



SUTD Fiesta

Weally Nice

Tan Xiang Hao	1002746
Danial Aqil	1002660
Tan You	1002690
Kang Tae Woong	1002854
Zhou Enna	1002869
Zhu Dan	1002994

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50.033 Game Design & Development

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Introduction

Our PC video game, SUTD Fiesta, is a party-like casual game similar to games like Mario-Party, with mini-games more similar to WarioWare and Bishi Bashi Special. In our video game, played on the computer, there will be up to 4 players competing, and they will play against each other in a set of 3 SUTD themed mini-games, like having good timing in order to log into myportal and bid for their modules as fast as possible! The player who wins the most points in the end of the 3 minigames is crowned the champion!

Background Study

We wanted to make a video game that is both fun to play and something that we can easily split the work among ourselves. In looking at various minigame types, we settled on party games, as party games involve many smaller mini-games, which we can easily work on separately.

Similar Games



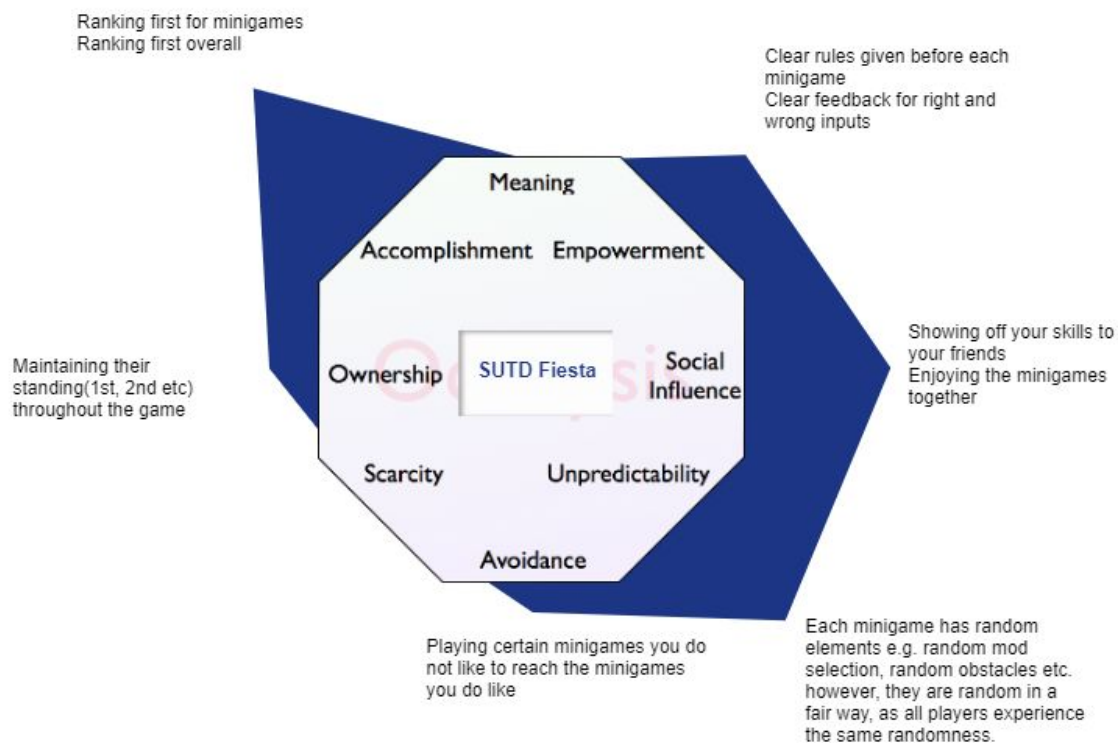
The most popular casual party game is Mario-Party. The main gimmick of all Mario-Party games is that players compete with each other in mini-games to score points and coins. What makes many of the mini-games special is that they are very themed to the mario franchise. For

example, there is one mini-game where players have to collect as many coins as possible from a Lakitu throwing them, reminding players of Super Mario Bros.

Selling Points

In the same theme, our minigames for our game will be themed around SUTD life, and will be played by SUTD students. For example, one part of SUTD life is to book modules for your next term classes, and people have to book their mods ASAP, if not they will lost. Thus, we have a minigame where players compete against one another to book mods first, reminding players in a light-hearted way the life of an SUTD student.

Core Drive



Gameplay Mechanics

Objectives

Each player (up to 4 max) will progress through 3 mini games to play. Each mini game will have different mechanics and they have to understand them to try and beat other players to win the mini games. The overall winner is the one with the most points at the end of the 3 minigames!

Game Progression

Players start with 0 points and

Formal Elements

Available player modes

Multplayer 1-4 players: playing all 3 minigames

Procedures

Each player joins the game by pressing a button on their controller to join. Then players will start playing each game

BookYourModASAP

Each player is assigned to a 'Browser' and they have to book 8 randomly chosen mods as fast as possible. The 1st player who gets all 8 mods will get 4 points, 2nd will get 3 points, 3rd will get 2 points and 4th will get one point.

Canteen

Each player will control a character. The first player who presses a button that is relevant to the game will become player 1 which is located at the top. The second person that presses the relevant button will become player 2 which is just below player 1, and so on. All players will have default moving speed, and they will move faster depending on how fast they press left and right buttons continuously on their controllers. Also, they have to press 'interact' button to jump over obstacles and reach the goal as fast as possible. If they are hit by obstacles, they will get knocked back. The winner of the race will get 4 points, the second player to reach the goal will get 3 points, the third player will get 2 points and the last one will get 1 point. If there are no

connections or have less than 4 players, those characters without players will move at default speed, ignoring all collisions.

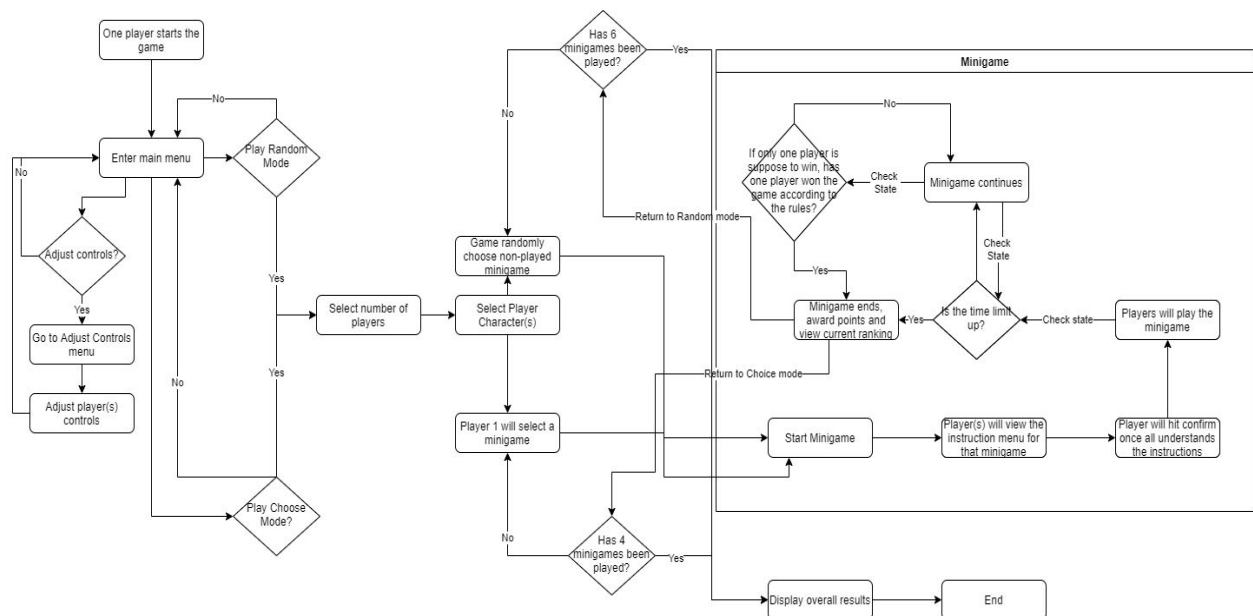
Fablab

Each player has to collect items to gain points. There are items that award points, and items that deduct points and they are based on what is allowed inside the Fablab in SUTD. The first player will be the one with the most points, and so on.

Player Controls

1. User Interface: D-pad or WASD to move your selection, interact or 'f' to select.
2. BookYourModASAP: D-pad or WASD to move your selection of mod, interact or 'f' to select mod and play the timing minigame
3. Canteen: D-pad (Only left and right buttons) or A,D buttons of keyboard to increase speed of characters, interact to jump.
4. Fablab: D-pad or WASD to move your player.

Game Rules

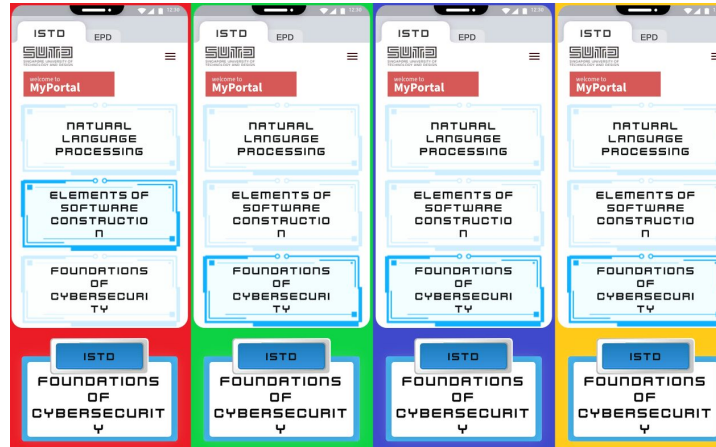


Overall rules:

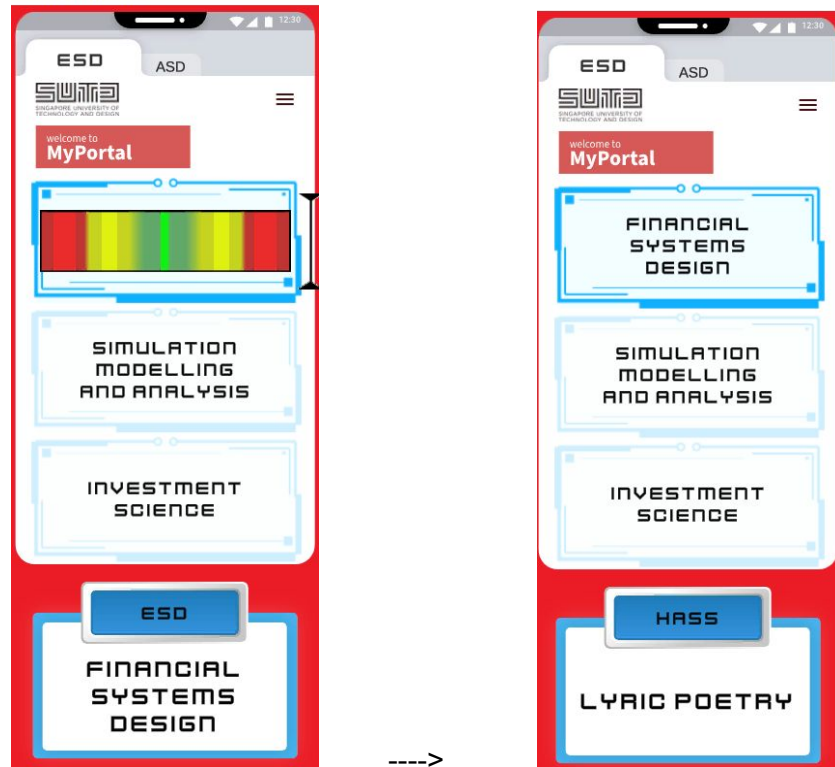
1. Any player can choose to start the minigame
2. Instructions will be shown on the screen for the minigame
3. Players will play the minigame according to the instructions
4. Players will then be shown the ranking of each minigame, and earn points accordingly
5. Repeat 2-4 until all minigames are exhausted
6. Winner will be announced!

BookYourModASAP

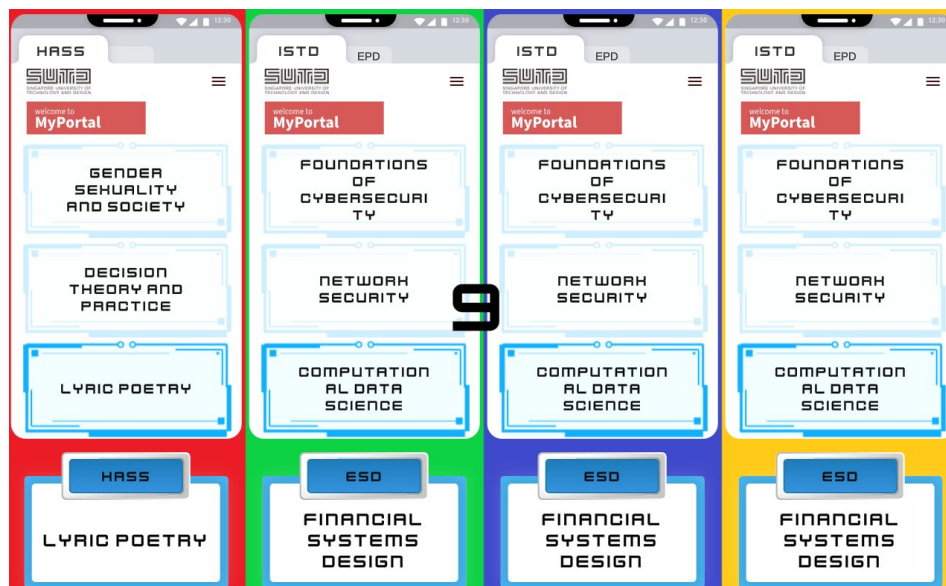
1. Each player is assigned to a 'browser' on the screen, with player 1 on the left, to player 4 on the right.



2. An initial countdown of 3 seconds will time the players into preparing themselves.
3. All players will be given the same set of randomly assigned mods from different pillars. 8 Mods will be chosen this way.
4. Pillars are placed in 'browser tabs' in the browser, in the order from: "ISTD, EPD, ESD, ASD, HASS". These tabs are not randomized. The player moves between tabs using the 'LEFT' and 'RIGHT' action of their controls, either the d-pad or 'A' and 'D'
5. The mods in each pillar, however, are randomized. All the randomly assigned mods will be available, but other mods are randomly filled from a list. The mods selection is moved using the 'UP' and 'DOWN' action, either using the d-pad, or 'W' and 'S'.
6. When the wrong mod is selected, an 'ERROR' sound will play, indicating to the player that they selected the wrong mod.
7. When the right mod is selected, the player will then need to play a timing minigame, where the player will need to time a series of button presses. The mod will be successfully selected when all of the button presses are timed correctly.

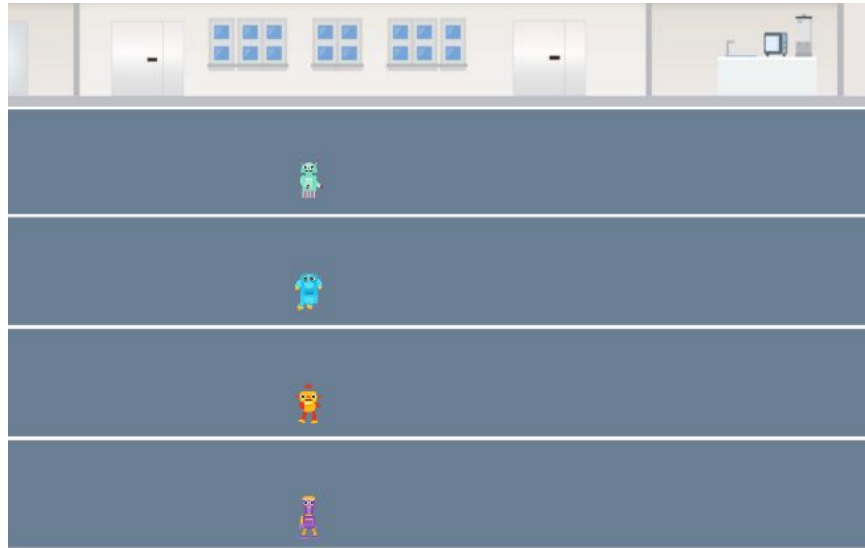


8. The first player will successfully books all 8 mods will start a 10 second countdown, where the other players have to try and book as many mods as they can before the countdown is up:



9. Once the countdown is up, a scoreboard of who is 1st, 2nd, 3rd or 4th will appear, and the result plus score will be transferred to the main scene to tally.

Canteen



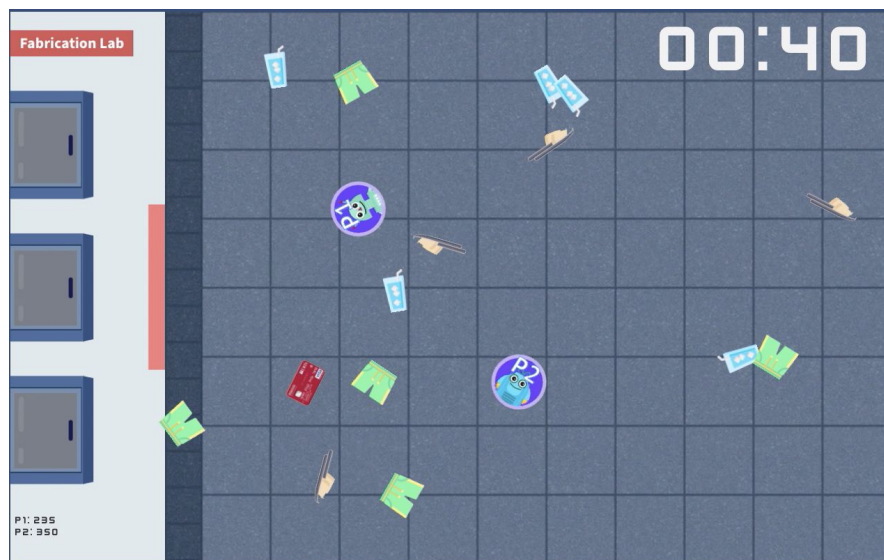
1. Each player is spawned from the beginning. The first player to press controller's buttons that are relevant to the game will be assigned to player 1 which is placed at top, the second player to do so will be assigned to player 2 which is below player 1, and so on.
2. Players will move at default speed when nothing is pressed. To move faster, layers will continuously and repeatedly to move faster as speed and speed of pressing buttons.



3. When the players encounter obstacles, they 'interact' to jump over the obstacles.



4. If they get hit by the obstacles, players will get knocked back by a certain distance, which also allows them some distance and time to jump over obstacles again.
5. If there is no connection for some of the players or there are less than 4 players, the characters without players will move automatically at default speed, without colliding with any obstacles.
6. As the first player reaches the finishing line which is SUTD canteen, the music will be played and after all 4 players reach the canteen, scoreboard will appear. First player will get 4 points, the second will get 3 points, and so on.

Fablab



1. Each player is spawned at the beginning of the game. All players have 90 seconds to collect as many items as possible to gain points and win the game.
2. Some items will either deduct or increase your scores.
3. The table below shows the type of pickups and the amount of points they contribute to the players' scores.

No.	Pickup	Sprite	Type	Points
-----	--------	--------	------	--------

1	SUTD Card		Good	+120
2	Long Pants		Good	+60
3	Jeans		Good	+45
4	Sneakers		Good	+25
5	Shorts		Bad	-35
6	Heels		Bad	-30
7	Drink		Bad	-20
8	Skirt		Bad	-20
9	Slippers		Bad	-10

- The players can crash into each other if needed to force them to collect the 'bad' items, or move them out of the way to collect 'good' items.
- The positions of the players are based on the amount of points they got, thus the player with the most points is placed first.

Level design

1. BookYourModASAP: The level design is a device that displays an internet browser for each player. The tabs of this internet browser are the different pillars on MyPortal.
2. Canteen: The level design is the running ground and scrolling backgrounds. Running ground resembles the colour and texture of SUTD's buildings' grounds. Also, the scrolling background looks the same as SUTD's building 1, as it has features such as windows, lifts and others that look the same as those of SUTD's building. Lastly, the scrolling background changes towards the finishing line, which resembles SUTD's canteen which includes most of the actual stalls in the canteen.
3. Fablab: The level design is the floor plan of the FabLab in SUTD. The boundary of the playing area is the perimeter of the floor plan.

Game Balance & Asymmetry

1. BookYourModASAP: All players are given the same set of randomly selected mods, so that it is fair for all players.
2. Canteen
3. Fablab:
 - Balance is ensured by the fact that the spawn times of the pickups correspond to how many points the add/deduct. In essence, items that add/deduct more points are spawned less regularly.
 - Balance is also ensured by how the physics of the players are consistent throughout the game and does not benefit any player.
 - Asymmetry is ensured by the fact that the pickups are spawned randomly across the map; the spawn locations may benefit certain players at different points of the game.

Boundaries

1. BookYourModASAP: The players can only control his/her browser.
2. Canteen: Each player is bound by his 'track'.
3. Fablab: The boundaries are the screen dimensions, and you can collide with other players.

Outcome

1. BookYourModASAP: The fastest player will win the minigame.
2. Canteen: The fastest player will win the minigame, with the ability to dodge well..
3. Fablab: The player with the highest score will win the minigame.

User Testing

To test our game, some of the team members got their own friends who are either still studying in SUTD or have graduated from SUTD to try out the game. In total, there were 4 users who made up the testing group. To abide by safe distancing measures implemented by the Singapore government due to the current COVID-19 pandemic, we arranged for a one on one session with each participant. Hence, the full extent of the 4-player multiplayer game was not tested. The details of the test user group is as shown below:

First Name	Age	Occupation	Gaming Habits
Shu Qi	22	Student	Casual
Irfan	24	Student	Plays games regularly
Endy	27	Trainer (Graduated)	Casual
Zhong	25	Student	Casual

Testing

Feedback:

Shu Qi: She noted that the game is cute and it reflected how the game can be quite fun. However, some of the game mechanics were unclear to her as **there were no instructions** given before each game.

Irfan: He liked the game, but he noted that there could be more minigames. Also, some of the **game mechanics were not intuitive** and had to be explained to him.

Endy: He wishes the games were longer. The games would probably be much more fun with more people playing. There also needs to be a way to **display the steps to be taken** to play the game.

Zhong: The game felt quite boring as there was no sound for every action. The concept of the game is really fun, and could be expanded on further with more minigames.

Overall findings: Almost all of the test users noted that there should be some sort of an instruction screen before each game is played to serve as instructions on the game mechanics of each minigame. There should be sound assets for all the interactions in the game to make

the game more fun. For future improvements, more minigames could be added. We added an instructions scene before each game after the feedback that was given. We also made sure that all the necessary assets were added to the game.

Future Improvements

For future improvements, we hope to add more different minigames so that players will have a different experience playing our game. Having more minigames will allow us to make more different game modes. For example, Bishi Bashi has a 'Tower mode', where players progress through the majority of the minigames, but the games get harder and harder after each subsequent game. Such a mode will give players who want more of a challenge a chance to show off their skills.

More minigames can be created. Some of our user test group participants would like to have more minigames created for the game.

Because the game is not computationally heavy and is relatively simple, another future improvement would be to develop the game with multiplayer over network. Because we could only play with one of each of our test user group participants at any one time due to social distancing measures, having multiplayer over the internet could enable us to play with/against more people.

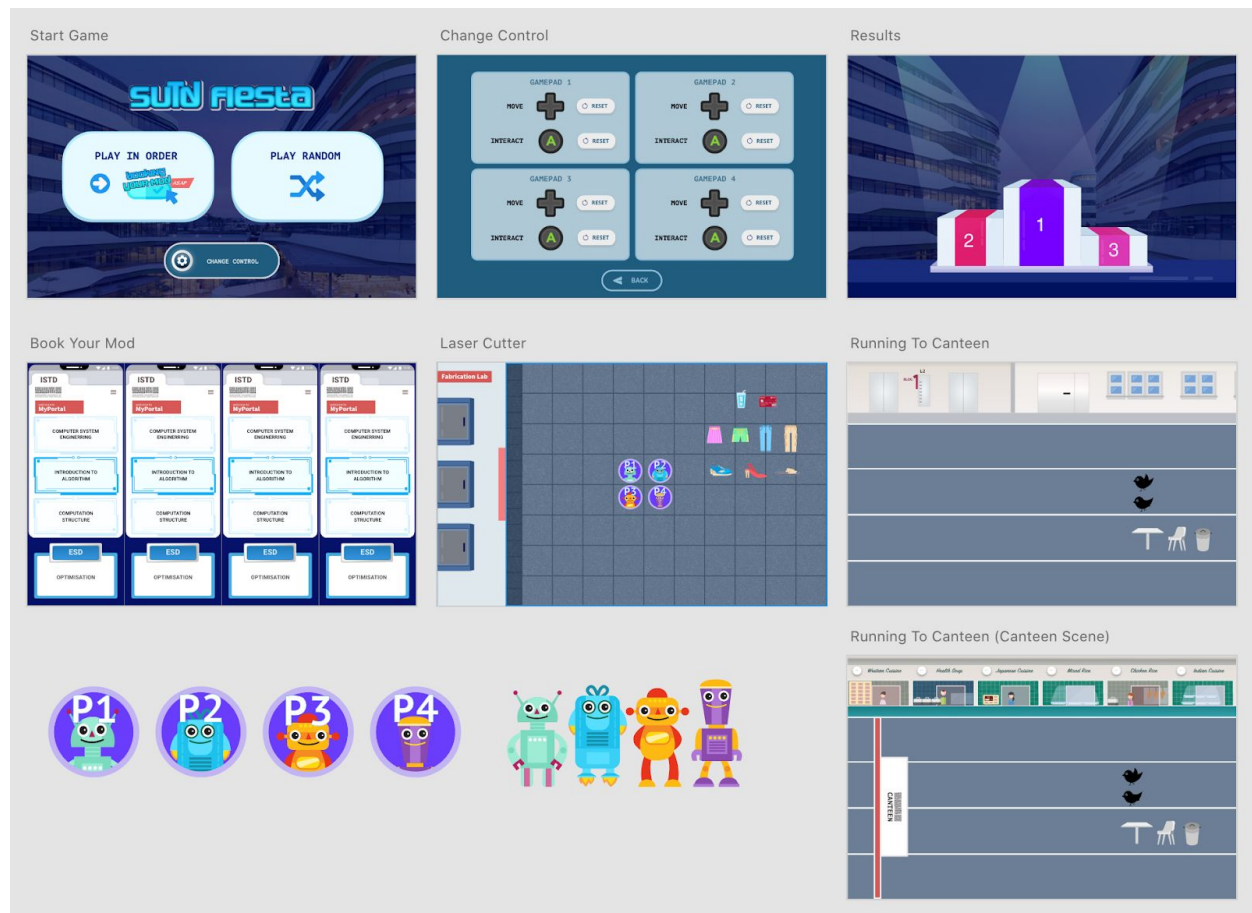
Certain tweaks can also be made to our minigames. For instance, the minigame difficulty could also be changeable for different types of players. The controls should also be able to be customised according to the preferences of the different players.

Assets

Technical Assets statistics



Visual (2D/3D)

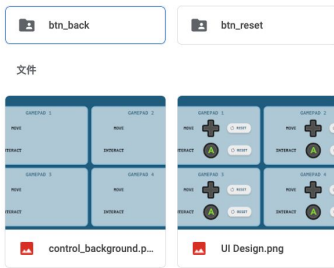


General User Interface

Control Scene:

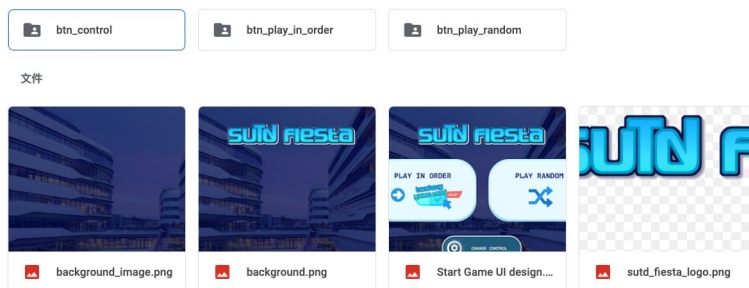
- Background with 4 gamepads
- Button to go back to menu
 - Default
 - Pressed
- Button to reset

- Default
- Pressed



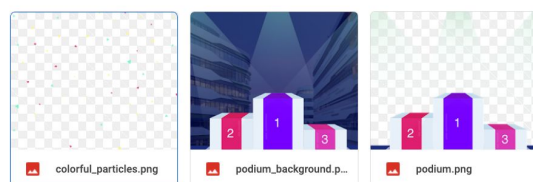
Menu Scene:

- SUTD background
- Game Title Logo
- Button to play in order:
 - Default
 - Selected
 - Pressed
- Button to play random:
 - Default
 - Selected
 - Pressed
- Button to go to Control Scene:
 - Default
 - Selected
 - Pressed



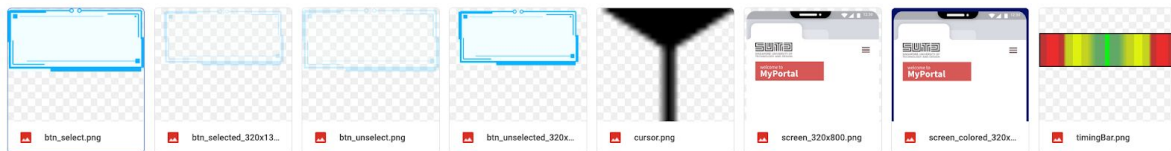
Result Scene:

- Particles for move-down animation
- Podium (both standalone and full background available)



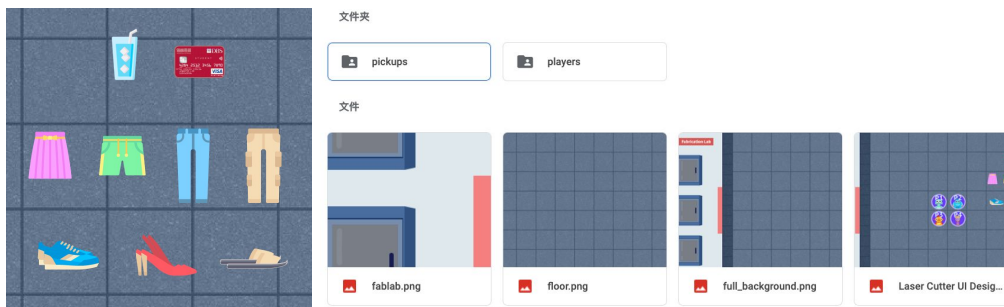
Minigame 1: BookYourModASAP

- ¼ background:
 - Iphone screen with book mod website content
 - Goal Pad
- Timing bar
- Line Cursor
- Button to select mod
 - selected
 - Unselected



Minigame 2: LaserCutter

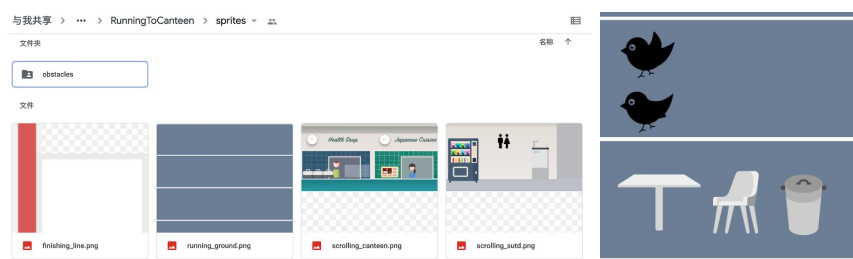
- Pickups (10): soft drink (1), SUTD card (1), skirt (1), short (1), pants (2), covered shoe (1), high heels (1), slippers (1)
- Fablab Image
- Playground
- Player bubbles (4): P1, P2, P3, P4



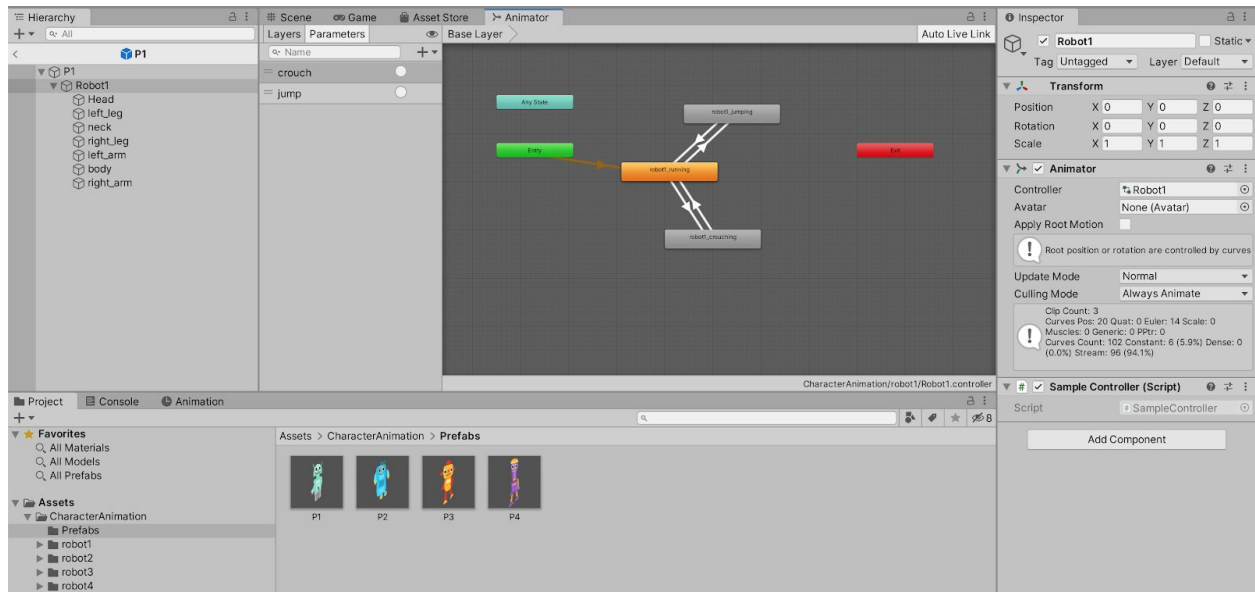
Minigame 3: RunningToCanteen

- Parallax Scrolling background(2):
 - Route to canteen (repeatable long image): showing lift, classroom, pantry, vending machine, water cooler, toilet, lockers etc.

- In the canteen (repeatable, for use after crossing finishing line): showing stores such as health soup, chicken rice, japanese cuisine, indian cuisine etc.
- Running ground with 4 lanes
- Canteen finishing line
- Obstacles:
 - black bird (2 forms for flapping animation)
 - Chair
 - Table
 - Trash can



- Runner animations:
 - Running
 - Crouching
 - Jumping



Sound

General User Interface

- Start button click sound (2)
- Button click sound (2)
- Background music (1)

Minigame 1: BookYourModASAP

- Miss cursor (2)
- Select mod (1)
- Success hit (4)
- Tab switching (1)
- Background music (1)



Minigame 2: LaserCutter

- Positive pickup (1)
- Negative pickup (3)
- Player collision (3)
- Background music (2)

Minigame 3: RunningToCanteen

- Hit obstacle (bird / metal) (2)
- Reach finishing line (2)
- Background music (1)

Mini-Game Changes

1. Canteen: Changed platforms from lifted platforms to flat ones to make it more SUTD-themed. Also, a canteen-looking scrolling background was added to make it have a more SUTD atmosphere.
2. Fablab: Simplified the game due to game constraints.
3. BookYourModASAP': For booking mod, the initial screen where players have to enter a username and password is removed, as it made the ga.me too 'formal'. This is because the main part of the minigame is about booking your mods and the timing challenge, so the username and password part stands out in a bad way. Thus it was removed.

Group Contributions

	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Danial	Conceived the idea for the mini golf game	Tried to code out the minigolf game but changed to FabLab game	Lay out the rules and ideas with the FabLab games.	Coding out the physics for FabLab game, using ImportManager, and using coroutines for pickups	Coding out the FabLab game, debugging the player input for local multiplayer	Finalise the FabLab minigame
Tan You	Conceived the idea for the Book Your Mod ASAP game	Finished working on mechanics with placeholders	Finalize the minigame for 'BookYourModASAP' with the assets provided.	Made changes to the game based on comments made by the professor	Helped Xiang Hao finalize the game	Helped Danial and Tae Woong finalize the game
Tae	Conceived	Worked on	After	Created	Switched	Worked

Woong	the idea for the classroom penalty shootout	penalty game, got the physics working to shoot balls in chosen directions	meeting, I started working on Canteen game instead	platforms for canteen game and implemented jumping	to flat platforms, finished mechanics with placeholders	with actual assets, integrated controllers
Xiang Hao	Figure out controller hot swapping	Creating the UI for the scenes in between minigames	Helped Danial with the code	Created the method to calculate the player scores and positions after each minigame	Integrated all the game scenes together	Debugged the inputmanager for the different minigames , created the final podium scene
Enna	created some assets, starting with "BookYourModASAP"				Sprites, sound assets done for Menu Scene, Control Scene, Results Scene, FabLab minigame and RunningTo Canteen minigame. Animation done for runners in RunningTo Canteen.	
Zhudan	created some assets,				Sprites, sound assets	

	starting with “BookYour ModASAP ,				done for Menu Scene, Control Scene, Results Scene, FabLab minigame and RunningTo Canteen minigame. Animation done for runners in RunningTo Canteen.	
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All the team members contributed to the GDD and the slides at their own times.