# Milestone 1: Game Idea
# Fall For Me!

## Team Cicisoft

Andrea Solanas de Vicente

Ankur Deria

Michael Dey

Bendegúz Timár

# 1. Game Description

Our game **Fall For Me!** is a fusion of the platformer and fighting genres, drawing inspiration from popular titles like Super Smash Bros., Super Mario Bros., Brawlhalla or Stick Fight: the Game. In this local multiplayer arcade game, players team up to compete on an infinite roller coaster serving as a dynamic platform, complete with obstacles and collectible items that spawn along the track. Throughout the game the players need to collect as many items as possible and deposit them at the team's designated station for points. The stations appear at fixed intervals, alternating between teams. To hinder their opponents' progress, teams can knock their opponents off the roller coaster, causing them to lose their collected items. The players can only spawn at their respective base after they fall off the roller coaster. The team to collect and register the most collectibles wins. The game also offers a menu where players can customize the win conditions, like setting time limits or the number of collectibles needed to win.

## Context and Narrative

You are at the renowned Doomsday Land theme park, standing amidst the bustle of carnival games, thrilling rides, and delicious food stands. The air is electric with excitement as the screams of thrill-seekers fill your ears. You take a moment to soak it all in, feeling grateful for this opportunity to let loose and have fun.

Out of the blue the park's director, Archis Barchivald, announces that the park is closing down, much to the frustration of the visitors. As a means of distracting the angry crowd, Dr. Barchivald orders a shower of sweets to rain down from the sky.

In the midst of the chaos, you spot a vantage point on the coaster tracks that could give you an advantage in the sweet collection. Without a second thought, you climb into the nearest coaster car and begin to collect as many sweets as possible because who doesn't like free stuff.

In this bizarre adventure, you ride a roller coaster that goes through perilous twists and turns. You encounter obstacles and opponents trying to knock you off track and snatch your sweets. You must use your wits and quick reflexes to stay on course and gather as many sweets as possible. With the ride speeding up and the sweets raining down, the excitement reaches a fever pitch as you compete against your fellow passengers to be the ultimate sweet collector.

> The game befits the theme of the course by having the roller coaster as not just location to the game, but also as a central component that affects the gameplay greatly.

## Gameplay

The players form two teams. They ride an infinite roller coaster and aim to collect as many items as possible while dodging obstacles and other players. The coaster moves automatically. Stations respective to the teams appear in set time intervals, where the players of the team can

deposit their collected items. The stations appear alternating between the teams. The players can attack each other to push one away. If the player gets knocked off the roller coaster, they lose all their collected items that were not deposited before. The game goes on until a set win condition.

## Player mechanics

The players move left and right to reach collectible items but also to keep up with twists and turns of the roller coaster. Players can also jump to reach higher platforms or avoid obstacles, but while jumping, the player loses some momentum gained from the coaster. This makes the roller coaster leave the player a bit behind, therefore players must time their jumps carefully to avoid falling off or missing out on valuable items. To knock other players off the coaster, players have a punch mechanic. The players can deposit their collected items at their designated stations to earn points for their team.

## Roller coaster mechanics

The roller coaster will behave like a real one. It will slow down while moving up and pick up speed while moving down. It will have a fixed minimum speed. The track will consist of ups and downs (and loops, being part of the desirable target). The roller coaster never stops, even if it reaches the base of a team. The players need to jump to their base and then jump back on the roller coaster after registering their collectibles. The momentum of the roller coaster would carry on to the players (high target).

## Concept art

### Gameplay

We did a few sketches of what we wanted the main gameplay to look like without much detail. In the first sketch, the general gameplay can be seen, showing the rollercoaster as the base for the characters to jump on and move. There are also some collectibles on the screen which the characters are trying to obtain. We added respective huds to the corners of the screen so the players could see what number of collectibles each character has, with the overall sum of the collectibles collected and dropped off in the bases being at the top of the screen.
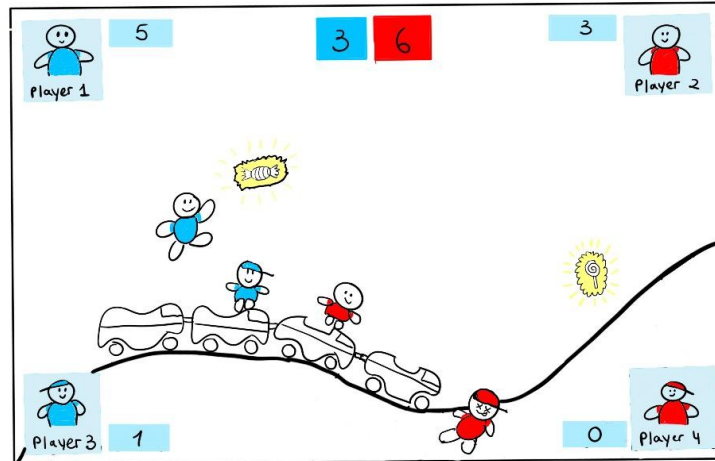
In the second design we added an example of what a base could look like and how the characters can drop off the collectibles. To show how the players can push each other off the rollercoaster we added it in this sketch as well.
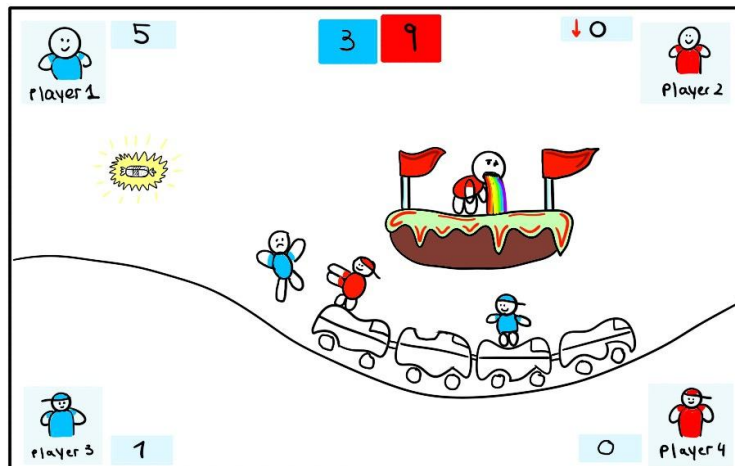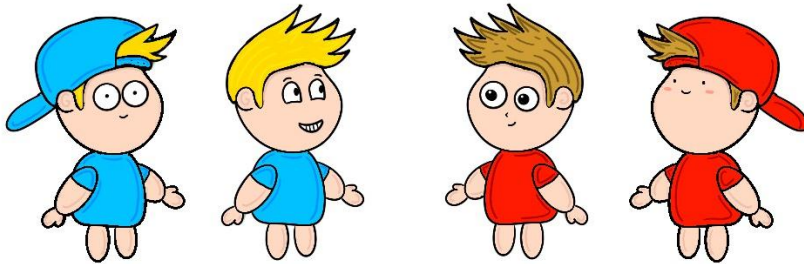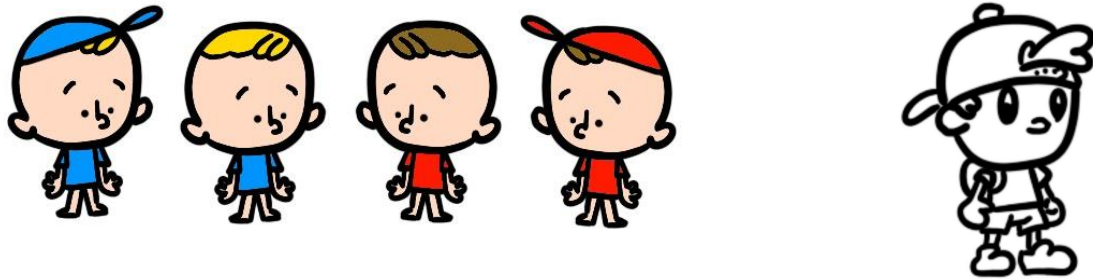


## Characters

We did the basic design of what the characters and how the screen would look like. Later on we started designing more in depth what the characters` style would be like. We did multiple options of sketches to have different ideas to choose from.
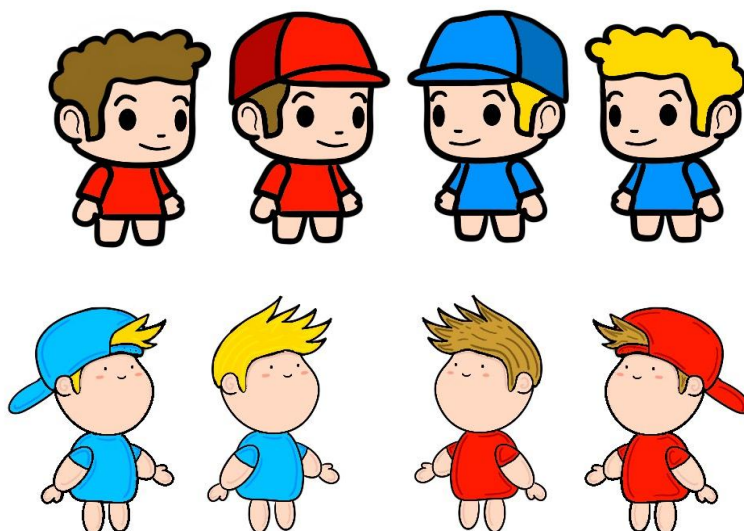


For the different characters, we followed the same idea of two different teams (red and blue). There had to be key differences between them, like the hair color or their shirt color, so they are easy to see on the screen. Also, we decided to do the same character but with different elements (like adding a cap

for the second player of each team). Here are some of the different designs we thought of.

## Bases

For the bases, we thought of making them similar except for the color. Each team has a specific base where they can drop off their collectibles. This is why the colors are what identify both bases from each other. We also thought of adding a characteristic component like a flag or house to symbolize that this object is a base.

In some of the designs, we tried different features to see which one would look better.
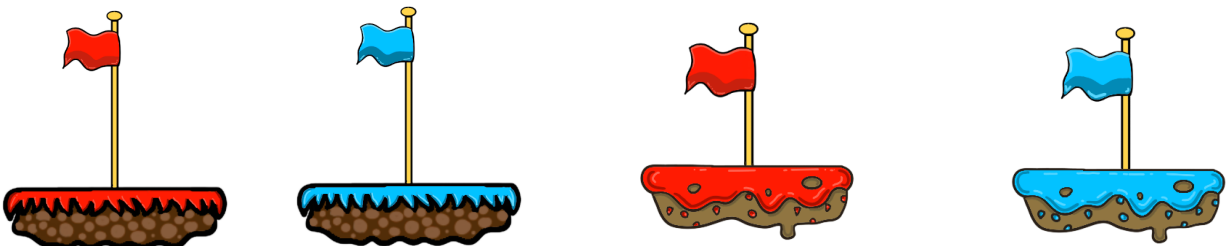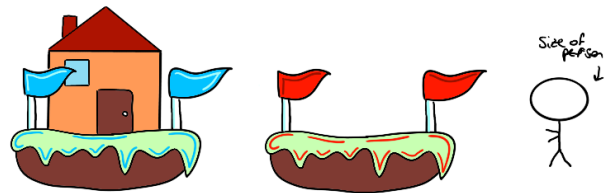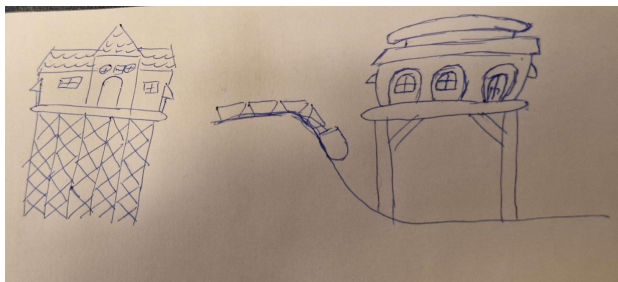
## Collectibles

For the collectibles we thought, since we are in an amusement park, the food you usually get there is candy. Also, the main characters that the players can use are little kids and they love candy. We did a few sketches and colors for what we want the items to look like.
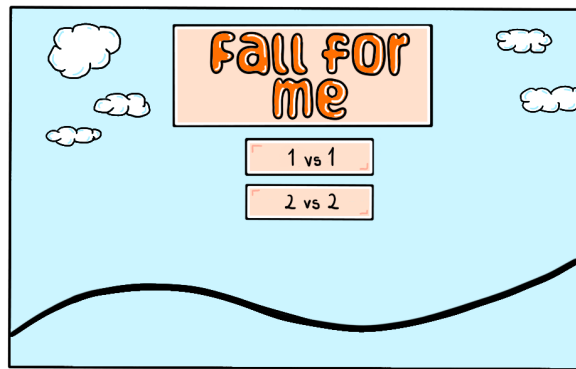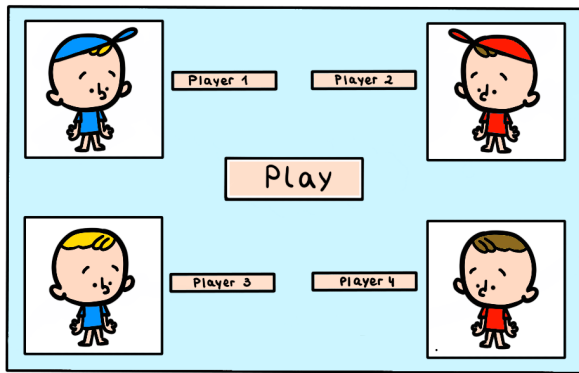
## Main Menu

We also did very quick sketches of what the main menu or the choosing of characters' screen might look like. It will probably change in terms of design, but we wanted to get some idea of what it might look like.

## Roller coaster

For the design of the rollercoaster, we needed something that would serve as a base for the players. It also can't clash with the colors of the teams. We designed a few sketches for what it could look like and different colors we could do.

The track will be composed of a line (more likely brown) so that the roller coaster can lay on top of it and move according to it.

# 2. Technical Achievement

The technical achievement that we have decided to implement into our game is procedural generation. Procedural generation is a computer algorithm that can automatically create content by using a set of pre-written rules. It can either generate everything from scratch or combine hand-crafted assets in an indefinite loop. In our case, we will use this to generate the roller coaster track while playing the game.

The game starts with a set of basic coaster segments, such as straight sections, curves and loops. These segments have different properties, such as length, angle, and direction. Obstacles, islands and bases are added sporadically as well. The game randomly selects segments from this set and combines them to create the track for the roller coaster. For example, the game may start with a straight section, then add a curve, then a loop, and so on.

To ensure that the track is always navigable and doesn't have impossible or dangerous sections, the game uses procedural constraints to guide the segment combination. For example, the game ensures that the coaster always has a certain minimum height, a maximum drop angle, and a minimum radius for each curve.

To make each play through unique, the game uses a seed value to generate a random number sequence. This sequence determines the order and selection of the coaster segments.

## 3. Big Idea, "Bulls-eye"



Procedural generation of roller coaster track

Teamfight on a 2D Roller Coaster
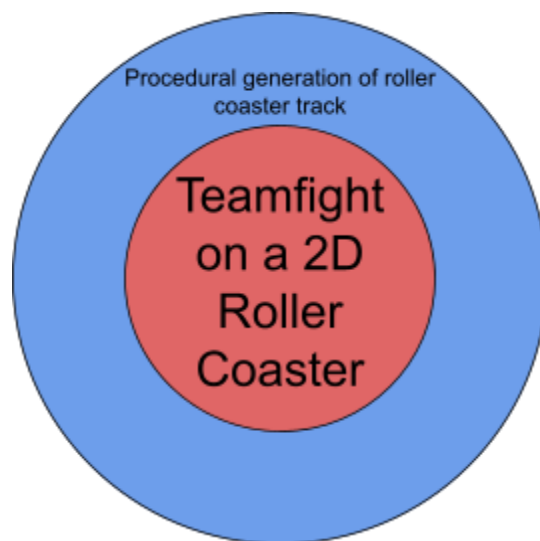
The core of our game combines fast-paced item collecting with fighting, where players are separated into two teams and have to obtain a number of collectables higher than the opposite team. All of this while being on top of a roller coaster. The players can push each other off the rollercoaster to make their opponents lose the collectables they have obtained before going to their base to drop off their own.

Our main technical achievement will be procedural roller coaster generation. To begin with, we make a small segment of the track and spawn it multiple times outside the view of the player. We merge those segments to form a track. Depending on the position and rotation of the segments, it can be made to look like the track is going up or down. The position of the segment can be decided based on a noise pattern (Perlin noise for example) or a combination of different noise patterns. The rotation can be adjusted according to the position of the previous segment. We can also make large custom segments of the track and spawn it, for example - a looping track.

## 4. Development Schedule

### Task List

#### Artwork

- Characters design
- Background images
- Character animation

- Intro animation
- Ending animation
- Menu design

- Menu background
- Head up display artwork
- Bases
- Sound
    - Music and SFX

- Compose Music
- Select / create SFX

## Programming

- Character controlling
    - Movement (moving, jumping)
    - Interaction with collectibles (pick up, drop at base)
    - Interaction with other players (colliding, punching)
    - Dying and Respawn
- Roller coaster
    - Roller coaster movement
    - Track segmentation
- Effect of roller coaster on players
- Procedural generation of track
    - Base spawning
    - Platforms spawning
- UX
    - Head up display
    - Menu implementation

# Layers

## FUNCTIONAL MINIMUM
- 1 vs 1
- Simple Roller Coaster
- Collect collectibles

## LOW TARGET
- Bases & collectibles
- Procedurally generated track
- Simple Menu (start, exit...)
- Simple Music

## DESIRABLE TARGET
- Fighting (Punch button)
- Obstacles and Islands
- Main Menu (Game Modes,...)
- Background Images

## HIGH TARGET
- Animations, Sounds
- Stupid AI
- Momentum on players
- Skills, more attacks, earning collectibles in a different way
- Power ups
- Custom Music
- Custom Sound effects
- Sound mixing
- Settings (Audio, Graphics, Game Play)

## EXTRAS
- AI
- Settings (Graphics, Controls)
- Easter Eggs
- Day-night cycle
- Animated procedural textures

# Timeline
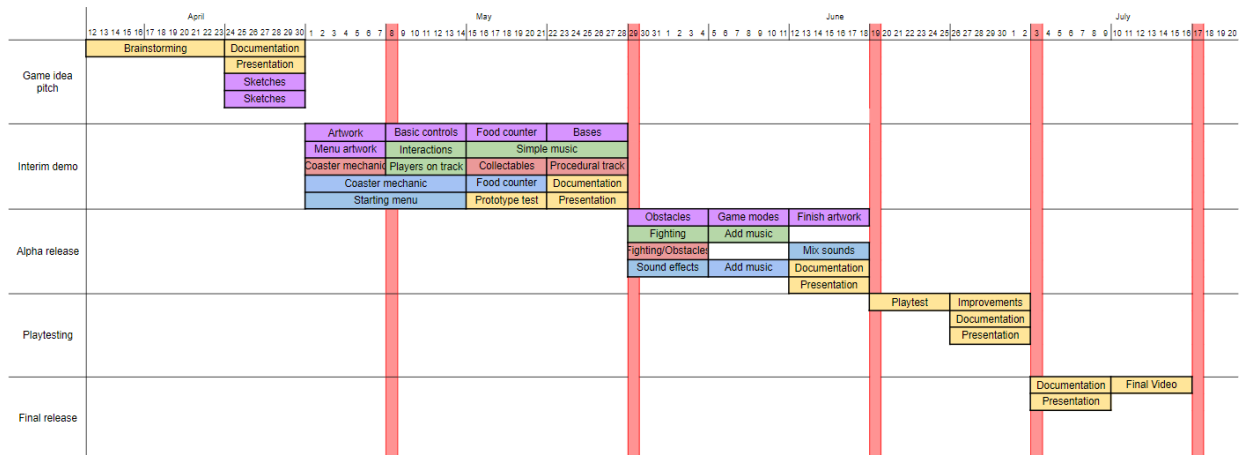
# Milestones

## 1. Game idea pitch

| Week | Goal | Tasks | Assigned to | Hours expected | Actual hours |
|---|---|---|---|---|---|
| Week 1: 10.04 - 16.04 | Brainstorming | Research | All | 5 | 5 |
| | | Miro Board with ideas | All | 2 | 2 |
| Week 2: 17.04 - 23.04 | Choose an idea | Gather all ideas and decide on one | All | 3 | 5-6 |
| Week 3: 24.04 - 30.04 | Milestone 1 documentation | Sketches | Andrea, Bende | 8-9 | 10 |
| | | Document | All | 3 | 5 |
| | | Presentation | Ankur, Mischa | 5 | 4 |

## 2. Interim demo

| Week | Goal | Tasks | Assigned to | Hours expected | Actual hours |
|---|---|---|---|---|---|
| Week 4: 01.05 - 07.05 | Artwork | Basic character & collectables | Andrea | 10-15 | 12 |
| | | Basic rollercoaster | Andrea | 5 | 2 |
| | | Simple menu artwork | Andrea | 3 | 3 |
| | Roller coaster mechanics | Moving roller coaster | Ankur, Mischa | 10-12 | |
| | Simple Menu | Start of game | Mischa | 2 | |
| Week 5: 08.05 - 14.05 | Character mechanics | Basic controls | Andrea | 10-15 | |
| | | Interaction of characters | Bende | 15 | |
| | | Characters on roller coaster | Bende | 12 | |
| Week 6: 15.05 - 21.05 | Collectables | Availability to collect | Ankur | 2 | |
| | HUD | Food Counter | Mischa, Andrea | 6 | |
| | Simple music | Gameplay track | Bende | 6-8 | |
| | Prototype | Finish and test | All | 6 | |
| Week 7: 22.05 - | Adding new game | Bases (make | Andrea | 5 | |

| | | | | | |
|---|---|---|---|---|---|
| 28.05 | mechanics | artwork) | | | |
| | | Procedural track | Ankur | 10-12 | |
| | Simple music | Menu track, Game over track | Bende | 6-8 | |
| | Milestone 2 documentation | Document | All | 4 | |
| | | Presentation | All | 5 | |

## 3. Alpha release

| Week | Goal | Tasks | Assigned to | Hours expected | Actual hours |
|---|---|---|---|---|---|
| Week 8: 29.05 - 04.06 | Desirable Target mechanics | Fighting | Ankur, Bende | 5-6 | |
| | | Obstacles | Ankur, Andrea | 10-15 | |
| | | Add sound effects | Mischa | 8 | |
| Week 9: 05.06 - 11.06 | Main menu | Artwork and different game modes | Andrea | 5 | |
| | Sound | Add Music | Mischa, Bende | 2 | |
| Week 10: 12.06 - 18.06 | Background artwork | Finish other artwork missing | Andrea | 10 | |
| | Sound | Mix Sound | Mischa | 3 | |
| | Milestone 3 documentation | Presentation | All | 5 | |
| | | Document | All | 4 | |

## 4. Playtesting

| Week | Goal | Tasks | Assigned to | Hours expected | Actual hours |
|---|---|---|---|---|---|
| Week 11: 19.06 - 25.06 | Playtest | Prepare playtest sessions | All | 10 | |
| | | Arrange sessions | All | 20 | |
| Week 12: 26.06 - 02.07 | Add improvements | Feedback from playtesting and improvements | All | 10-15 | |
| | Milestone 4 documentation | Presentation | All | 5 | |
| | | Document | All | 4 | |

## 5. Final release

| Week | Goal | Tasks | Assigned to | Hours expected | Actual hours |
|------|------|-------|-------------|----------------|--------------|
| Week 13: 03.07 - 09.07 | Milestone 5 documentation | Document | All | 6 | |
| | | Demo presentation | All | 5 | |
| Week 14: 10.07 - 16.07 | Final video | Prepare video and editing | All | 10 | |

# 5. Assessment

The major strength of the game is combining a fast-paced combat system with the collecting aspect and the platformer aspect. The fighting is simple and therefore easy to learn, letting even newcomers enjoy the game from the start. They can be further helped by a more experienced team member. The aim of the game is also easily understandable, as games revolving around collecting and dropping off items have been around for a long time, such as capturing the flag modes or escort missions. The procedural generation will keep even experienced players on their toes, as they not only need to defend themselves from other players but also keep an eye on the track and for possible obstacles lest they fall off. There is a strategic part of the game as well because of the collection of the items as a team and registering them at their respective bases, which only spawn alternatively.

The game is inspired by games such as Super Smash Bros., Super Mario Bros., Brawlhalla or Stick Fight: the Game. In such games, tight controls and natural feeling movement are the most important aspects, thus these are the criteria playing the biggest role in our game. Another point is making the procedural generation suitable for such a control scheme, so it compliments the fact that the players are restricted to simple movements.