Midnight school 3d game design

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ARTICLE INFORMATION

ABSTRACT

The game that is a favorite among gamers is the FPS type game (First Game).Person Shooter) and the horror genre. This research designs game genre horror and FPS type which is a very interesting combination for developed. The author will develop this game using Blender software as an in- game terrain creation, programming language C# and uses Unity 3D 5.3 as its engine. The features of this game are:mysteries/riddles, hints, and jumpscares where players will be surprised with sound, moving objects and so on. Device design method The software used is the Extreme Programming (XP) Development Method. which has the following stages: Planning, Design, Coding and Testing. The results of the research are in the form of a game called Midnight School with see First Person Shooter Horror 3D setting. Ease of Rating the game can be concluded based on the opinion of the respondents as a whole ie this game is very easy to play.

I. Introduction

Mobile games as part of the development of this information age areone of the controversial information media. Granic et al. (2014) argue that games are often associated with bad behavior of users, such as excessive addiction to playing games and alleged violence the result of playing violent-themed games, even though there are many advantages that can be obtained from playing. Games that prioritize social features that are value effective cooperation, support each other, and help each other each other can encourage the social skills of the players. According to Dr. Conrad (2015), game addiction refers to an act of playing games too much, which is unhealthy. Addicted players often alienate oneself from others, neglecting more important responsibilities, and usually obsessed with getting a higher status/ ranking /achievement in his favorite game.

In this study developing a special mobile game on smartphones Android based. Android has become the most popular mobile operating system in demand by users because of its ability to run various types of mobile games very well and Android can be had from various middle and lower middle class. Currently there are many types games on Android-based phones. One of the games that became favorite among gamers are FPS (First Person

Shooter) type games and horror genre. FPS is a type of game where players use first person point of view which is usually played without being able to see characters being played and this is intended for players to feel conditions in the game. Ivory, et al. said that First-person shooter game more aimed at male gamers. Male gamers are usually also interested in puzzle game genre which makes the game more challenging [2].

Several FPS type games with horror and puzzle genres that are in great demand by gamers, such as the game Slenderina the Cellar which is a game Android type FPS horror genre that is famous today. Where is this game has the ultimate goal of collecting eight books which in the process His quest was interrupted by the enemy (https://play.google.com, 2016). The Real Time Strategy (RTS) genre is one of the most popular genres and has a long history as a genre game. According to Glass et al (2013), games with the real time strategy genre , can help improve a person's cognitive abilities, both in terms of logic, as well as resource management. According to Whitson, Jennifer R. and Dormann, C. (2011), Asynchronous Multiplayer games are a form of digital interaction that is one of the features that played a big role in the success of facebook games Asynchronous game provide freedom for players to play according to their speed and each player's schedule. Asynchronous

multiplayer can provide experience play in multiplayer without the need for all players to participate to be online at the same time. According to Olson (2010: 181), multiplayer games provide a place for children to build rules and discover limits for behavior that is not viewed as fraudulent or unfair. So a game is like being able to build healthy competition according to the created limit.

Mobile devices in the form of smartphones and tablets cannot be separated

of human life. According to Ahanonu (2013: 5), mobile device users has the view that his device is an important tool for communication, organization, navigation, and entertainment. Mobile devices enable users to always be connected to a platform that suits their needs state of the user so that it can be an effective channel for instill a value.
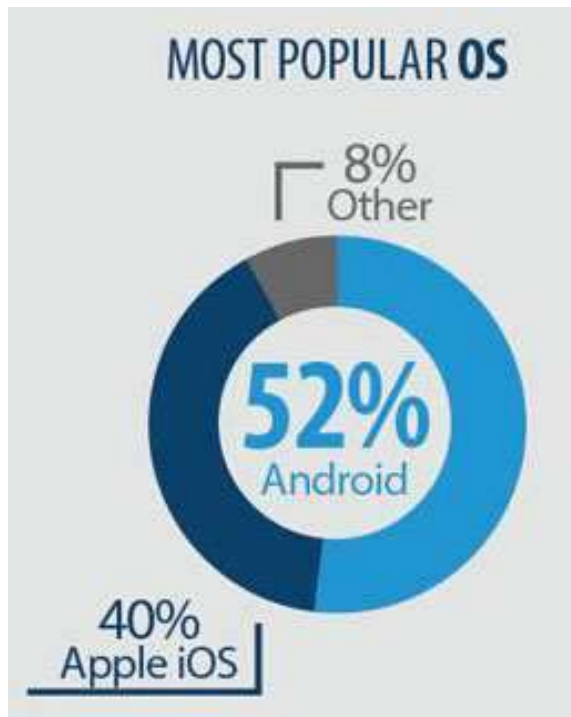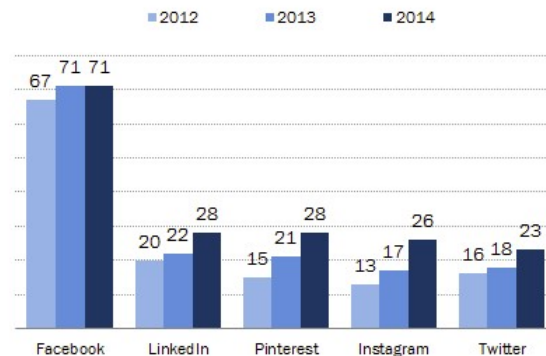

Figure 1. Result of the OS Market Share Survey by www.marketingprofs.com

In order for the message to be as broad as possible, more space is needed visited by many people. Based on the graph above, it can be seen that devices with the Android operating system are more widely used by smartphone owner. According to Ma et al. (2014), Android is a platform which is increasingly popular because of its open source nature and many tools for make applications on this platform available for free so that it is possible more applications created. Then the choice of operating system is dropped on Android.

Figure 2. Results of the Social Media Sites Usage Survey by PEW Research Center

Application is designed to have online access . For easy access This is Facebook as a social media that is more widely used until 2014 was chosen to make it easier for users to access the online database application. Moving on from the results of the above thought, an application will be made for answer the following questions: how to make a system which allows players to get maximum recreational benefits without playing excessively; how to deliver resource management education and problem solving through mobile game media?; how to shape a healthy competition system in a game?

This Midnight School game application is designed to run on devices with Android operating system version 2.3 (Gingerbread) and above. Application designed with the concept of levels for single player game mode. Application The game can be played in single player or asynchronous multiplayer. Player data is stored in online database with base management system MySQL data. The application uses a Facebook account to login only.

II. Method

In designing this game, the Extreme design method is used Programming is a model that belongs to the agile approach that introduced by Kent Back. According to the explanation, the definition of XP is as follows: "Extreme Programming (XP) is a development method software that is fast, efficient, low risk, flexible, predictable, scientific, and pleasant".

This model tends to use an Object-Oriented approach. The stages that must be passed include: Planning, Design, Coding, and Testing.
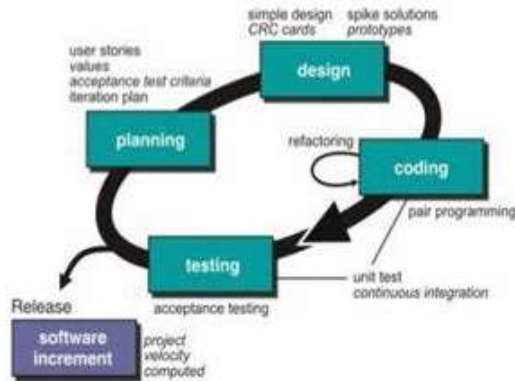
Figure 3. Extreme Programming (XP)

The goal of Extreme Programming is a team formed between small to medium only, no need to use a large team. Case This is intended to deal with requirements that are not clear or changes in requirements very quickly. Extreme Programming is the most widely used agile method and became a very popular approach. For the design of the control system, this research uses the Finite. method State Machines (FSM).

Finite state machine (FSM) is a system design methodology control that describes the behavior or working principle of the system byuses the following three things: State, event and action. At some point in a significant period of time, the system will be in one of the active states. The system can switch or transition to state others if you get certain input or events, both from external devices or components within the system itself. This state transition are generally also accompanied by actions taken by the system when responding input that occurs. The actions taken can be in the form of actions that simple or involve a series of relatively complex processes (Setiawan, 2006).

Figure 4 shows an FSM with two states and two inputs and four different outputs as shown in the figure, when the system start to turn on, the system will transition to State0, in this state the system will return Action1 if there is input Event0, whereas if it occurs Event1 then Action2 will be executed then the next system transitions to state State1 and onwards.
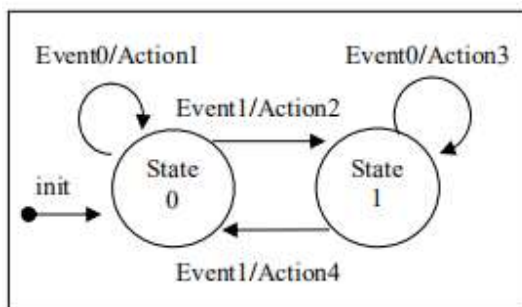

Figure 4. Simple state diagram

One alternative to implementing FSM is using programming object-oriented (Object Oriented Programming) or what is often abbreviated as OOP (Wijaya, 2010). The advantages of using OOP in FSM are: its high flexibility and easy maintenance are good on the system simple, intermediate, or complex systems. aside from that benefit from one of the advantages of OOP that is reuse code that has been typed (code reusability) so that typing code becomes more little (Wijaya, 2010).

III. Results and Discussion

Concept

1. Scenario 1.0 Screen Loading

Is a game opening screen by displaying title and creator animation.

2. Scenario 2.0 Main Menu

In the main menu of this game, there are 5 menu options which are: serves as a menu link Main, Settings, About, Clue and Exit.

3. Scenario 3.0 Play

On the Main menu, players immediately play the game. On This menu   contains levels and cases:

1) Scenario 3.1 Level 1

Players are asked to complete 3 existing cases at this level.

2) Scenario 3.2 Level 2

Players are asked to complete 3 existing cases at this level.

3) Scenario 3.3 Level 3

Players are asked to find one last clue to complete the previous clue and complete the level or game missions.

4. Scenario 4.0 Settings

Function to set on/off music and sound at the same time games are played.

1) Scenario 4.1 Main Menu

Main Menu functions to close the page and back to Menu page

5. Scenario 5.0 About

Serves to explain information from the game this.

1) Scenario 5.1 Main Menu

Main Menu functions to close the page and back to Menu page

6. Scenario 6.0 Clue

Serves to display clues that have been obtained during the game.

1) Scenario 6.1 Main Menu

Main Menu functions to close the page and back to Menu page

7. Scenario 7.0 Exit

The exit button is used to exit this game.

Design

Game Title   : Midnight School

Game Genre   : Education

Game Overview : This game is played on android or mobile devices with using analog navigation.

1. This game can only be played by one person (single player).
2. Analog navigation is used to move characters in the game.
3. Players will be given a secret mission to complete with found some clues that are only obtained when it's done complete all cases in each level.
4. This game has three levels, and in each level there are a number of cases different:
    1) Level 1, there are 3 cases
    2) Level 2, there are 3 cases
    3) Level 3, there is no case but players are asked to immediately complete the mission.
5. In each case players will meet ghosts and zombies, when zombies successfully surrounds the player then the player is declared a failure (lose / die).
6. If the player fails in the middle of the case or level, then the player will back to level 1.
7. This game has a different time limit in each case and level:
    1) Level 1, time given is 15 minutes/case
    2) Level 2, time given is 10 minutes/case
    3) Level 3, the time given is 5 minutes
8. If the player runs out of time to complete the case, then the player considered a failure and must repeat the game at the beginning of the case.
9. Players are equipped with weapons such as knives, pistols, and bombs that can be used used when zombies appear.
10. Each weapon can only be used 3 times in the game.
11. If the player successfully completes the secret mission, then the player declared victorious and awarded.

System Requirements

1) Platforms   : Unity 3D Engine
2) Operating System : Windows 7 - Windows 10
3) Dimension   : 1280 x 720

General Game Design

Main Menu: on this page there are 5 options, namely:

1. Play   : Option to start the game.
2. Clue   : option to display the clue that already obtained.
3. Settings : Option to set music and sound (on/off) when starting the game.
4. About   : Option to display information about games and game makers.
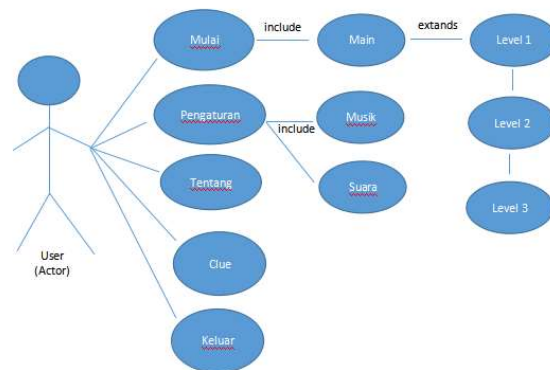5. Get out : Option to exit the game.

Use Case Diaram

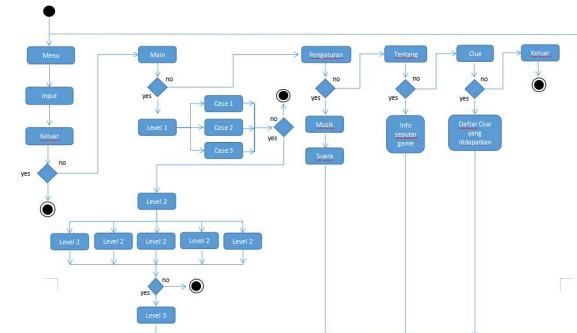**Figure 5.**   Use Case Diaram

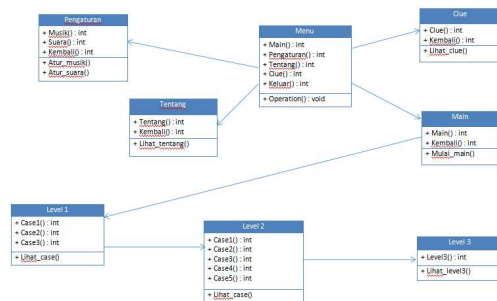Activity Diagram

Figure 6.   Activity Diagram

Class Diagram

Figure 7.   Class Diagram

Interface
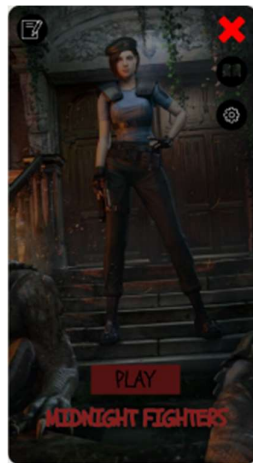
a) Main Menu Form

Figure 8.   Main Menu Form Design UI
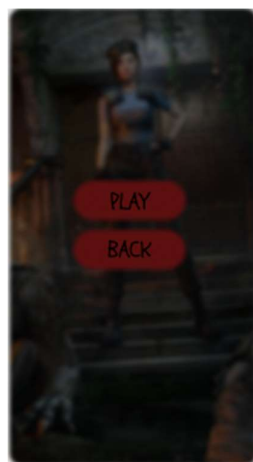
b) Play Form

Figure 9.   Play Form Design UI
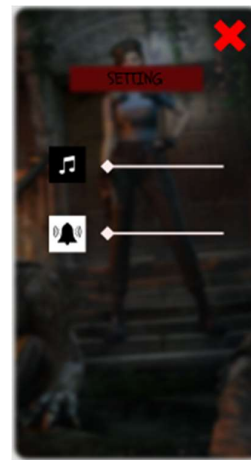
c) Setting Form

Figure 10.   Setting Form Design UI
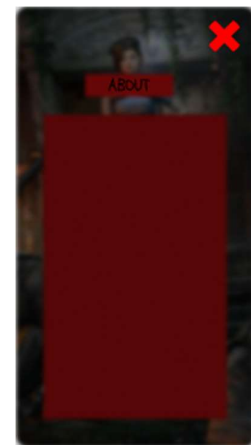
d) About Form

Figure 11.   About Form Design UI

e) Clue Form

Figure 12.   Clue Form Design UI

f) Level 1 Form

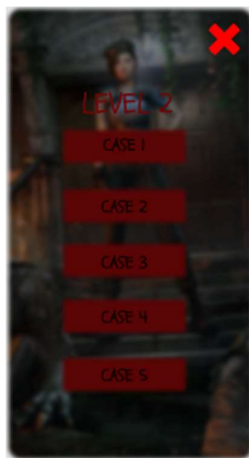**Figure 13.** Level 1 Form Design UI

7) Level 2 Form

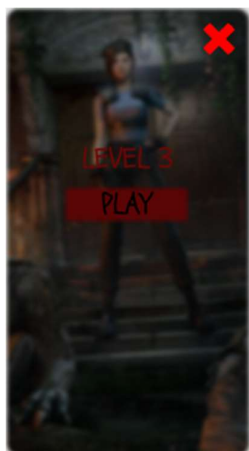**Figure 14.** Level 2 Form Design UI

8) Level 3 Form

Figure 15. Level 3 Form Design UI

IV. Conclusion

Based on the results of the Midnight School game design, it is obtained conclusion, namely:

a) The assessment of the level of ease of the game can be concluded based on The overall opinion of the respondents is that this game is very easy played. The appearance of the game has been given by the respondent directly overall answer the game display is quite good. As a requirement games can be categorized as horror, according to all respondents Midnight School games have qualified very well as horror games category. Judging by the level of the game's challenge, conclusion respondents to this game is the challenge has reached enough good. The input control setting is rated very well because it uses the input basic that is usually used in other FPS games.

b) Extreme Programming development method is very suitable to use in game design and development. Stages of designing a game includes making the basic concept of the game, determining the gameplay, designing the game or graphic design, core design includes character creation, music, menus, coding, etc., compiling or testing and publishing games.

c) Midnight School game design with First Person Shooter theme with horror settings and packaged in .apk file format which can later be uploaded on Google Playstore for Android platform users as well as can be played by gamers in order to participate in advancing and participate in the Indonesian game world.

The results of the game design that the author made are not as perfect as they seem expected. If further research can be made better, the following is a suggestion in the development of Midnight School games including:

a) The storyline in the Midnight School game is considered too short, so for further Storyline development can be made more complicated and complex;

b) Game maps/levels can also be added so that the game can be impressed more interesting because it has a varied game map/level, and

c) The instructions in the game still look very few and easy solved, then the next can be made more and more complicated. As a horror genre game, varied sound effects are very necessary needed in the game because the sound effect is one of the requirements horror genre games are more interesting.

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