of the **FatBar** is set to 10,000 calories and the player gained 9200 calories and burnt

them, that counts as 9200 points for burning calories, again the player gains 9800 calories and burnt 4500 calories and then lost the game, then the total score for burning calories will be:

$$9200 + 4500 - 9800 = 3900 \text{ points}$$

The score for burning calories is **added** to the final score.

Score for gaining calories- The total number of calories gained in the whole run contribute to the score for gaining calories. Taking the same example as above, the total calories gained in the run will be:

$$9200 + 9800 = 19000 \text{ points}$$

The score for gaining calories is **subtracted** from the final score.

Score for tricks performed- The score obtained by performing tricks along with their chained score are added to the current score whenever the chain for the tricks end.

The Final Score- The final score is thus got by:

Final Score = Power-up score - Power-down score + distance score + Special ability score + score for burning calories – score for gaining calories + score for tricks performed

6.7. In-game Store

The in-game store is primarily the place where the character related customizations, upgrades and other different means of improving the gameplay are provided to the players. It also provides players the option to customize their character by purchasing a variety of costumes. As the players are confined to play only one character in the game, they can buy costumes for the same character. The players however, are also provided with costumes for the different stages for the character.

All the upgrades/customizations in the in-game store are purchased using the in-game currency. However, players can also buy the in-game currency using real money. Currently, players cannot buy anything but the in-game currency using real money.

6.8. Game Over

The **Game Over** is triggered for 3 events:

- If the **FatBar** is over 90% for more than 5 seconds.
- If the character has collided with obstacles ≥ 3 in less than 15 seconds.
- If the character falls into gap-like obstacles.

Once the game is over, the points scored in the run are displayed on the screen.

7. Interface

Glutton Run goes through a diegetic flow in its gameplay and the other interface related aspects in the game such as the HUD and Menus are non-diegetic or spatial.

Diegetic- The interactive elements that occur during gameplay such as obstacles, pickups, power-ups and power-downs are basically the diegetic components in the game. The components fall in the game's narrative and are also present in the game space. These elements are the noticeable cues for the players and the character in the game as well. These are importantly the elements which both, the players and the character in game are aware of and can interact with. The diegetic components in the game connect the players with the character and make the game more immersive.

Non-Diegetic- The player interactive elements such as the heads-up display on the screen while the players are playing the game and the menus displayed on the screen and their navigation are basically the examples of non-diegetic components in the game. These components need not necessarily fall in the game's narrative though they are present in the game space. In this case, the heads-up displays are the **spatial components** in the game as the character in the game is not aware of them, but the players are.

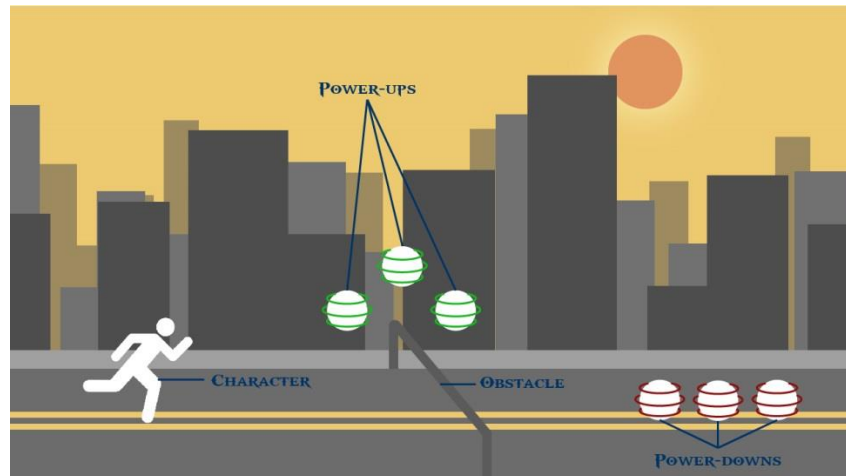
Glutton Run's interface design allows players to interact and navigate through its elements with ease. The design is simple and needs no further instructions to understand its simplicity. The interface elements such as the HUD are spatial components and the GUI elements are non-diegetic components.

7.1. Gameplay Interface

The basic gameplay interface shows the interactive elements that appear during gameplay and how they are arranged on the screen. These elements are diegetic and create immersion. Examples of these elements are:

- The character
- The levels/landscapes
- Power-ups and power-downs in the game
- Pickups
- Obstacles

The diagram below shows how the aforementioned components appear on the screen and how the players will be able to differentiate them from one and other. The power-ups always have a green aura around them implying that they are good to pick up. The power-downs show a red aura around them implying that they are not good to pick up. The pickups are basically the icons that represent their action.



The obstacles appear brighter than the background (landscapes), implying player's interactivity with them and separating them from the background though they are a part of it.

7.1.1. Character stage transition

Whenever the character changes its stages, the character animates itself into the changed stage. All the other elements turn darker on the screen while the character remains bright. A light ray animation surrounding the character emphasizes the stage transition. The screen returns to its normal state (brightens up) after the transition is complete.

After each transition, the players are challenged with obstacle courses suited for that particular character stage.



7.1.2. Special ability transition

Whenever the character uses the special ability (fart), the character goes through a certain animation that shows how the character will be speeding its way across the levels with a stream of fart gas trailing behind it. The screen darkens and a motion blur effect is applied to the background to imply speed of the character.



7.1.3. Pickup transition

The pickup transition is also showed in the same way as the special ability transition except for minor changes. The background is not darkened because the players must have clear vision on the obstacles coming ahead. The motion blur effect on the background is minimal.

7.2. Heads-up Display (HUD)

The heads-up display is always active on the gameplay screen. It basically shows the FatBar, the multiplier and the current score of the players.



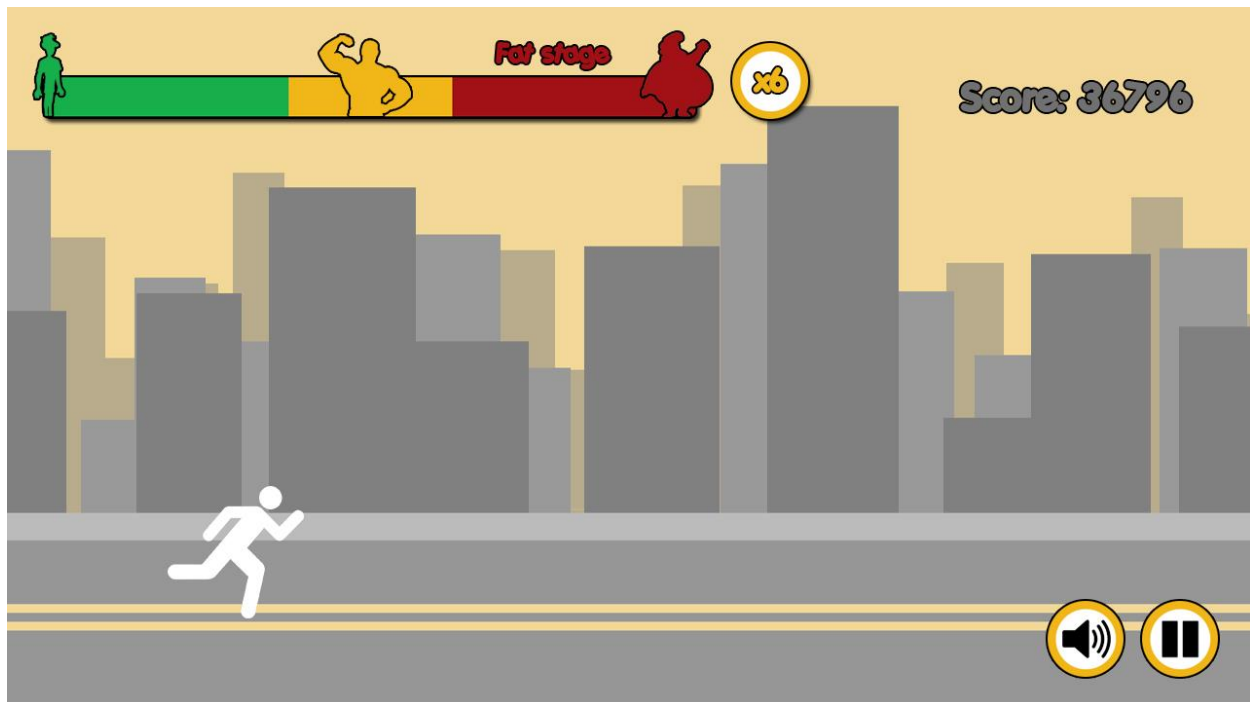
The FatBar is located on the top-left of the screen and the character stages will be indicated by their names being displayed over the FatBar when they come into play. The FatBar will be filling or depleting itself depending on the power-downs or the power-ups picked by the character.

The score multiplier is displayed right next to the FatBar and it shows the current multiplier level of the player. Whenever the score multiplier changes in game while using the special ability or other pickups; its temporary increase is shown by increasing the number on the

multiplier with a blinking effect implying that the bonus will be expiring soon. In this temporary period, the score gained is multiplied by the increased multiplier.

The current score of the player is displayed on the top-right corner of the screen and shows the current score obtained by the player in the current run. Whenever the player triggers the gameover screen, the total score obtained in the run is displayed in the post-run screen.

The mute icon and the pause icon are located on the bottom-left corner of the screen. The mute icon is used to mute or un-mute the master volume in the game. The pause icon is used to pop-up the pause menu which consists of 4 options: Resume game, Options, Restart game and Quit.



7.3. Graphical User Interface (GUI)

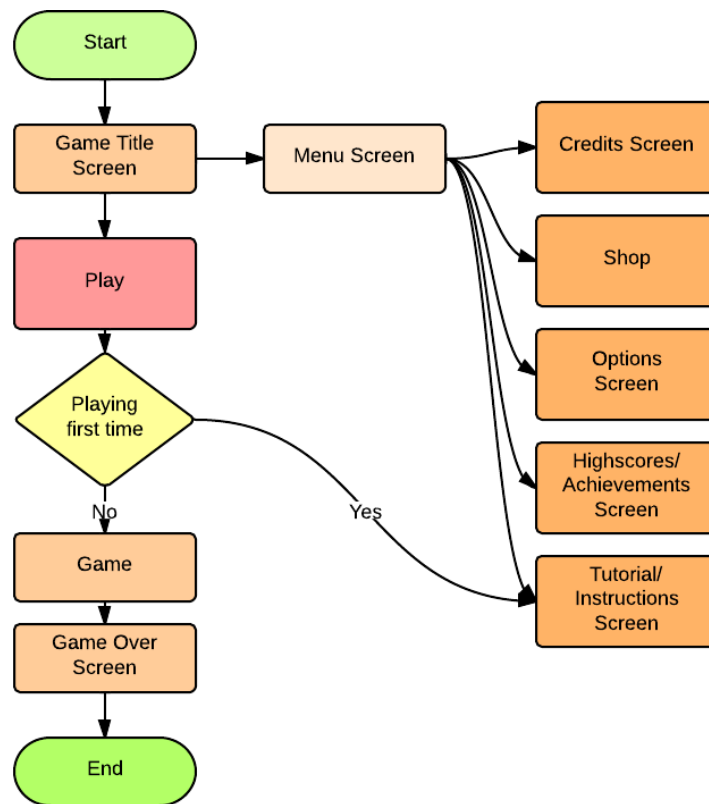
The graphical user interface in Glutton Run is designed to suit the game's theme. It showcases the comical anime styled graphics and animations throughout the application. The titles and headings of important information are showed using the font **Porky's**. This font is bulky and has weight in it portraying a fat/gluttony feel to the overall interface.

The GUI system uses icons, symbols and signs that are generic and obviously recognizable by the players. The interface needs no extra explanation on how it should be used. Since the game has only a few menus, all of them being linked in a discernable fashion, the players would not find any difficulty in reading them, knowing what functions they perform or navigating through them.

7.4. Menus

There are a total number of 10 screens the players get to see in the game, all of which need not be navigable through the menu screen. For example, the gameplay screens and the gameover screens come into function when the players play the game and when the game is over respectively. The title screen is the first screen that the players will look at after starting the game. All the other menus are organized in the menu screen.

The navigation is simple and every screen has a back button that helps them to navigate back to the menu screen and another button on the menu screen that helps them navigate to the title screen. **The game can only be started from the Title screen.**



7.4.1. Title Screen

The title screen is the starting screen the players will look at after launching the game. The title screen shows the title of the game, below which there is a text that says “Touch screen to start”. The title screen shows the character in the game blurred in the background along with the level the character will be running in. When players touch the screen, the game immediately starts as the title and the text move away from the screen un-blurring the background and the character starts running.



The menu icon and the mute icon are located on the bottom right of the title screen. Players can only navigate to the menu screen by touching the menu icon on the title screen.

7.4.2. Menu Screen

The Menu screen shows the different menus which the players can navigate to. When navigated to a menu from the menu screen, that menu has a button that which when touched returns the players back to the menu screen.



7.4.3. Options Screen

The Options screen is a menu that allows players to adjust the master volume of the game, the sound effects volume and the music volume each of them separately. They can also set the graphics detail ranging from low to high, to allow them to play the game on devices that do not support high end graphics.

7.4.4. Shop Screen

The Shop screen is where the players can customize their character by purchasing different skins or costumes. They can also upgrade the character pickups in the game and turn in real money for in-game currency.

7.4.5. Credits Screen

The Credits screen shows the list of people who are responsible for making Glutton Run and their designations. Whenever the players navigate into this screen, the list always scrolls up.

7.4.6. Highscores/Achievements Screen

The Highscores/Achievements screen stores the highscore of the players and shows it when players navigate into this screen. This screen also shows the achievements and missions the players have completed in the game.

7.4.7. Tutorial/Instructions Screen

The Tutorial/Instructions screen shows the controls of the game and guides the players who are playing the game for the first time or who need to refer to the instructions again. This section shows the controls of the game, gives information of what the pickups will do and all the other information about the power-ups and power-downs. It basically covers all the information that the players will come across in the game.

7.4.8. Gameover Screen

The Gameover screen comes into function after the players end their run. This screen shows the players their score in the current run. The gameover screen also shows the amount of in-game currency they accumulated in the current run. Touching the gameover screen navigates the players back to the Title screen.

7.5. Controls

There are only 4 commands the players can input to perform actions in the game. They are slide finger up, slide finger down, tap and double tap.

Slide finger up: While playing the game, this command is used to call the jump function in the game. This command makes the character jump over obstacles to avoid them in the game. When in the lean stage, this command also enables the double jump function.



Slide finger down: While playing the game, this command is used to call the slide function in the game. This command makes the character slide under obstacles. When in the fat stage, this command makes the character roll and smash through obstacles.



Tap: This command is used to navigate through the menus in the game. Tapping is just clicking/touching on menus and icons that help in the navigational flow of the game.



Double tap: While playing the game, this command is used to call the special ability function in the game. This command when used after it is prompted to, will make the character fart when in the fat stage.

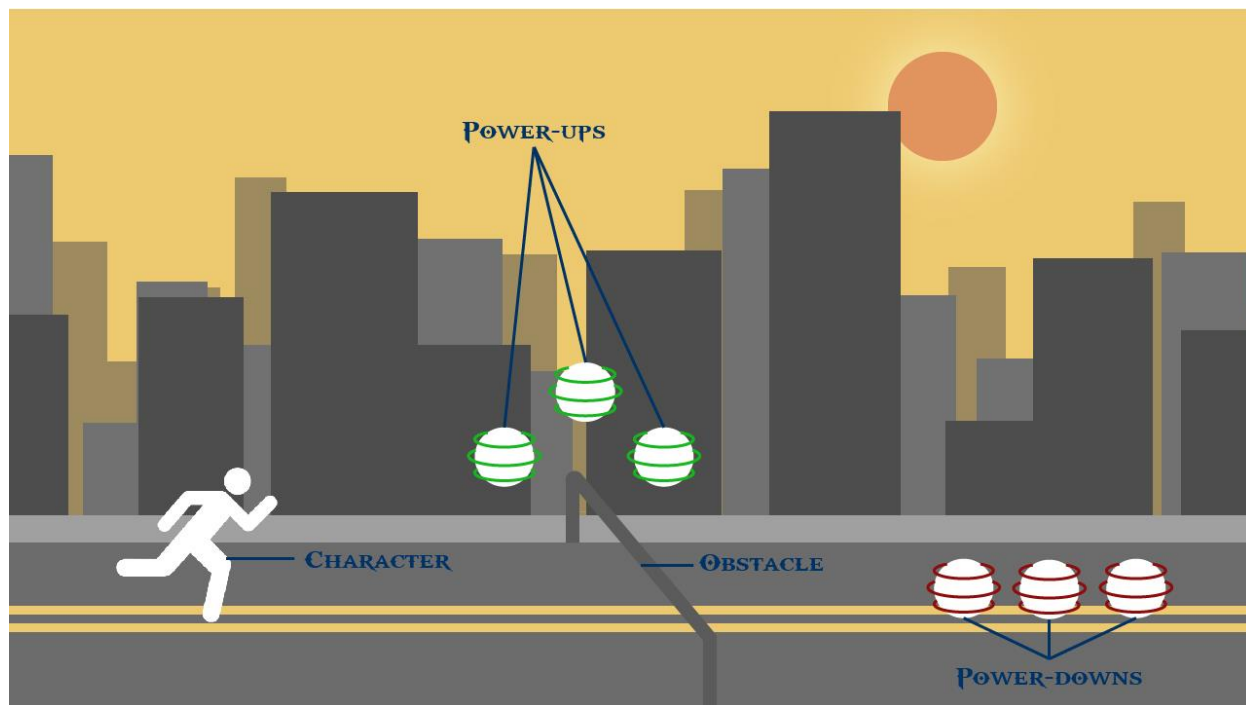


8. Level Design

This section, explains in detail about all the elements in the game. The maps drawn are small and basic sections of the levels in the game.

8.1. Map and Layout

The City- The city shows players, the tall buildings and the beautiful scenes in the city of San Francisco. The players run through crowded squares, shopping malls and important crossings in the city. They will also come across little groups of people on the roads.



The key interactive elements the players come across in the City are: barricades, dogs, footpaths, pedestrians, crossings, cars, manholes and double storied buildings. Players will be challenged by the pedestrians, barricades, crossings and cars in the City.

Players must avoid falling into manholes, failing which, the game is over. Players will also have to make a choice to either go above or below the double storied buildings depending on the level of danger. The dog is another challenge to the players as it will be chasing them at random times in the city and they have to run away from it.

The Rooftops- The rooftops landscape is the same as the city, but the only difference is that the players will be running on top of the huge buildings and not on the roads. In this landscape, the players see beautifully clouded skies and birds flying across the screen.



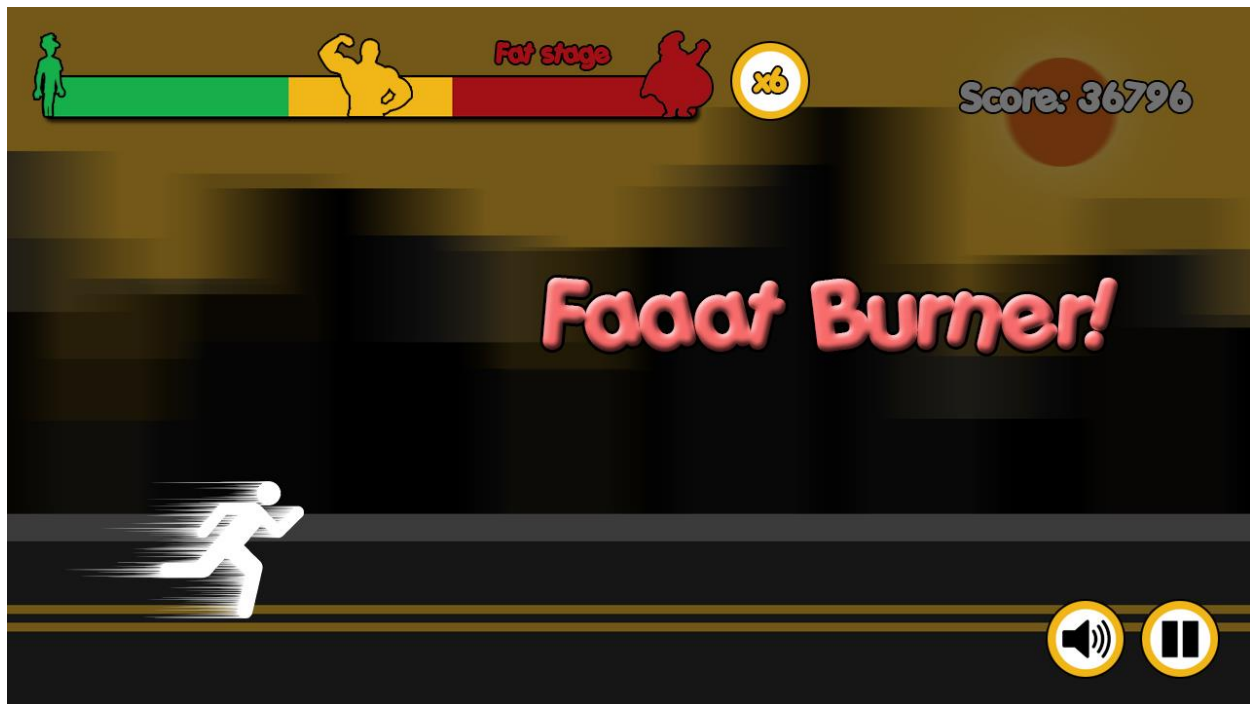
The key interactive elements the players come across on the Rooftops are: antennae, boxes, birds and the gaps between the buildings. Players will be challenged by the birds, boxes and antennae. Players must avoid falling into the gaps between the buildings, failing which, the game is over.

The Golden Gate Bridge- The Golden Gate Bridge landscape shows a nice horizon where the water meets the sky in the background, speeding cars on the bridge in the middle-ground and the huge bars that support the bridge in the foreground.

The key interactive elements the players come across on the Golden Gate Bridge are: speeding cars. The Golden Gate Bridge is a bonus environmental landscape to make the people believe that the game is taking place in the city of San Francisco. In this bonus landscape, players only have to evade the speeding cars and collect score bonuses as much as they can. This landscape is rare and does not occur as often as the City or the Rooftops.

8.1.1. Audible Layout

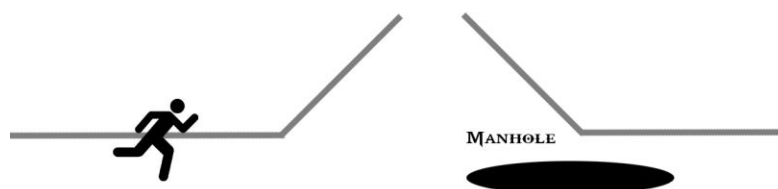
There are a few audible tracks the players would hear when they perform certain actions or trigger an event such as the special ability (See Audio in Game Mechanics). Some tracks are rare and require the players to either perform tricks and achieve a high trick chain or manipulate strategically to change their character stage. These tracks are also accompanied by visual words on the screen of what the tracks would sound like and the reason they serve in the game would be excessive immersion for the players.



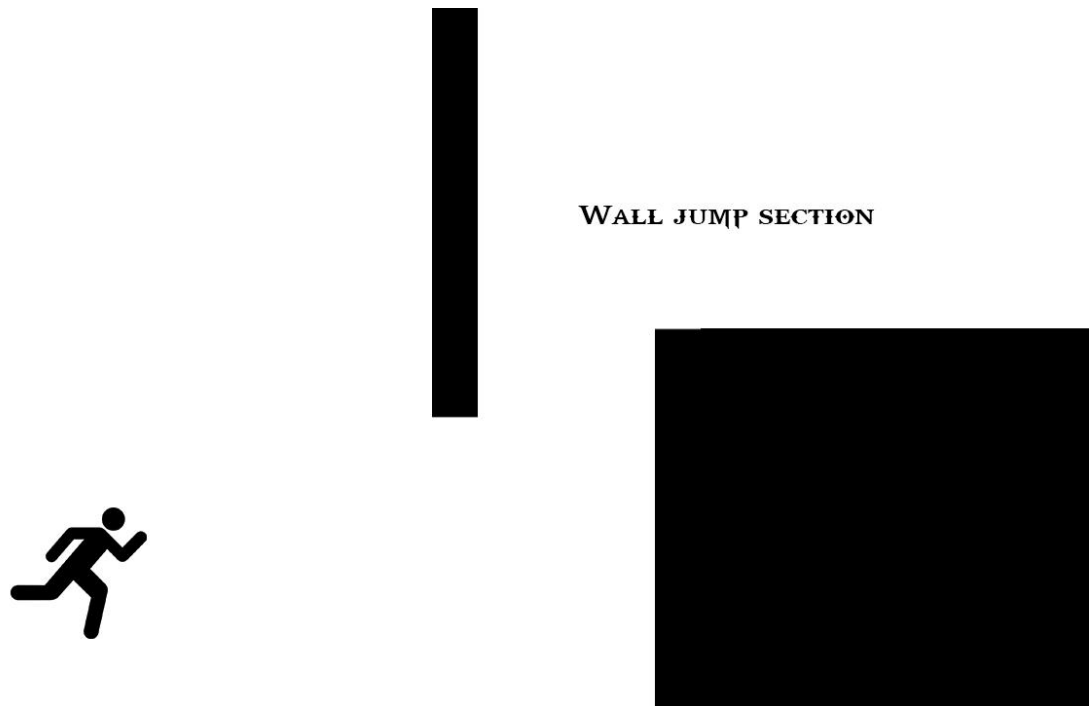
In the example above, the “Faaat Burner!” audible is also shown on the screen whenever it is triggered (when players activate the special ability every 3rd time). In the same way, each audible has its own colour composition and will be displayed on the screen whenever they are triggered by the events performed by the player.

8.2. Obstacles

The obstacles the players come across vary with the level they are currently in. Also, the obstacles that are designed for the character stages vary with the levels. The obstacles and their collision functions remain the same through all the levels but only their visual appearances change.



The figure above shows an example of the game ending obstacle in the City level, the manhole. When the character falls into this obstacle, the game immediately ends triggering the gameover screen.



The figure above shows an example of the wall jump sections the players will come across when the character is in the Muscle stage. This stage enables the players to perform tricks to gain bonus score for their run, and the wall jump is one such obstacle to perform tricks.

Similarly, each level has obstacles designed for each stage of the character. The diagrams are prototypes of the obstacles and their function and are not how the obstacles in the stage would look like. The obstacles will be visually enhanced for each level and mechanically adjusted for every character stage.

Note: The players will always come across obstacles that can be overcome by the current stage of the character they are running in.

8.3. Power-ups, Power-downs and Pickups

The power-ups, power-downs and the pickups are small events that affect the character in the game. The power-ups and the pickups are positive events and the power-downs are negative events. The positive events help the players in their run and the negative events hinder the players in the run.

The power-ups are the pickups that make the character move to the leaner stages and the power-downs make it move to the fatter stage. The special pickups provide momentary bonus to the character and have a specialized effects when used in different stages.

Power-ups: The power-ups in the game include-

- Energy drinks
- Fruits and Vegetables
- Healthy meat
- Other high protein foods

The power-ups make the character lean. Each power-up makes the character leaner at different rates and the rate at which they appear in game depends on their rate of making the character lean. For example, the energy drinks make the character lean, faster; hence they will be **rare** to find in the game.

Power-downs: The power-downs in the game include-

- Pizzas
- Burgers
- Cakes
- Other unhygienic foods

The power-downs make the character fat. Each power-down makes the character fatter at different rates and the rate at which they appear in game depends on their rate of making the character fat. For example, the Pizzas make the character fat, faster; hence they will be **rare** to find in the game.

Special pickups: Special pickups are basically powers that provide momentary advantage to the character. Their importance, use and rarity affect the character stages differently. The special pickups include-

The Bicycle- This power allows the player to travel at maximum speed and can smash through obstacles for a little time.

The Pogo Stick- This power allows the player to jump higher and pick up bonuses and reach higher zones.

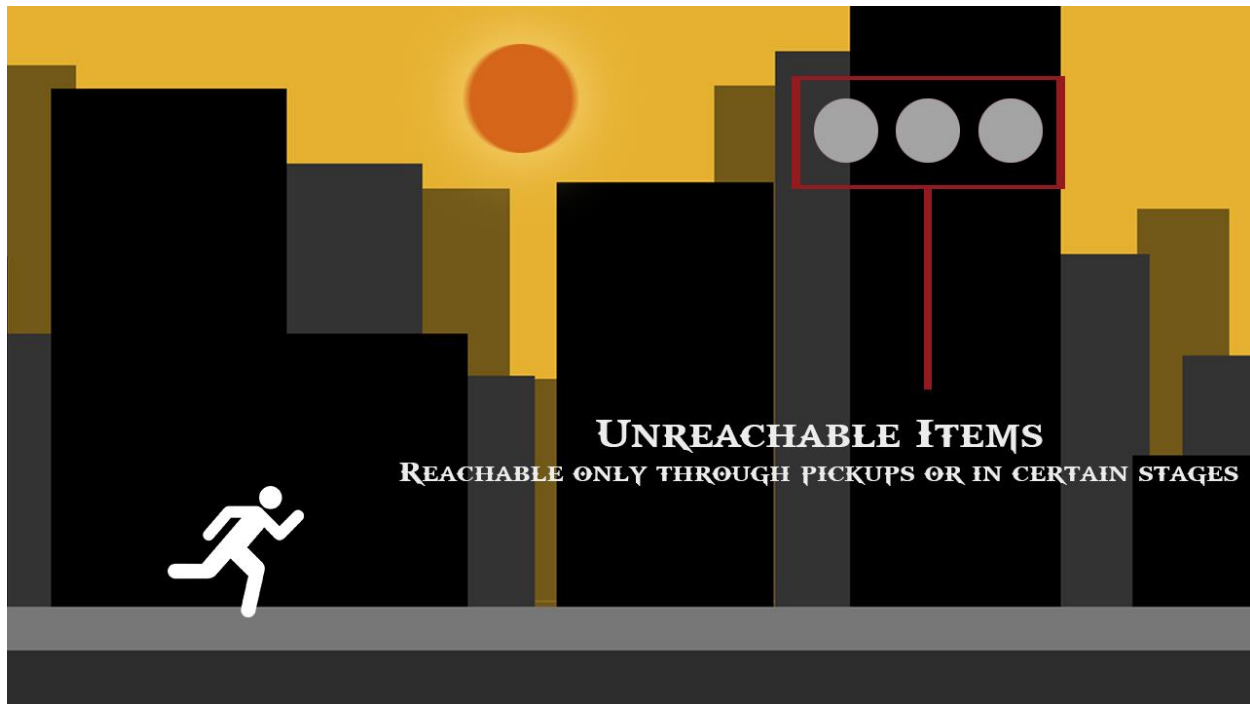
The Detoxifier- This power instantly changes the character stage to the average built stage.

8.3.1. Unreachable Bonus Pickups

Whenever the character is hopping on the pogo stick or is running in the Golden Gate Bridge stage, the players have access to the unreachable bonus pickups. These bonuses are always the positive event pickups which are further enhanced in their value.

For example, if the players come across pickups such as in-game currency, which give them **1x** in-game currency per pickup during the normal run; the unreachable areas in the game offer the players pickups ranging from **2x-4x** in value. Each pickup in the unreachable zones of the game is always greater than the pickups in the normal level.

Pickup value in unreachable zone > Pickup value in normal zone



Also, the probability of finding the rarest of the power-ups such as the Energy drinks is increased in the unreachable zone. Since these zones are only accessible through combination special pickups and character stages or in one of the rarest level of the game, these enhanced bonuses are provided for the players to boost their scores.

List of unreachable/rare zones in the game:

- Zones which can be reached through the pogo stick pickup.
- The Golden Gate Bridge.
- Zones which can be reached when players perform tricks in the muscle stage.
- Zones which can be reached by double jumping in the lean stage.

8.4. Goals and Achievements

Every run, the players have at least 3 **missions** in their *mission log* that they can choose to complete. After they successfully accomplish at least one mission, they are given another mission immediately that comes into effect immediately in the next runs. The players can choose to embark directly on completing the missions provided in Glutton Run and eventually build up rewards that help them in their runs further, ultimately helping them to achieve a better score (See Missions in Flow).

Note: In order to complete a mission, players simply have to follow the instructions of the mission and complete the appropriate tasks.

Players are provided with **daily missions**, which they can accomplish in every 24 hours' time range. These missions give the players temporary rewards that power their character for the entire day, narrowing the difficulty to achieve or set a highscore, but they expire if the players fail to complete them within the time range (24 hours) of the particular mission.

Achievements are set goals in the game which when completed players earn **stars** and are showcased in the Highscores screen. Each achievement is progressive, which means that the players need to perform the set actions to gain stars for that respective achievement. Every achievement has 3 stars that can be gained and earning every successive star is difficult than the previous.

Example of achievement:

Star 1 – Upgrade all pickups to level 3

Star 2 – Upgrade all pickups to level 4

Star 3 – Upgrade all pickups to level 5

The example above is an interpretation of one single achievement. Players earn stars for every completed segment of the achievement which are shown in the achievements menu. The total number of stars achieved by player is shown in a huge star in the achievements menu.



The list below shows the maxed out achievements (3 stars) that are slightly reduced for their previous levels (stars 1 and 2).

List of Achievements (3 stars):

- Use the special ability 100 times
- Perform 100 tricks in one run
- Collect 10,000 in-game currency in one run
- Use the Bicycle pickup 8 times in a single run
- Burn 50,000 calories in a single run

8.5. Narrative and Cinematic Storyboard

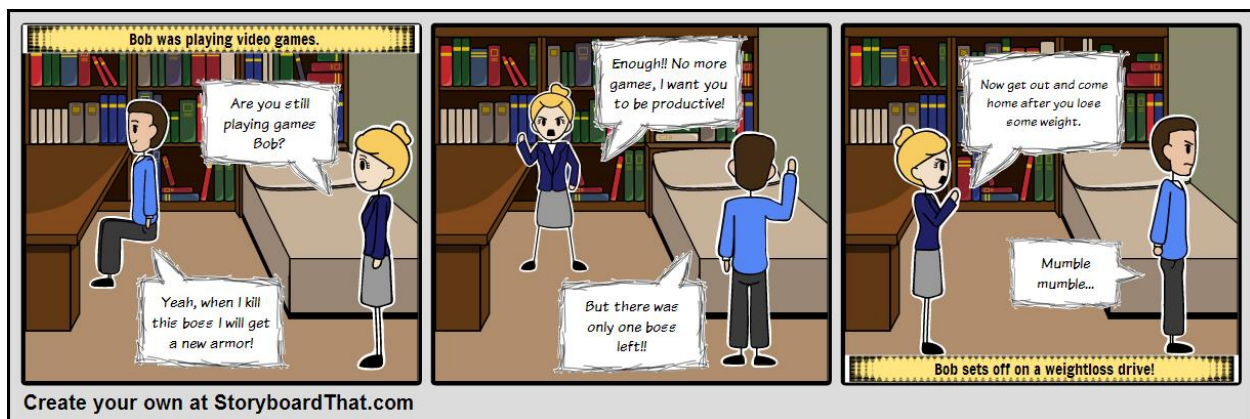
Glutton Run also has a small narrative to it. The game is made to create awareness to the people about the negative effects on health due to no exercise. So, a small background story supports this awareness concept in the game. The game's flow or the gameplay does not follow a certain narrative. It basically follows a runner theme where every run follows the same concept but a different challenge all the way through.

8.5.1 Storyboard

Bob McNally (player character), is a 22 year old adult who loves to play video games all day. He lives in an apartment in San Francisco, California along with his girlfriend Evangeline Serra. They both go to the same college and study the same subject, Geology.

Bob never does his homework and his grades reflect poor performance at college. Though Eve, who is hard working, tries to spare some time to help Bob with his college work, he still does not put forth any effort. One fine day, Eve decides to do it the hard way and tells Bob that she will only go forward in their relationship and marries him if he becomes more active, fit, responsible and energetic... Well, un-glutton himself.

Though Bob is lazy, gluttony and irresponsible in all ways, he loves Eve very much and respects her words. He tries in vain to exercise but he cannot. He then starts giving lame excuses to skip exercise which infuriates Eve. She then kicks him out of the house and that is how Bob starts his weight loss drive (the game).



The above storyboard is shown as a cinematic before the game starts. It is only shown to the players when the game is played for the first time. When the players touch the Title screen to start the game, this cinematic screen is shown before the Instructions screen when played for the first time.

⁵ Content made using external application in www.storyboardthat.com

8.5.2. Story Script

The story always takes place on the current day of the player playing the game. The location is Bob's bedroom in his apartment. He will be playing games while Eve enters.

Date: Current date when the player is playing the game.

Time: Current time when the player is playing the game.

Scene 1:

Location: Bob's Bedroom

Characters: Bob and Eve

After a tiring day from work, Eve returns home. As she enters Bob's bedroom to see what he is doing, she notices that he is playing video games.

Eve: "Are you still playing those stupid games Bob?"

Bob: "Oh wait, don't disturb. I am in the middle of killing a rare boss which gives me a cool armor!"

Eve gets angry, unplugs Bob's computer and starts yelling at him for his irresponsible behavior.

Eve: "Enough!! No more games. I want you to be more productive and responsible. And above all that, I want you to exercise and get in shape!"

Bob: "Aww, but there was only one boss left to kill."

Eve: "I said ENOUGH! Now get out and get working. Come back after you burn your gluttony fat and when you're fit or else I am calling this relationship off."

Bob: "Mumble mumble..."

Bob sets off on a weight-loss drive after being kicked out of his house by his girlfriend. He will then venture forth in the game as the main character trying to get into good shape by exercising and consuming healthy food and drinks. He will be challenged with different obstacles in the game.

At the end of each run, depending on how much score the players managed to achieve, Eve either goes mad at Bob or hugs him for his hard-work. The better the score, the nicer Eve behaves with Bob.

Happy Calorie Burning!!

Stay fit, stay Happy!

