

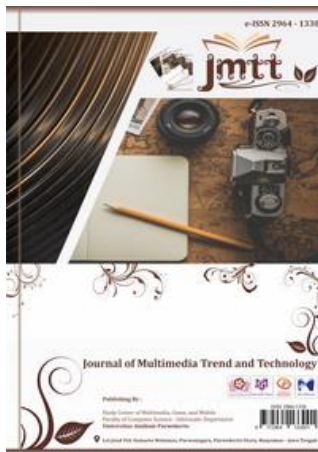
Design and Development of Android-Based “Tracked” Person Shooter Game Models

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ABSTRACT

Games or games on the computer are visualizations that can provide a response back when given certain commands. First-Person Shooter, is a popular game because it uses a first-person perspective where the player becomes the main character in the game. Games are now entering the era of mobile games. Mobile Games Developer First Person Shooter made in Indonesia is still very rare, but this game can be played anywhere and is one of the most popular types of games. Then came the idea to make a Mobile version of the First Person Shooter game in worm research with Multimedia Development Life Cycle research. This game has been tested on 10 respondents with a questionnaire and the results are average above 50% of all assessment scores. The conclusion is that the Mobile version of the First Person Shooter Game has been successfully made and this game is feasible to be implemented on Android devices as well as as a medium of entertainment. Apart from that, this person shooter game model is very possible to be developed towards business processes as currently running.

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INTRODUCTION

The development of Information Technology in Indonesia has recently developed very rapidly[1]. The high public interest in Information Technology requires Designers and Developers to develop their Ideas and Capabilities[2]. The current sophistication of Information Technology can visualize devices outside the computer and visualize them on the computer in virtual form[3].

Games or games on the computer are also partly a visualization of real forms in human life. Each type of game already has visualization, namely 2D and 3D[4]. Games at this time that are most popular are 3D games, because the objects contained in these games look more real[5]. The following is data on the types of games most often played in February 2012 by Agate Studio. According to the data that has been obtained, from 100% of game users, 75% of users like 3D model games and 25% of users like 2D models[6].

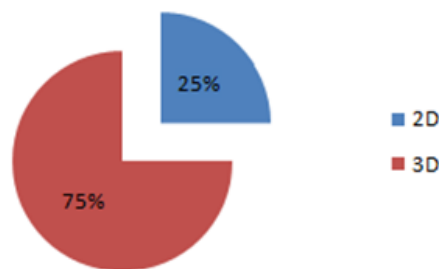


Figure 1, Favorite Game Model By Survive[7]

Hardware improvements affect the emergence of new types of games, one of which is First Person Shooter. First Person Shooter (FPS) games are one of the most popular types of games because they use a first-person perspective where the player seems to be the main character in the game[8].

The following is the Favorite Genre data according to a survey from Agate Studio in February 2012.

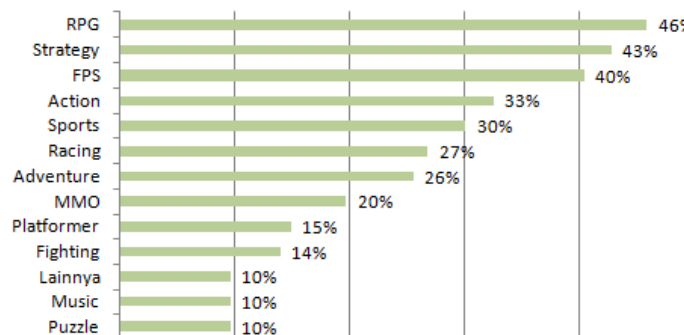


Figure 2. Favorite Genre Game Data[6]

The development of platform games can also be seen directly by the public, at first games were only played on computers and consoles but now they have entered the era of mobile games[9].

A mobile game is a game designed and played by mobile devices, such as PDAs, smartphones, tablet PCs and portable media players[10]. Currently, Mobile Games have been created on various platforms such as Symbian, Apple IOS, Android and Windows

Phone. A distinct advantage of playing Mobile Games is portability, that is players can play Games anywhere they want as long as they have Mobile devices capable of running Mobile Games[11].

The purpose of this research is to produce a 3D Game Software with the Mobile version of the First Person Shooter genre. The limitations of this research are that this game is played by only one person and is run only for the mobile version, especially Android[12].

Similar research was carried out in 2018 using the development method, namely collecting character models and voices, adding scripts to the first person / player character models to control the characters so they can run as expected[13].

Next in 2019 the research methods used were Storyline Design, Game Level Design, Game System Flowcharts, Game Character Design, Interface Design[14].

Then in 2020 this research is simulated in the FPS genre game where the enemy NPC will interact directly with the player character, with the theme of the war story in the Madura area[4].

Games are various activities that are carried out only to seek pleasure without a specific purpose. In each game has components and rules[15]. The game is any contest between players who interact with each other by following certain rules to achieve certain goals. Playing is an activity that is carried out with or without the use of tools that produce understanding or provide information, give pleasure and develop imagination in children[16].

METHOD

The method used is the Multimedia Development Life Cycle. Besides that, it is also used as a support such as observation and interviews to complement the time of data collection.

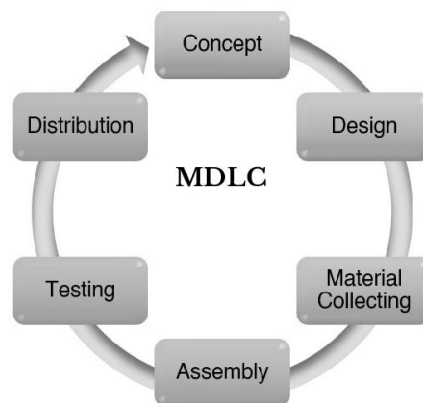


Figure 3, MDLC Model.

1. From the initial concept it was determined that the model to be designed would be a person shooter and based on Android.
2. Then for the design we use 3D models to make it easy for users to understand.
3. In materials we design using assets that are processed using Photoshop, Corel, and Blender to get unique characters.
4. At the assembly stage, we use instructions using Android Studio.
5. In our test we use the User Acceptance model involving 10 respondents.
6. In distribution, we will pack it into an APK package that can be installed on the Android operating system.

RESULT & DISCUSSION

The description of the model design that will be made is the Tracked model, which is a First Person Shooter Game genre which tells of a character named Aria who intends to delete a Computer Virus named Knockware. Knockware infects all Software contained in all Robots, making these Robots able to attack and detonate themselves when near humans.

With a modified Assault Rifle type weapon, Aria must survive as much as possible to destroy Robots that prevent her from approaching the main Computer. With the help of Radar, Aria was able to track where the main Robots and Computers were.

1. Concept

The concept is that later users will use the Android operating system application. Then the duration to be played is around 20 minutes per level. The interactive ones used are the Play Button, Menu Button, Guide Menu Button, About Menu Button, Shoot Button, Reload Button, Exit Button and Virtual Joystick. The form is a 3D animated model.

2. Design

The design will be made first, namely the rule scheme and game flow. In this game, 6 main menus are created when the user enters the application as shown below:

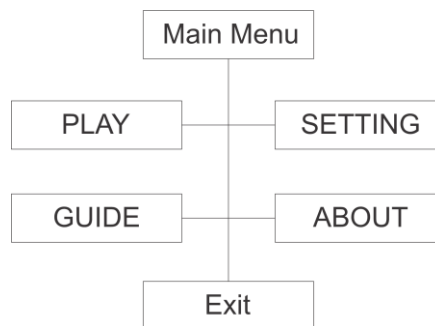


Figure 4, Game menu flow.

- a. Main menu, here will be displayed the background of the game along with the animated characters that will be played.
- b. Play button, where the player will start the game to be played.
- c. The Guide button is a help menu to explain in detail the form of the game and the rules of the game guide.
- d. The Settings button is for players to adjust the volume and level of difficulty in the game.
- e. The About button will contain production and license information contained in the game.
- f. The Exit button is a menu for players to exit to end the game application.

3. Collecting Materials

Material Collecting is the collection of elements or materials according to the needs of the multimedia product being worked on. This stage collects some of the materials needed such as Pictures and Sounds.

Table 1, Material Type.

#	Material	Description	Type
1	Background	Background image to display the environmental situation.	.PNG
2	Hero	Hero character for personal players.	.3DS
3	Button	Instruction buttons to carry out game missions.	.PNG .JPG
4	Help Desk	A text to provide instructions and how to play for the user.	.TXT .HTML
5	Backsound	A set of illustrated sounds that can represent the characteristics of weapons and the supporting environment.	.Wave (44100KHz)
6	Music	A sound illustration that represents playing conditions.	.MP3 (44100KHz)

4. Assembly

At this stage the design will be carried out directly on the 3D platform and Android Studio, the following designs are designed:

a. Main Menu

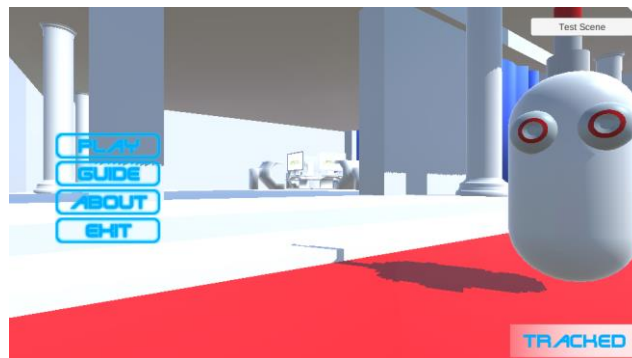


Figure 5, Game main menu display.

b. Guide Menu



Figure 6, Display the game guide menu.

c. Scene Play



Figure 7, Game animation display.

d. Exit Menu



Figure 8, Exit menu display.

5. Testing

The purpose of this test is to ensure the components of the system are functioning as expected. In this test the authors conducted two kinds of testing, namely the alpha test and beta test.

a. Alpha test

Testing is carried out by application makers by running directly on mobile devices. The result is as follows:

Table 2, Project evaluation based on function.

#	Function	Result
1	App access	No error
2	Animation movement	No error
3	Menu button function	No error
4	Rules in the game	No error
5	Overall performance stability	No error, Need a minimum requirement

b. *Beta test*

Beta testing is a test that is carried out objectively where it is tested directly in the field using a questionnaire regarding user responses to the games that have been made. To find out the response of the user's assessment of this game, a questionnaire was distributed to 10 respondents and then calculations were carried out by looking for the percentage of each answer using a Likert scale. The beta test used will test 3 components, namely Performance, Convenience, and Design, with an assessment indicator of 5 descriptions, namely Unattractive(C1), Less Attractive(C2), Interesting Enough(C3), Attractive(C4), and Very Interesting(C5). The result is as follows:

Table 3, Evaluation of use by players.

Player	Performance					Convenience					Design				
	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5
User 1				v					v					v	
User 2					v					v					v
User 3				v					v						v
User 4				v					v						v
User 5					v					v				v	
User 6					v			v						v	
User 7				v					v				v		
User 8			v					v						v	
User 9			v							v					v
User 10					v					v					v

Based on the assessment by users, in terms of performance, it is rated as attractive with an average gain of 50% from C4 and C5 results, while from a convenience standpoint it is also considered attractive from 50% C4 and C5, and for the design side, very good results are obtained with an acquisition of 50% of C5.

6. Distributions

After the application has been tested, the next stage is the distribution of the application. Prior to distribution, the program is published in the form of an .apk file. The program is distributed via Bluetooth, Flashdisk and the appstore media platform. Users can directly download it via mobile apps.

CONCLUTIONS

It can be concluded that games with the First Person Shooter genre can be run on the Android Operating System. Based on the results of tests that have been carried out on 10 respondents, it can be concluded that this game is in accordance with the design and can be accepted by respondents. In making the First Person Shooter Game "Tracked" there are still some shortcomings, so it is recommended to improve it further, including:

- a. Added Animation to Enemy characters to make the game more interesting.
- b. Added features to enemy characters such as shooting, jumping, walking, running to make the game more interactive.
- c. Adding features to the main character, such as changing weapons and throwing smoke bombs.
- d. There is a Multiplayer Feature, so that players can play games with other people.
- e. Added the Healthbar feature to the main character.

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