

Kelereng Game on Android

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Abstract

Nowadays, traditional games have been largely forgotten with the emergence of digital gadgets. This research was created to generate a love of traditional Indonesian games, one of them is Kelereng. By digitalizing Kelereng game, it is hoped that this application could preserve kelereng game in Indonesia and also fulfill people's desire to play their childhood game anytime, anywhere. This application is developed using Unity 3D, one of the game engine and C# programming language.

Keywords—marbles game, android devices

1. INTRODUCTION

“Kelereng” (marbles) is one of many traditional games in Indonesia. Nowadays, “kelereng”, maybe still popular among children to play this small round object. Playing “kelereng” has so many benefits such as making the player more focus, not easy to give up and keep the player being very active because this game required the player to stand up, squat, flick and sometimes make the finger in pain as flicking “kelereng”.

But along with time, this game is starting to be forgotten since more modern games have been found such as video games and online game appear, even in the rural/remote places. From the situation above, the author tries to make a game that will preserve the game of “kelereng” to people in Indonesia so that people will always remember about the traditional game in Indonesia and maybe people can call back the memories of the childhood game.

The application is developed as an android application named “Kelereng Game”. The title is mixed with Indonesian language since one of the purposes of this project is to preserve the game of “kelereng” in Indonesia. This application will use Unity 3D, one of the game engine and developed with C# programming language.

2.METHODOLOGY

This research use the RAD (Rapid Application Development) model to develop the application.

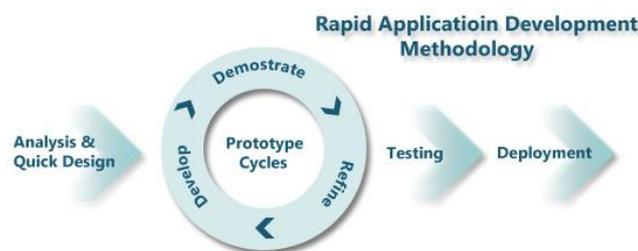


Figure 1.1 “Rapid Application Development Methodologies [3].”

Based on Figure 1.1, the RAD has four flows, it starts from an analysis and quick design, prototype cycles, testing, and deployment. All of flows have advantages in order to allow software to be written much faster, and it is easier to change requirements. The methodology is chosen because of the tight schedule of the project and the entire system of operation can be developed as software mechanism development that provides higher quality in less time. Therefore, by using the RAD model, the project would be more manageable for the time needed to build the application will be lessened.

1. RESULT AND DISCUSSION

The origin of “kelereng” cannot be known for sure because it has been played for so long. It is estimated that “kelereng” was found in 3000 B.C in Egypt. In Ancient Rome, “kelereng” was also already played widely. At that time, this game already had “official” rules. Like other Roman games, rules that occurred that time have become the base of nowadays “kelereng” game. There are a lot of types of the game of “kelereng” in Indonesia. But there are three types of games that are most often played by children in Indonesia; Triangle, Circle, and Rectangle. The game is played by at least 2 people. One of them will draw a shape as the arena and set several “kelereng” in the arena. Then they will do the rock-paper-scissors to decide who plays first. The first person to play will try to make the “kelereng” out of the arena by flicking his or her “kelereng” to the “kelereng” in the arena and hitting it. If the “kelereng” in the arena is not out, the chance of play turns to the second person’s. This continues until there are no “kelereng” left in the arena. The player who makes the most “kelereng” out of the arena is the winner.

“Kelereng Game” is a traditional game on Android that combines calculation, strategy, and luck during gameplay. The game objective is to win the game by flicking the “kelereng” to the arena and to make the most “kelereng” out of the arena. The gameplay in this application is divided into three levels, with three different arenas and difficulties. The difficulties is based on the obstacles that appear in each level. The higher the level means the more challenge the user will meet. On the first level, the difficulty is categorized as easy the obstacles are not so hard. On the secon level, the difficulty is medium with addition of the obstacles. On the last level, the difficulty is hard with a lot of obstacles that will make it hard for the user to win the game. In the beginning only the first level available to play and the others are locked. The player will need to win the current level to unlock the level.

Class Diagram

There are six classes in this research, such as MainMenu class, GameLevel class, Gameplay Level, FlickKelereng class, Instructions class, and Data class.

1. **MainMenu Class**
MainMenu class is the class that controls the view and functionalities on the Main Menu scene.
2. **GameLevel Class**
GameLevel class is a class that controls the view and functionalities on the Game Level Scene.
3. **Gameplay Class**
Gameplay class is a class that controls the view and functionalities on the Gameplay Scene.
4. **FlickKeleremg Class**
FlickKelereng class is the class that controls the movement of the “kelereng”
5. **Instructions Class**
Instructions class is the class that controls the view and functionalities on the Instructions scene.

6. Data Class
Data class is just a class where the data is stored, such as the Gameplay value, the GameLevel value, the countdown timer, and point value.

Interface Design

The kelereng game user interface is done with the support of Adobe Photoshop CS 6, a powerful image processing application that offers designers a rich designing experience with its vast selection of tools. Interface Design of the kelereng game is divided into seven pages:

1. Main Menu



Figure 3.1 Main Menu

Figure 3.1 shows the main menu interface. The player is redirected to the Main Menu after the application runs. In the Main Menu, there are several menus provided which can be selected by the player such as Start Game, Instructions, and Sound Button. If the player taps Start Game Button, the player will be directed into the Game Level Scene. If the player taps Instruction Button, the system will load the Instruction Scene. Sound Button is a button that set the volume sound of the game. In the beginning the sound will be activated by default, or the other hand, it is in “ON” state. But if the player want to shut it “OFF” then the player can taps the sound button to turn the sound off.

2. Game Level

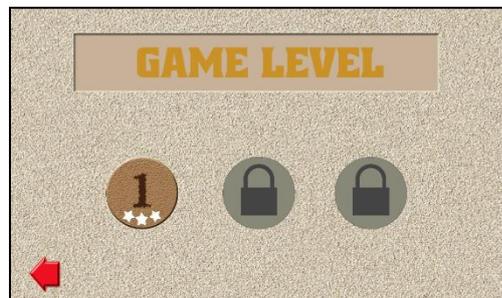


Figure 3.3 Game Level

Figure 3.3 shows the game level where user could choose the level of the game.

3. Game Room
This is where the game will be started. By select the level, system will load the selected level and the game will start.
4. Game Instructions Menu
This menu contains information about how to play the game. The instruction menu scene loaded when user taps Instruction Button in the Main Menu.
5. Pause Menu
This scene displays when user taps the pause button in the game room. Pause Menu consists of three buttons: resume button to continue the game, reset button to replay the

game with current level, and quit button that will bring the player to the main menu and terminate the game.

6. Level Cleared

The level cleared scene appears when the user wins the game. The level cleared scene consists of three buttons: home button to return to the main menu, retry button to retry the game with current level, and next button to continue the game in the next level.

7. Level Failed

This scene is displayed when the user loses the game. Level failed scene consists of two buttons: home button to continue the game and retry button to replay the game with current level.

2. CONCLUSIONS

- Kelereng game is a traditional game on Android devices that combines calculation, strategy, and luck factor during gameplay
- Kelereng Game offers a single player mode, supported with three game levels with different difficulty in each level.
- The game finished when there are no more marbles available to be kicked out of the arena and the score counted whenever the player kicks an opponent's marble out of arena.

REFERENCES

[1] C# Station: <http://csharp-station.com/>.

[2] Kelereng:

<http://www.kumpulansejarah.com/2013/05/mengenalsejarahpermainankelereng.html>

[3] RAD:

http://www.teachict.com/as_a2_ict_new/ocr/A2_G063/331_systems_cycle/prototyping_RAD/miniweb/pg7.htm

[4] Unity: http://en.wikipedia.org/wiki/Unity_%28game_engine%29