

DESIGNING ANDROID-BASED 2D GAME TO INTRODUCE TOURISM POTENTIAL IN JOMBANG REGENCY

Rhavi Hakiki Rahmatullah, Joko Samodra, Mitra Istiar Wardhana

Desain Komunikasi Visual Universitas Negeri Malang, Malang, Indonesia
rhavihakiki@gmail.com; joko.samodra.fs@um.ac.id; mitra.istiar.fs@um.ac.id

Abstract: Jombang has many variety of tourism potentials that are not widely known by public and potential tourists, the gap in the number of visitors between one tourist spot and another is clearly visible. It could happen because of lack of tourism promotion activities carried out by the Jombang Regency Government. To assist government efforts in introducing tourism potential in Jombang Regency, it is necessary to have an effective media that capable of quickly convey any information in this modern times. One of them, is game media by delivering information through audio, visual, and user interaction to attract potential tourist's attention. This design intend to make Android-based 2d game that can provide general information about tourism potential in Jombang Regency. The design method used in this research is Sutopo's version of the MDLC method which adopts the Luther methodology. This method has six stages, namely concept, design, material collecting, assembly, testing, and distribution. This design produces Android-based 2d game which contains general information of tourism potential in Jombang Regency. In addition, it is accompanied by trailer, poster, and stickers to support the introduction of tourism potentials in Jombang Regency. The final result of this design is expected to help introduce the tourism potentials in Jombang Regency in efficient and effective way. abstract not exceeding 250 words should appear here. It should clearly reflect the contents of the paper.

Keywords: 2d Game, Android, Tourism Potential, Jombang Regency

INTRODUCTION

Tourism is one of the major sources of Pendapatan Asli Daerah (PAD) in several regions. But, based on data published by Badan Pusat Statistik (BPS) of Jombang Regency in 2018 there are some gap in the number of tourist visitors between one tourist attraction and another. The average number of tourist at Makam Gus Dur has reached 108.000 visitors, while beneath it the average number of tourist at Tirta Winata only reached 6.000 visitors [1]. This gap, mostly caused by lack of promotional activities that have been carried out by the government. A new promotional activities needed for help government to introduce tourism potential of Jombang Regency. One of the best options is mobile game. A markets of mobile game was very wide and the delivery of information is considered relaxed and comfortable for their users. The other research to achieve this goal has done by Munir which focused on game development to introduce tourism of Central Java. To deliver information of tourism potential through android-based game, the game need to be effective and able to introduce tourism potential. To achieve this, this research only focused on delivering information of Kedung Cinet, Candi Rimbi, and Taman Ponggok that can be considered as variety of Jombang tourism and limited on general explanation of tourism in Jombang Regency. The game also use support media such as trailer video, stickers, and poster to help promote the game as main media.

REVIEW OF RELATED LITERATURE

A. Game Development

A game can be defined as a system where player get involved in artificial conflict based on artificial intelligence [2].

B. Design Purpose

The main purpose of designing is to create and introduce a product [3].

C. Programming

Programming is a words that is arranged and assembled to solve problems implemented in a programming language so that it can be executed by a computer [4].

D. 2D Game

2D Game are one of the visual styles that are often used in games [5].

E. Multimedia

Multimedia can be interpreted as more than one media, where include combination of text, graphic, sound, and image with a computer as a driving force for these [6].

F. Android

Android is an open source operating system based on kernel linux, an android-based smartphone generally have a built-in app and support third-party program [7].

G. Jombang Regency

Jombang Regency is a district located in the middle of East Java Province. Based on data from the BPS of Jombang Regency in 2018, it is known that there are five tourist areas with the highest number of visitors in the past year. Makam Gus Dur is a tourist spot with the highest number of visitors, then Tirta Winata and three other tourist attractions with a much different number of visitors to Makam Gus Dur.

TABLE I. DATA ABOUT TOURIST ATTRACTIONS IN JOMBANG REGENCY IN 2018

Month	<i>Makam Gus Dur</i>	<i>Tirta Winata</i>	<i>Makam Sayid Sulaiman</i>	<i>Wanawisata Sumberboto</i>	<i>Sendang Made</i>
Jul	101.956	6.269	2.941	2.231	1.154
Aug	72.801	3.521	3.551	920	1.694
Sept	146.230	5.917	3.241	2.118	1.131
Oct	126.146	7.603	2.957	2.561	1.231
Nov	109.046	7.444	3.254	1.961	1.194
Dec	156.166	13.200	3.672	1.961	1.005

H. Tourism

Tourism is all activities related to the entry, residence, and movement of foreign residents within or outside a certain country, city, or some region.

I. Tourism Potential

Tourism potential is the attraction of a tourist destination, so that people want to come visit the place.

RESEARCH METHODOLOGY

A. Design Model

The design model used in this research is the MDLC (Multimedia Development Life Cycle) method by Luther modified by Sutopo.

B. Design Systematics

The design systematics will be presented in the form of a work diagram. The following is a diagram used in this design based on Luther's model modified by Sutopo:

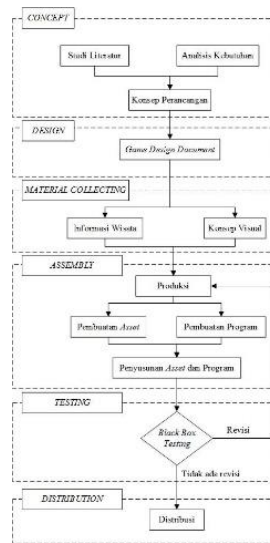


Figure 1. Design Systematics

C. Design Procedure

The following is the design procedure for each stage in the MDLC method include concept, design, material collecting, assembly, testing, and distribution.

DATA ANALYSIS

A. Kedung Cinet

Kedung Cinet is a river in the middle of a forest with unique limestone rocks along the riverbank. From the story in the surrounding community, it was used for bathing and resting by soldiers of the Majapahit Kingdom while waiting for their partners to come.

B. Rimbi Temple

Rimbi Temple is a Shiva Temple, seen from the reliefs containing Tantric teachings carved at the foot of the temple.

C. Ponggok Park

Ponggok Park is an agricultural and plantation tour in Jombang which has various types of flowers, vegetables, fruits and other plants.

D. Game Design Analysis

Game design analysis used to determine the design guidelines for developing a game.

- 1) To design a game that is intended as a promotional media for the introduction of tourism potential, several types of fun are needed, including exploration to show the location of tourism potential in Jombang, narrative to explain information, and sensation to give a feeling of pleasure by seeing the visual appearance and the variety of characters presented in the game.
- 2) The marketing target in accordance with the goals of this research is male and female, between 13-35 years old, and have a hobby of traveling.
- 3) Character design models that allow players to choose what costume or clothing model they want have been widely used in game design in recent years.
- 4) Simple mechanic types can give players the freedom to play the game anytime and anywhere, this is in accordance with the target market of this research.
- 5) To support the achievement of Aesthetic in the MDA principles, the sensation given to players is a cheerful atmosphere.

DISCUSSION AND RESULT

A. Design Concept

The results of the data that have been presented and collected are then processed in a design concept.

- 1) Design Principle: The main mechanic in designing this game focuses on take the photograph of objects and places.
- 2) Game Pitch: "Show the uniqueness and tourism potential of Jombang Regency by becoming a professional photographer according to your style!"
- 3) Core experience: want to provide the experience for players to become the photographer they want.
- 4) Core Direction & Target Market:

TABLE II. CORE DIRECTIONS

	Core Direction
Theme	Bright and colorful
Uniqueness	Give rewards to players for selling photos in the form of money, money can be used to upgrade cameras, upgrade storage, and buy various types of clothing for character customization, the core mechanic is easy to play
Level Concept	Each level represents a place that is a tourism potential in Jombang Regency with a few small additions to increase the appeal of the game.

The target market of this game is male or female, between 12-35 years old, and has profession as office employees, traveller, and school kid.

5). Core Loop:

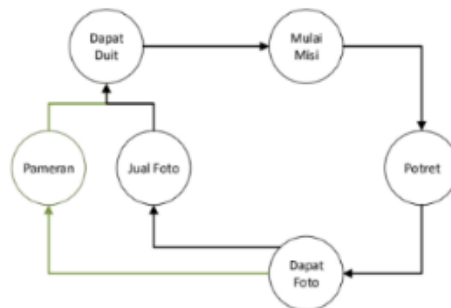


Figure 2. Core Loop

6). Visual Data



Figure 3. Game Visual Data

B. Implementation

- 1) Game Design Implementation and Scripting: *The previously made asset arrangement is then applied in the game engine according to the design concept that has been designed.*
- 2) Deployment: *The deployment stage is a process of running a game to determine the suitability of the game design that has been implemented with the previous script.*

- 3) Testing: *In this design, testing is carried out using the Black Box Testing method and a questionnaire. The questionnaire was carried out by testing the effectiveness of the delivery of information from product results to design objectives.*
- 4) Debugging: *To find out the mechanics of the game working properly or not, debugging is needed to find out and solve the problems that exist in each script.*

C. Final Result

- 1) Product Specification: *The specifications of the design results are:*

TABLE III. PRODUCT SPECIFICATION

Specifications	Explanations
Product name	"Potret: Jombang"
Installer size	27 MB
Total file size	48.46 MB
Game format	.apk
Minimum API Level	Android 4.4 'KitKat' (API level 19)
RAM	1 GB

- 2) 2D Game: *The final form and appearance of the design results are:*



Figure 4. Gameplay Preview

- 3) Poster and Sticker: *The form and appearance of supporting media from the results are:*



Figure 5. Gameplay Preview

CONCLUSION

Jombang Regency have many tourism potential which can be used as tourist destination. With these tourism potentials, there needs to be an active role to introduce tourism potential in Jombang Regency for public and potential tourist. One active role is creating an effective promotional media which can deliver information about tourism potentials.

Android-based game as promotional media for introducing tourism potential considered effective. Based on the test, this research have success to deliver information about three tourism potential in Jombang Regency, Kedung Cinet, Candi Rimbi, and Taman Ponggok. Furthermore, this research has produced support media such as trailer, stickers, and poster.

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