

Game Gatotkaca Adventure On Java's Island

Deni Rinaldi¹

Informatics Engineering
Sekolah Tinggi Teknologi Bandung
Kebon Lega, Bojongloa Kidul, Bandung, Jawa Barat
deni.rinaldi@sttbandung.ac.id

Muchammad Naseer²

Informatics Engineering
Sekolah Tinggi Teknologi Bandung
Kebon Lega, Bojongloa Kidul, Bandung, Jawa Barat
naseer@sttbandung.ac.id

Nova Agustina³

Informatics Engineering
Sekolah Tinggi Teknologi Bandung
Kebon Lega, Bojongloa Kidul, Bandung, Jawa Barat
nova@sttbandung.ac.id

Abstract— Indonesia has a variety of cultures and traditional arts spread from Sabang to Merauke with the uniqueness and characteristics of each culture itself. Wayang is one of the most prominent peaks of Indonesian culture and art among many other cultural works. Gatotkaca is an adaptation of Indian literature, namely Ramayana and Mahabarata. Game is one of the media that can be used in conveying a goal. The objectives contained in the game have various types of education, entertainment and simulation. At this time the game is growing and there are also many applications and libraries that are used to develop games. For example Construct 2, Game Maker: Studio, Unity, Godot Game Engine, Unreal Engine 4 and others. With this application, the authors hope this application becomes an interactive and interesting learning media so that it can help provide education, and preserve Indonesian culture, especially in Indonesian wayang. (Abstract)

Keywords— Wayang, Game, Unreal Engine, Gatotkaca.

I. INTRODUCTION

Indonesia has a variety of traditional cultures and arts that are spread from Sabang to Merauke with the uniqueness and distinctive features of each culture itself. By preserving and understanding our own culture, it is hoped that the younger generation will be able to better appreciate the distinctive values of the Indonesian nation, adopting a good and useful philosophy for life.

Wayang is one of the pinnacles of Indonesia's cultural arts that is most prominent among many other cultural works. Puppet culture is also a native culture of Indonesia, especially in Java. The existence of wayang has been centuries before Hinduism entered Java. Gatotkaca is an adaptation of Indian literary works, namely Ramayana and Mahabarata.

Game is one of the media that can be used in conveying a goal. The objectives contained in the game have various types, namely education, entertainment and simulation. In the history of human life, games have always existed and continue to be in demand by various groups at all ages.

With this application the authors hope this application becomes an interactive and interesting learning media so that it can help provide education, and preserve Indonesian culture, especially in Indonesian wayang.

The method used in the design of this system uses RAD (Rapid Application Development), the development used to design systems is to use UML (unified Modeling Language). So based on all of these descriptions the authors are interested in designing by taking the title "Gatotkaca Game" Adventures on Java's Island "".

Based on the background description of the problem above, a problem statement can be made as follows: Lack of education on Indonesian wayang. Preservation of a lack of Indonesian culture, especially wayang. The objectives of the research carried out are as follows: Making Gatotkaca Game: Advetures on The Java's Island has become a media to educate, and making this game as an interactive and interesting media and can help preserve Indonesian culture.

The benefits of the research carried out are to introduce Indonesian culture, especially in the world of Indonesian puppets in the form of an interesting game as a medium of interest by all ages. It is hoped that the information received by the public about Indonesian puppets can be fully obtained and attract users to preserve the Indonesian culture.

II. EASE OF USE

Overall, the system design method uses the Rapid Application Development (RAD) model. The RAD method is suitable for producing software systems with urgent needs and a short time to complete. The RAD method is an object-oriented approach to produce a system with the main goal of shortening the processing time of applications and processes so that as soon as possible empowering the software system precisely and quickly. The stages of system development in the RAD model can be seen in Figure 1.

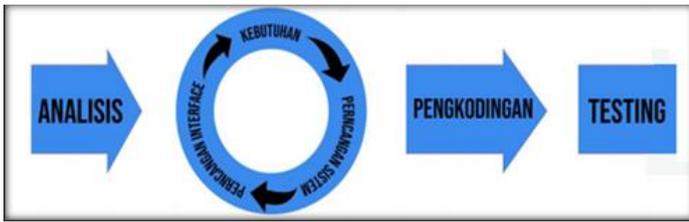


Fig. 1. System Development Method

The process in the picture above can be explained as follows:

1. Analysis, At this stage the authors identify the needs needed in building a general picture of the system that will be made into a game.
2. Needs, At this stage the authors find out the data needed in making games based on the results of the analysis process.
3. System Design, At this stage the authors do system design based on analysis and data that has been obtained, by making a system design using Unfield Modeling Language (UML).
4. Interface Design, At this stage the authors do the interface design of the application to be made, based on the functions that will be made.
5. Coded, The coding phase is based on the results obtained in the system design. The design that has been designed is then translated into code through events to implement the program logic.
6. Testing, System testing is done by the blackbox method, the test to be performed is testing the features and functions in the game, so that this game can provide the right information.

A. Research Steps

The steps that need to be taken to complete this research include:

1. Requirements Analysis

In this section the requirements stage is divided into 2 namely the developer needs and system requirements. Developer needs include what will be used by developers in the process of making games, including hardware and software used. While the system requirements include what are the requirements of making a new system, including functional requirements and non-functional requirements.

2. Literature Study

At this stage various documents, references, books, sources from the internet and other sources needed for the design of the game were collected.

3. System Design

System design phase is a continuation of the analysis process in which changes are made to the system that is running. This is done to overcome existing deficiencies, facilitate the work carried out by the people involved and save time on the work.

a. Use case Diagram

Use case is a scenario illustration of the interaction between the player and the system. A use case diagram illustrates the relationship between actors and activities that can be carried out on an application.



Fig. 2. The Gatotkaca Use case Game Diagram

b. System Overview

The game to be played is when the user plays this game and then the system takes an asset, where the asset contains a map and character so that it provides the location and character that will appear in the game being played by the user.

c. Interface Design

This interface design stage begins with the process of making an interface using Unreal Engine with the C++ programming language that is done on the BluePrint connection from Unreal Engine.

4. Application Development

At this stage the model and application design that has been made will be implemented through making program code and game interfaces. Programming will use Unreal Engine4 and the programming language used is C++.

5. Testing and Evaluation

A system testing phase is carried out by identifying the problems that arise when the game is run. The test method chosen is the black box testing method. Tests conducted are testing game features.

6. Compilation of Reports

The documentation will be prepared as a report throughout the research work process. From the preparation of this book is expected to facilitate readers who want to perfect and develop game further.

III. RESULTS AND DISCUSSION

This stage is done after completing the design and will then be implemented in the programming language that will be used. After implementation the new system is tested, which will be seen deficiencies in new applications for further system development.

1. Main Menu Interface

On the main menu in this game there are several options, namely: New Game, Load Game, Option and Exit Game.



Fig. 3. Main Menu

2. Select Character Interface

The game built can display a page to determine which character will be used by the user.



Fig. 4. Interface Select Character Game Gatotkaca

3. New Game Interface

Displays the game to be played by the user, can be controlled by the user to achieve certain goals.



Fig. 5. New Game Interface Game Gatotkaca

4. Skill 1 Interface

Displays the effect of the moment on the game Gatotkaca when the user presses the 1 key on the keyboard when sufficient.



Fig. 6. Interface Skill 1 Game Gatotkaca

5. Skill 2 Interface

Displays the effect of the moment on the game Gatotkaca when the user presses 2 keys on the keyboard when sufficient.



Fig. 7. Interface Skill 2 Game Gatotkaca

6. Drop Heal Interface

Randomly displaying the location of the drop heal to regenerate blood that runs out.

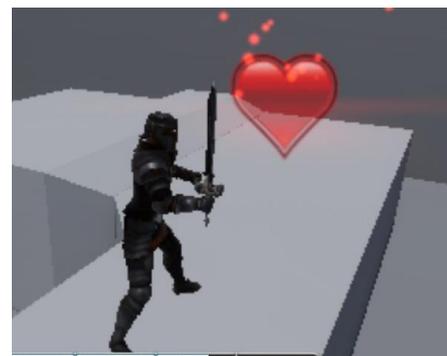


Fig. 8. Gatotkaca Game Drop Heal Interface

7. Run Interface

Displays an avatar image when running.



Fig. 9. Run Game Gatotkaca

8. Inventory Interface

Displays the features of items contained in inventory that have been purchased at the shop or obtained from drop items.



Fig. 10. Gatokaca Game Inventory

9. Shop Interface

Displays features of goods in the store to be purchased and put into inventory.



Fig. 11. Game Shop Gatokaca

Beta testing on the Gatokaca Game uses a questionnaire that has been done on 94 user samples, showing that the game built already has quite interesting features and puzzles that are not too easy. Besides this game was built to provide insight into the history of Gatokaca.

IV. CONCLUSION

Based on the results of research trials that have been conducted, obtained a number of conclusions include:

1. With the game Gatokaca: Adventures on The Java's Island is expected to preserve Indonesian culture, especially puppet culture by providing education to the game players, so that what is expected can be conveyed.
2. With this game as an interactive and interesting media and can help preserve Indonesian culture.

In the future, it is expected that developers will add more structured and detailed story lines to the game based on the original Gatokaca story, so that more levels are available. It also adds to the existing game characters to make it look more realistic, so that it can spoil the eyes of the players.

REFERENCES

- [1] Antony, Joe. 2012. Understanding the Game and its Types <http://antony.joe.dj/post/6325538347/understanding-game-and-type-types>. Accessed March 3, 2018.
- [2] <https://unrealengine.com/>
- [3] Utami, Ema. and Sukrisno (2005). 10 Steps to Learn Logic and Algorithms Using Language C and C ++ on GNU / Linux. Yogyakarta: Andi Offset.
- [4] Konixbam. (2009). Desktop Application Using VB. Net, Surabaya.
- [5] Dharwiyanti, Sri and Wahono, Romi, Satria. Introduction to the Unified Modeling Language (UML): <http://www.ilmukomputer.com/umum/yantiuml.php>.2003
- [6] Pressman, R.S. 2012. Software Engineering: Practitioner Approach. Yogyakarta: Andi Publisher.
- [7] Nugroho, Andi. (2010). Develop data applications using C # and SQL server. Yogyakarta: C.V ANDI OFFSET.
- [8] H. A. Simon. 1987. Expert systems theory and application. Andi Yogyakarta: Yogyakarta.
- [9] Marakas, G.M. 2006. System Analysis Design: an Active Approach. New York: Mc.Graw-Hill.
- [10] Fauzi, Anas. 2015. "Android-Based Game of the Legend of Wiro Sableng Using Unity 3D". Final report. Sebelas Maret University Surakarta.