

**Developing A Philippine Hero Battle Arcade Game Using MUGEN in PC Platform**



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## ABSTRACT

With the advent of computer games in this technological era, it has come to an attention that many people, regardless of age, are hooked up with these computer games. These game enthusiasts have more or less little or no knowledge of the history of their nation due to their addiction to these games. With this issue at hand, this study focuses on developing a 2D fighting game in PC platform using MUGEN that would introduce a common ground with learning the story of 3 Philippine Heroes namely Lapu-lapu, Andres Bonifacio and Juan Luna. The advantage of this game is that it is catered in PC platform which is the most used computer gaming platform by the majority of game enthusiasts, aside from handheld ones. This study would act as a medium for learning apart from an engine of gaming and fun.

*Keywords: Arcade, Game Development, MUGEN, Philippine Heroes, Games, Lapu-lapu, Juan Luna, Andres Bonifacio.*

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background of the Study**

Nowadays, playing computer games is one of the favorite past times of people, young and young-alike. The production of computer games on different platforms is booming in this era, but with the booming of this computer games, young people are forgetting the history of their nation as they are hooked up in the games that they play. So, to provide a common ground with playing and learning a bit of history, the proponents propose an arcade fighting game that would also tell a simplified history of 3 chosen Philippine heroes – Andres Bonifacio, Lapu-lapu and Juan Luna. The proponents chose these three heroes to be the characters of the game due to the fact that their lives are known to be a battle, hence suitable characters for a fighting game.

### **1.2 Technology Application Context**

The present study seeks to answer the following general problem:

How to incorporate the learning of the life of history of Andres Bonifacio, Juan Luna and Lapu-lapu through an arcade fighting game using MUGEN in PC platform?

Specifically, it seeks to answer the following questions:

- How can the proponents make the learning of the life history of Andres Bonifacio, Juan Luna and Lapu-lapu interesting?

- How can we make the characters, stages, screen packs and some BGM's (background music) of the game?
- What are the basic components in creating an arcade game?

### **1.3 Objectives of the Study**

The general objective of this research is to incorporate the learning of the life of history of Andres Bonifacio, Juan Luna and Lapu-lapu through an arcade fighting game using MUGEN in PC platform.

The specific objectives are:

- To educate people on the life story of Andres Bonifacio, Juan Luna and Lapu-lapu in an interesting way.
- To know how to make the characters, stages and screen packs of the game.
- To know and apply the basic components in creating an arcade game such as sprite creation, animation, coding, etc.

### **1.4 Significance of the Study**

- The purpose of this game is not only for enjoyment but also to educate players of three Philippine heroes' life story (Andres Bonifacio, Juan Luna and Lapu-lapu), and to give them an idea of a part of the history of the Philippines while finding a common ground with playing games on PC.

## **1.5 Scope and Limitations of the Study**

- The study will generally focus on creating a game based on the history of three Philippine National Heroes – Andres Bonifacio, Juan Luna and Lapu-lapu. The game will have 3 modes namely Story Mode, Free Battle Mode (against another player) and Training mode. The story mode and free battle mode will only contain the three Philippine Heroes and nothing more. Other characters encountered in the story mode, such as the Spaniard soldiers and the boss character will not be available for play in all modes. The story of the heroes would not include their entire life story (e.g. from birth to death), rather it would only showcase some major parts of their life. The showcase of the story in the story mode would not be animated. It would only show a slideshow of pictures and captions depicting the life story of the hero. The game will be made in 2D form, working in a 1280x720 game resolution and will only be catered in PC platform. The game will only be using a 3 button command scheme plus a “start” button.

## **1.6 Definition of Terms**

- Arcade game – a classic game that adopts an isometric view, 2D graphics, scores, lives, etc., usually a coin-operated entertainment machine.
- MUGEN - is a freeware 2D fighting game engine designed by Elecbyte that enables creation of commercial-quality fighting games.
- C - is a general-purpose computer programming language.

- Fighter Factory - is a program that can be used to create characters, stages and screen packs for MUGEN. Its features include a definition editor, sprite editor, palette editor, animation editor, constants editor, commands editor and sound editor which are all needed in creating the characters, stages and screen packs for MUGEN.
- Screen packs – the graphics/images seen on every screen of the game.
- State – building blocks (codes) used to create simple as well as complicated moves.
- Story board – are graphic organizers in the form of illustrations or images displayed in sequence for the purpose of pre-visualizing a motion picture, animation, motion graphic or interactive media sequence.
- Simple DirectMedia Layer (SDL) library – is a cross-platform, free and open source multimedia library written in C that presents a simple interface to various platforms' graphics, sound, and input devices.
- Sprite – two-dimensional image or animation that is integrated into a larger scene.
- .SFF (Sprite file) – contains one or more sprites constructed from PCX images at 256 colors. Used for all sprites associated with the different parts of the engine, ranging from characters and stages to the screenpack itself.
- .DEF (Definition file) – define fields used within the procedure.
- .SND (Sound file) – contains one or more sounds constructed from WAV files.

- .CFG (Configuration file) – used solely by the MUGEN engine for game configurations.
- .AIR (Animation file) – a format that describes a set of animations; in MUGEN, describes a single sequence of sprites to display.
- .CNS (States file) – contains the states of the player, which describes all the moves that the character can do; defines the variables of the character, such as walking speed, drawing scale factor, and so on.
- .CMD (Command file) – contains declarations of command names and the definition State -1, a special state which is used to control how the character responds to user input.