

CS102**Fall 2020/21**

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Criteria	TA/Grader	Instructor
Presentation		
Overall		

REQUIREMENTS STAGE REPORT

(version: draft)**27 October 2021**

1. Introduction

After a discussion we made as a group, we ended up with the notion of EscApe, which is a 2D desktop game that requires players to escape an angry ape as much as possible without getting stuck in obstacles (low ceilings, short walls, stairs) and making any mistake that result in termination of the game (falling to the spaces). EscApe involves two game modes. In single player game mode, since there is no ending, players try to obtain the highest score without hitting obstacles and falling to the spaces. In multiplayer game mode, they aim not to be the player who firstly makes mistake, and terminates the game. Both of these modes are based on the same progression logic; that is, passing obstacles to continue to game. What makes this game different from the similar games, such as Temple Run, Subway Surfers, Vector, Jetpack Joyride is it has a multiplayer game mode, enabling players to compete with one another. Furthermore, it does not have complex button arrangement, so it is suitable for wider age-span.

2. Details

2.1 How to Play

After the countdown, the ape that will chase the player appears, then the parkour proceeds and the character representing the player runs forward. Provided the player encounters any obstacle that requires player to slide or jump, player should carry out the mentioned actions.

In single player game mode, player can also use power-ups if he purchased any of them from shop, and also use upgraded version if he upgraded them before. Unless the player makes any mistake, the game continues and score of the player increases by time. If the player makes any mistake and does not have extra life, the game ends with the event that the ape catches up the

player. As long as the player has extra life, the game continues from the nearest safe point where he is caught up by ape or die.

In multiplayer game mode, since there is no extra life, the player making mistake before the other one terminates the game, and the winner's name is displayed on the screen. According to who is the winner, both of the player's win-lose ratio and total scores are updated.

2.2 Game Modes

EscApe includes two game modes, which are single player and multiplayer game modes.

2.2.1 Single Player Game Mode

The properties of single player mode can be summarized as follows:

- Ø The game starts after the countdown, countdown begins when players push the play button.
- Ø There is no ending, escApe as much as you can by sliding and jumping!
- Ø There is score counter that measures the player's score proportionally with the game duration. The longer game duration, the higher scores players get.
- Ø This mode contains coins that are randomly distributed to the game map.
- Ø Coins are to purchase power-ups from the shop and upgrade them.

Power-Ups

q **Extra Life**

When player dies somehow or is caught up by ape, it ensures player to continue the game from the nearest safe point where player made mistake. The number of extra lives can be upgraded from the shop. This power up can be upgraded such a way that it provides at most three extra life in one game.

q **Shield**

Protects player from ape catch, if player crashes to obstacle, such as short walls, low ceilings, and stairs. However, if the player falls to the spaces, the interruptions on the game ground, shield does not provides protection. The impact duration of shield can be upgraded from shop. After the first purchase, the shield have five seconds impact duration, and after each upgrade two seconds are added to current impact duration. This power-up can be upgraded at most five times. Player can use this power-up whenever he wants.

q **Wings**

Accelerates player for some time by assuring secure flight, and lands the player when the impact duration of the wings ends, its impact duration can be increased like shield. The impact duration of wings can be upgraded from shop. After the first purchase, the wings have three seconds impact duration, and after each upgrade one second is added to current impact duration. This power-up can be upgraded at most five times. Player can use this power-up whenever he wants

2.2.2 Multiplayer Game Mode

The main properties of the multiplayer game mode can be listed as follows:

- Multiplayer mode can be just played by two players through local area network (LAN).
- Does not contain power-ups and coins.
- The game ends when one player makes mistake resulting in death or ape catch.
- One player can view the other player while competing with each other.
- Each player has statistics showing that how many times they played, won and lost. In addition, statistics of each player includes the ratio of wins divided by whole games played before and elapsed time for each game.

2.3 Technical Aspects

As a database we consider to use SQL and SQLite [1], and as a library choice we thought it is plausible to use Light Weight Java Game Library (LWJGL) [2] and libGDX [3] for the time being.

3. Summary & Conclusions

In conclusion, escApe is a 2D Desktop game involving two game modes: single player and multiplayer. Each mode includes distinctive aspects to enable users to different game experiences. Players can increase their highest score by unlocking the power-ups and upgrading them. At every time they do so, they can have unique game experience since they introduce a new feature to the profile with which they play. On the other hand, they can also prefer competing with their friends to be the winner and show them who is the best.

REFERENCES

- [1] Sqlite Home Page. SQLite Home Page. (n.d.). Retrieved October 27, 2021, from <https://www.sqlite.org/>.
- [2] Lightweight Java Game Library. LWJGL. (n.d.). Retrieved October 27, 2021, from <https://www.lwjgl.org/>
- [3] LibGDX. libGDX. (2021, September 1). Retrieved October 27, 2021, from <https://libgdx.com/>.