CS 319 - Object-Oriented Software Engineering

Final Report

<u>Jungle Pursuit</u>

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Content

1. Overview

Jungle Pursuit is a basic game and application which is based on Android Development. Users can control the game by touchscreen commands. In order to play the game, users have various options about in terms of number of players. In other words, players can play that game either with another player or with themselves by making a selection. Apart from that, there are additional items such as bananas, oils, vines. All these objects have different role in the game.

2. Accomplishment of User Criteria

2.1 Ease of use

For our game, both function and selection of features will be made by users. In addition to that, before playing the game, player can select his or her own options and customize his or her information such as they can select their name and gender and then, during the game, pressing dice button or shaking device that has the game. They all are so easy that user can play the game.

2.2 Ease of learning

The properties that are mentioned above are so useful that players can play the game with ease and they can learn about property of game such as how to play. In order to help to players, there is a 'Help Menu' which is shown below. Therefore, users can learn anything about the game with ease.

2.3 Response Time

Jungle Pursuit has advantages of instant response time feature. To clarify this feature, there is a dice and characters in the game. As soon as player press dice button, dice is rolling instantly and accordingly, characters that are chosen by players before are starting to instantly move to where she or he is supposed to be depending on the result of dice rolling.

2.4 Memory

Since there is no animations, there is less need of internal memory, accordingly, old phones can aldo run that application as well as the latest smart phones. Also, we have limited the number of pictures that reduced size of application.

2.5 Portability

In that game, we used the different version of Android. SDK19 is for minimum and SDK 23 is for maximum. The reason for this is that without any hesitation, old phones or the current phones can run it. Also, as this is an Android application, user can easily download and play the game with the help of their Android technological devices.

2.6 Extendibility
This project can be developed for the later versions by pointing or changing some details. More characters, players, snakes,vines and items can be added. Characters are simple loading of images in drawable folder, are seen on selection screen. Players, snakes,vines and items are allowed because arraylist was used to store players on the board instead of individual players object.

3. Requirement Analysis
3.1 Functional Requirements
All requirements are below satisfied.

- Players will be moved automatically according to dice role and where they land and what item or object they land on.
- The player or players should be able to enter their name that will be displayed in a game panel
- The player should be able to collect items causing them to despawn on the board.
- User should be able to change character and choose:
  - o Male Character
  - o Female Character
- User will be able to access the help menu that consists of information about how to play the game and items.
- User can toggle music on and off.
- The user should be able to roll dice by shaking phone or clicking on role button.
- The users should play turn based.
- User should be allowed to play multiplayer or single player
- Players should be able to beat opponents back 3 squares

3.2 Non-Functional Requirements

All requirements are below satisfied.

- Control mechanism of the game shall have short response time that allows the player to play with minimal delay.

- The snakes and vines should be placed appropriately on the board to ensure clear understanding of where the snake or vine starts and ends.

- The placement of items and snakes and vines should be static for each time the user starts a new game.

- The dice shall be a random number generated from 1 to 6.

- The lucky banana shall be a random number generated from -6 to 6, including 0.

- Dice roll time and animation should be appropriate for game aesthetics and response

3.3 Constraints

All constraints are below satisfied.

- The game will be implemented in native Android, Java programming.
- Drawings in the game will be smooth.
- The game will run on all devices that support Android OS, irrespective of other constraints that determine phone performance.
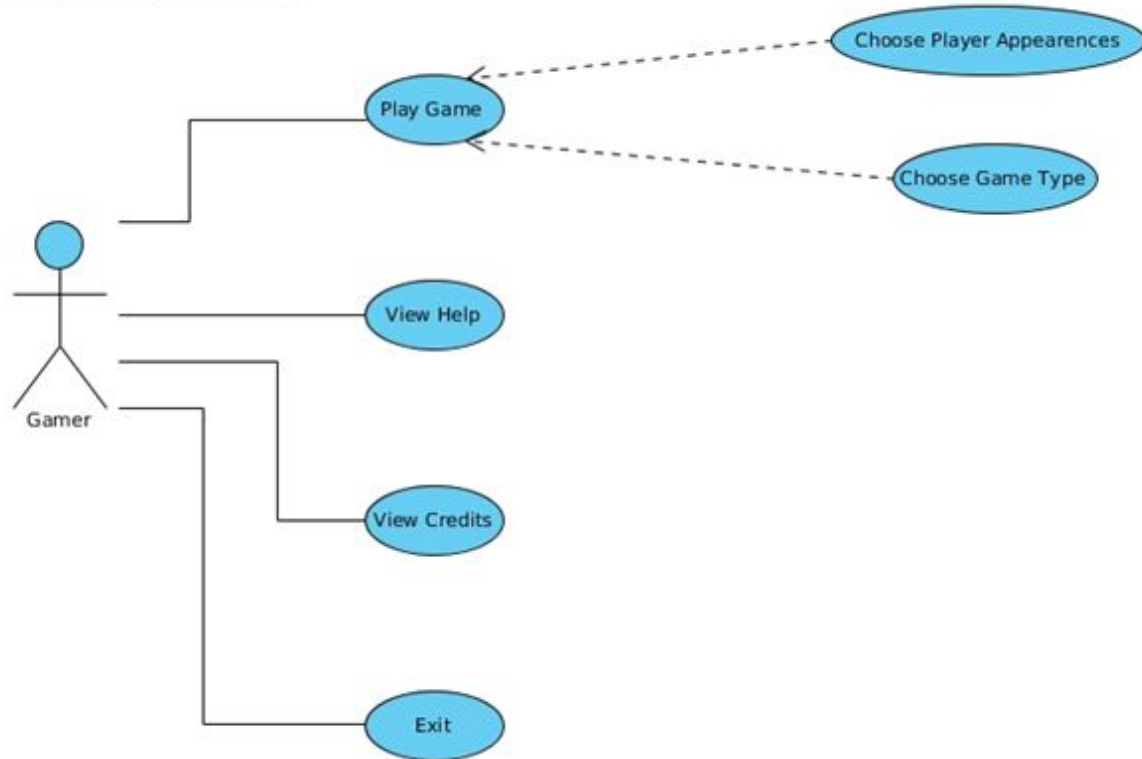
This use case model also reflects that we achieved the goal of the project.

4. Changes

There are some parts that we changed and also there are some parts that are not changed.

- Changes in images used to represent snakes and vines to save space and reduce complexity to process image. In the Analysis report we stated how each snake will have its own picture, but later decided to only have three pictures of the same snake with different colors and directional orientation.
- Navigating is not changed and the path from one activity to another is the same.
- Additional methods were added to the Game Manager class to allow us to achieve the needed functionalities. These additional methods include:
    - DispMessage() ~ Which controls the message out put on dialog box.
    - CheckPos() ~ Which checks the current position of the players on the board
- Additional object created "DispDice" which handles the animation of the dice in an additional dialog box.

- The shake to roll feature was cancelled, as it was cumbersome for the user. As the phone device would be passed from one user to another, the device would register it as a shake and roll the dice before the user could.
- Additional attribute has been added to player which is Plyaer Number. If he is player one or not

5. Conclusion

There are some changes that make the game more efficient in terms of functionality but no major changes occur. We have achieved our goal and criteria that we determined before. We are planing to upload the game to Play Store as we implemented the game using Android Development based on Android Studio, users can easily download Jungle Pursuit through smart phones/tablets that are powered by Android.