CREATING A 3D INTERACTIVE NARRATIVE FOR THE MALAYSIAN EID FESTIVAL: EXPLORING THE REPRESENTATION OF MALAYSIAN MYTHS IN VIDEO GAMES



UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG PENGESAHAN STATUS LAPORAN

JUDUL: <u>CREATING A 3D INTERACTIVE NARRATIVE FOR THE MALAYSIAN EID</u> <u>FESTIVAL: EXPLORING THE REPRESENTATION OF MALAYSIAN MYTHS IN VIDEO GAMES</u>

SESI PENGAJIAN: 2022 / 2023	
Saya: <u>WAN NURUL NAJIHAH BINTI MC</u>	DHAMAD SABRI
mengaku membenarkan tesis Projek Sarjana Me Teknikal Malaysia Melaka dengan syarat-syarat	<u>.</u>
1. Tesis dan projek adalah hakmilik Univers	siti Teknikal Malaysia Melaka
1 0	mat dan Komunikasi dibenarkan membuat
salinan unituk tujuan pengajian sahaja.	
3. Perpustakaan Fakulti Teknologi Maklu	mat dan Komunikasi dibenarkan membuat
salinan tesis ini sebagai bahan pertukaran	antara institusi pengajian tinggi.
4. * Sila tandakan (✓)	
کنیک تا SULIT UNIVERSITI TEKNIKAL M	(Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA RASMI 1972)
TERHAD	(Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi / badan di mana penyelidikan dijalankan)
TIDAK TERHAD	
(TANDATANGAN PELAJAR)	(TANDATANGAN PENYELIA)
· · · · · · · - · · · · ·	
Alamat tetap: 19113, Taman Rawiyah	IKMAL FAIQ ALBAKRI BIN MUSTAFA ALBAKRI Pensyarah
Sulaiman Jaya, Batu 8 1/4 Jalan Gombak,	Ja Nama Renyelia i
53100 Kuala Lumpur,	Fakulti Teknologi Maklumat dan Komunikasi Universiti Teknikal Malaysia Melaka (UTeM)
<u>Selangor</u>	

Tarikh: <u>25/6/2023</u>

Tarikh: 24/6/2023_____

CREATING A 3D INTERACTIVE NARRATIVE FOR THE MALAYSIAN EID FESTIVAL:

EXPLORING THE REPRESENTATION OF MALAYSIAN MYTHS IN VIDEO GAMES

WAN NURUL NAJIHAH BINTI MOHAMAD SABRI



This report is submitted in partial fulfillment of the requirements for the Bachelor of [Information Technology (Game Technology)] with Honours.

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY UNIVERSITI TEKNIKAL MALAYSIA MELAKA

DECLARATION

I hereby declare that this project report entitled

CREATING A 3D INTERACTIVE NARRATIVE FOR THE MALAYSIAN EID FESTIVAL: EXPLORING THE REPRESENTATION OF MALAYSIAN MYTHS IN VIDEO GAMES

is written by me and is my own effort and that no part has been plagiarized

without citations.

STUDENT: WAN NURUL NAJIHAH BINTI MOHAMAD SABRI

Date: 20/6/2023

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

I hereby declare that I have read this project report and found this project report is sufficient in term of the scope and quality for the award of Bachelor of [Computer Science (Software Development)] with Honours.

SUPERVISOR : <u>IKMAL FAIQ BIN MUSTAFA ALBAKRI</u> Date : <u>20/6/2023</u>

DEDICATION

To my respected parents, who have always been my guides.



ACKNOWLEDGEMENTS

I express my deepest gratitude to Mr. Ikmal Faiq and Dr. Ulka Chandini Pendit for their invaluable guidance and help, which played a vital role in making this project a success. My sincere appreciation goes to my beloved parents, whose unwavering support and motivation have been the source of my strength throughout this journey. Finally, I would like to express my appreciation and gratitude to myself for the dedication and hard work invested in making this project a success.



ABSTRACT

This report focuses on the creation and development of the 3D interactive narrative PC game for the Malaysian Eid festival. The study focuses on the issue of low cultural diversity in video games, specifically Malaysian myths, and traditions. By undertaking this project, the aim is to explore the representation of Malaysian myths within the context of Malaysian Eid festival and simultaneously evaluate the game developed for the Malay festival of Eid, examining its usability. The game development process follows an agile approach, leading to various stages such as concept development, asset creation, programming, and testing. Unity engine serves as the primary tool for implementing these game development activities. Since the game is a singular ending narrative game, the game does not provide levels. Instead, it was designed with the objective of creating an engaging and immersive gaming experience that accurately portrays the essence of Malaysian traditions and includes mythological elements. Furthermore, the game includes sound environments associated Malaysian cultural practices. One of the key features of the game is the inclusion of player agency through dialogue choices. This interactive element allows players to shape the narrative path, offering a personalized and immersive storytelling experience. Through these narrative decisions, players can actively contribute to the unfolding of the game's events and engage more deeply with the Malaysian mythological themes presented. Finally, the project's main purpose is to create a fascinating game that not only celebrates Eid but also improves the representation of Malaysian myths in the field of video games. It hopes that by doing so, players will gain a better understanding and appreciation of Malaysian mythology and traditions. The project aims to encourage diversity, cultural preservation, and the study of different narratives within the gaming industry through an immersive and culturally enhanced gameplay experience.

ABSTRAK

Laporan ini memberi tumpuan kepada penciptaan dan pembangunan permainan naratif interaktif 3D untuk Festival Eid Malaysia. Kajian ini memberi tumpuan kepada isu kepelbagaian budaya yang rendah dalam permainan video, terutamanya mitos dan tradisi Malaysia. Dengan menjalankan projek ini, tujuannya adalah untuk meneroka pengwakilan mitos Malaysia dalam konteks Festival Eid Malaysia dan menilai kebolehgunaan permainan yang dibangunkan untuk perayaan Hari Raya Melayu. Proses pembangunan permainan mengikuti pendekatan yang cekap, melibatkan perkembangan konsep, penciptaan aset, pemrograman, dan ujian. Enjin Unity digunakan sebagai alat utama untuk melaksanakan aktiviti pembangunan permainan ini. Kerana permainan ini adalah permainan naratif dengan akhiran tunggal, permainan ini tidak mempunyai tahap-tahap. Sebaliknya, ia direka dengan tujuan mencipta pengalaman permainan yang menarik dan menyeronokkan yang melukiskan dengan tepat kebudayaan tradisi Malaysia dan merangkumi elemen mitologi. Selain itu, permainan ini merangkumi bunyi-bunyian persekitaran yang berkaitan dengan amalan budaya Malaysia. Salah satu ciri utama permainan ini adalah inklusifnya agensi pemain melalui pilihan dialog. Unsur interaktif ini membolehkan pemain membentuk cerita secara peribadi, memberikan pengalaman penceritaan yang lebih mendalam dan peribadi. Melalui keputusan-keputusan naratif ini, pemain dapat memberi sumbangan secara aktif kepada peristiwa dalam permainan dan terlibat secara lebih mendalam dengan tema-tema mitologi Malaysia yang disampaikan. Akhirnya, tujuan utama projek ini adalah untuk mencipta permainan yang menarik yang bukan sahaja meraikan Eid tetapi juga meningkatkan pengwakilan mitos Malaysia dalam bidang permainan video. Harapannya, dengan melakukan ini, pemain akan mendapatkan pemahaman dan penghargaan yang lebih baik terhadap mitologi dan tradisi Malaysia. Projek ini bertujuan untuk menggalakkan kepelbagaian, pemeliharaan budaya, dan kajian cerita berbeza dalam industri permainan melalui pengalaman permainan yang menyeronokkan dan diperkaya dengan unsur budaya.

TABLE OF CONTENTS

PAGE

DECL	ARATION	II
DECL	ARATION	II
DEDIC	CATION	III
ACKN	OWLEDGEMENTS	IV
	RACT	
ABSTI	AK EAK EACH	VI
	E OF CONTENTS	
LIST (OF TABLES او بنوم سینی تنصیب کاملات او بنوم سینی تنصیب کاملات او بنوم سینی تنصیب کاملات او بنوم سینی تنصیب کام	XI
LIST (OF ABBREVIATIONS	XIV
LIST (OF ATTACHMENTS	XV
CHAP	TER 1: INTRODUCTION	1
1.1	Project Background	1
1.2	Problem Statement	2
1.3	Objectives of the Project	3
1.4	Goals and Genre	4
	1.4.1 Goals	4
	1.4.2. Genre	5

1.5	Game Features	5
1.6	Conclusion	6
СНА	APTER 2: LITERATURE REVIEW AND PROJECT METHODO	LOGY.8
2.1	Introduction	8
2.2	Genre	9
2.3	Existing Games	10
	2.3.1 Life is Strange	11
	2.3.2 The Last of Us	11
	2.3.3 Heavy Rain	12
2.4	Comparison of Existing Games	13
2.5	Project Methodology	
2.6	Conclusion	19
СНА	APTER 3: ANALYSIS	
3.1	Requirement Analysis	21
	U3.1.1 EPProject Requirement L. MALAYSIA MELAKA	22
	3.1.2 Technical Requirement	23
	3.1.3 Software Requirement	23
	3.1.4 Hardware Requirement	23
3.2	Project Schedule and Milestone	24
3.3	Conclusion	26
СНА	APTER 4: DESIGN	27
4.1	Introduction	
4.2	Game Architecture	28
	4.2.1 Unity	28

	4.2.2	Blender	28
4.3	Game I	Design	31
	4.3.1	Gameplay	31
	4.3.1	Core Mechanics	32
	4.3.2	Flowboard	33
	4.3.3	Level Progression	36
	4.3.4	Storyline	37
	4.3.5	User Interface / Interaction Model	40
	4.3.6	Screen Layout and Navigation Structure	41
	4.3.7	Gaming Devices for the Player	41
	4.3.8	Transformation from Ideas on Paper to Digital	41
4.4	Game A	Art	42
	4.4.1	Game World	43
	4.4.2	Character Design	43
	4.4.3	Camera Model	45
	4.4.4	Audio/Sound Effect	47
4.5	Conclu	PSITI TEKNIKAL MALAYSIA MELAKA	48
СНА	PTER 5: 1	IMPLEMENTATION	49
5.1	Introdu	oction	49
5.2	Creatio	on of Game Art	49
	5.2.1	Production of Graphics	49
	5.2.2	Production of Audio	52
	5.2.3	Production of Video	53
5.3	Integra	tion of Game Components	54
5.4	Game (Configuration Management	57

	5.4.1 Configuration Setup	58
	5.4.2 Version Control Procedure	58
5.5	Implementation Status	58
5.6	Conclusion	50
СНАРТ	TER 6: TESTING6	51
6.1	Introduction	51
6.2	Test Plan6	51
6.3	Test Implementation	53
	6.3.1 Quantitative Analysis	53
	6.3.2 Qualitative Analysis 6.3.2	56
6.4	Test Results and Analysis	58
6.5	7او نبوتر سینی تیک پیکل ملیسیای مراد	70
СНАРТ	TER 7: PROJECT CONCLUSION	
7.1	Observation of Strength and Weaknesses	71
7.2	Proposition for Improvement	71
7.3	Contribution	72
7.4	Conclusion	72
REFER	ENCES7	74

LIST OF TABLES

	PAGI
Table 2.1: Comparison of Opinions on the game Life is Strange	14
Table 2.2: Game Features and Gameplay Comparison	15
Table 2.3: Cultural Representation Comparison	16
Table 3.1: Hardware Requirement	24
Table 5.1: List of Audio Clips with descriptions	53
Table 5.2: Development Progress Overview	59
Table 6.1: Example SUS Score Calculation	66
Table 6.2: General guideline on SUS Score interpretation	66
Table 6.3: SUS Scores from 16 participants	68

LIST OF FIGURES

PAG	ЗE
Figure 2.1: Life is Strange cover art (Xbox Store, 2015)	. 11
Figure 2.2: The Last of Us cover art (Steam,2023)	.11
Figure 2.3: Heavy Rain cover art (Steam, 2020)	. 12
Figure 2.4: Game Development Life Cycle (GDLC)	. 17
Figure 2.5: Agile Model	. 18
Figure 3.1: Gantt Chart for the development of the 3D interactive narrative ga	ıme
for the Malaysian Eid celebration	. 25
Figure 4.1: Game Architecture Diagram	
Figure 4.2: Core mechanic framework	. 33
Figure 4.3: Flowboard Illustration	
Figure 4.4: Flowboard Illustration	.35
Figure 4.5: Hierarchy of challenge	.36
Figure 4.6: Sketched Storyline	. 40
Figure 4.7: Screenshot of the Game world	. 43
Figure 4.8: Young adult character design	. 44
Figure 4.9: Adult female character design	. 45

Figure 4	4.10: <i>A</i>	Adult male	character desi	gn	•••••	••••••	•••••	45
Figure 4	4.11: S	Screenshots	s of player's pe	erspec	ctive (third-pe	rson per	spec	ctive) 46
Figure	5.1:	Original	Appearance	vs.	Customized	Outfit	-	Character
Transfo	ormati	on	•••••	•••••	•••••	•••••	•••••	51
Figure	5.2:	Original	Appearance	vs.	Customized	Outfit	-	Character
Transfo	ormati	on	•••••	•••••	•••••	••••••	•••••	51
Figure :	5.3: Sı	nippet code	e for player cor	ntroll	er	••••••	•••••	56
Figure :	5.4: Sı	nippet code	e for dialogue o	ption	n menu	••••••	•••••	57
Figure	6.1: E	valuation f	low for researc	ch pr	oposed method	ł	•••••	63



LIST OF ABBREVIATIONS

3D - Three Dimensional

NPC - Non-Player Characters

GDLC - Game Development Life Cycle

GDD - Game Design Document

UI User Interface

UX - User Experience

SUS System Usability Scale

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

LIST OF ATTACHMENTS

		PAGE
Appendix A	TPP_Controller Script Source Code	74
Appendix B	OptionMenu Script Source Code	75
Appendix C	SMK Wangsa Maju Seksyen 2 Testing	88
MALAYSIA	Event	
Appendix D	System Usability System (SUS)	89
Appendix E	Expert Review Questions	90
مليسيا ملاك	اونيوسيتي تيكنيكل	
UNIVERSITI TI	FKNIKAI MALAYSIA MELAKA	

CHAPTER 1: INTRODUCTION

1.1 Project Background

This chapter provides an overview of the project and its background. The aim of this research is to develop a 3D interactive narrative game for the Malaysian Eid festival and focusing on the representation of Malaysian myths in video games. The project will be developed using the Unity game engine and will target young adults between the ages 18 to 25.

Video games have become a popular form of entertainment, offering players the opportunity to experience various cultures and traditions. However, most video games currently available focus on Western civilization, neglecting other parts of the world. This research aims to address this issue by creating a game that commemorates the Malaysian Eid festival, an important cultural event in Malaysia.

The core gameplay mechanic relies on completing tasks in order to move forward in the game. Players will be presented with various objectives that they need to fulfil to proceed the story. These objectives may involve finding hidden items, or interact with doors to go inside the building. The successful completion of objectives will reveal deeper layers of the narrative, or enable interactions with non-player characters (NPCs). However, it is important to note that if players fail to complete an objective, their progress will be hindered. In such cases, player will be limited in their interactions with NPCs, except for communicating with their own character. This

restriction is intended to emphasize the importance of completing objectives and progressing through the game's narrative.

The decision to use the Unity game engine was influenced by my knowledge and familiarity with the engine since the start of my degree program. The Unity game engine will be used because of the capabilities in creating 3D worlds and enabling interactive gameplay. The game will try to capture the sights and sounds of Eid representing the intriguing Malaysian mythical legends. In addition, to enhance the immersion and engagement, the game will feature dialogue options that allow players to make choices and cause the outcome of certain events.

By creating this game, the project aims to increase the representation of Malaysian myths in video games, providing players with a unique perspective on Malaysian culture and encouraging a greater understanding of Malaysian myths and traditions. In terms of gameplay mechanics, players will not only progress in the game by completing objectives but also gain a deeper understanding of the Malaysian Eid celebration and the meaning of its mythical legends.

1.2 Problem Statement

The lack of representation of mythical stories in video games is a significant issue that has been a topic discussion and critique within the gaming community (Smith, 2022; Johnson, 2019). Currently, there are few video games that depict the rich mythical stories of Malaysia (Gupta,2020; Lee, 2018). This gap in representation raises concerns among individuals and researches about the limited portrayal of diverse mythologies and folklore in video games, which can contribute to a lack of cultural representation and an incomplete understanding of different cultural narratives (Jones, 2021; Brown, 2017).

To address this issue, this study proposes the development of a 3D interactive narrative game for the Malaysian Eid festival. The game will explore how Malaysian mythical stories are represented in video games, aiming to create an immersive experience for players that celebrates the cultural heritage and promotes a more diverse representation of mythologies in video games (Smith, 2022; Gupta, 2020). This project seeks to fill the need of Malaysian mythical story representation in the gaming industry

and provide players with a deeper understanding and appreciation of Malaysia's cultural narratives (Lee, 2018; Johnson, 2019).

By developing a game specifically dedicated to the Malaysian Eid festival and incorporating Malaysian mythical stories, this project aims to address the problem of underrepresentation. The game will offer players a unique and engaging experience that allows them to explore and interact with the captivating myths and legends of Malaysia. Through immersive gameplay, players will gain a deeper understanding and appreciation for Malaysian culture and mythology. Moreover, the lack of representation of Malaysian mythical stories in video games limits the cultural exchange and exposure that can be achieved through this medium. By creating a game that highlights the beauty and significance of Malaysian myths, the project seeks to promote cultural diversity and encourage the integration of various narratives into the gaming industry.

Additionally, most games that attempt to incorporate cultural elements often utilize the relationship systems to provide the story between the player character and NPCs. However, in this project, which is inspired by Life is Strange, the focus will be on a dialogue system and the ability for players to trigger cutscenes based on the dialogue options they select. The project's approach is to give players authority over the story while immersing them in the Malaysian Eid celebration experience.

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Therefore, the development of a 3D interactive narrative game for the Malaysian Eid festival is crucial to address the problem of limited representation of Malaysian mythical stories in video games. This project aims to bridge the gap and provide a platform for the immersive exploration and appreciation of Malaysian culture and heritage within the gaming community, while offering players an innovative approach to storytelling through a dialogue system and player-triggered cutscenes.

1.3 Objectives of the Project

This section summarizes the objectives of the project, highlighting the primary goals and outcomes that the 3D interactive narrative game for the Malaysian Eid holiday wants to achieve.

- **Objective 01:** To study the mythical stories in Malaysia in order to create an immersive environment that accurately represents the sight and sounds of Eid.
- **Objective 02:** To develop a 3D interactive narrative game for the Malay festival that explores the representation of cultural customs and traditions in video games.
- **Objective 03:** To evaluate the game developed for the Malay festival of Eid, examining its usability.

1.4 Goals and Genre

The goals and genre of the game provide important context for understanding the purpose and direction of the project.

1.4.1 Goals

The game is designed with two primary goals in mind:

1. Entertainment

The game's primary goal is to deliver an engaging and enjoyable experience for players. Through an intriguing plotline and captivating gameplay mechanics, the game aims to immerse players in a thrilling adventure that keeps them entertained throughout their journey. The focus is on providing an experience that is not only entertaining but also memorable and enjoyable.

2. Cultural Appreciation

The game seeks to promote cultural understanding and appreciation of Malaysian myths and traditions. By allowing players to explore the heritage related to the Malaysian Eid celebration, the game aims to foster a deeper connection with Malaysian culture. Through interactive experiences and encounters with elements of Malaysian mythology, players will gain insights into the traditions, customs, and mythical stories that are integral to the cultural fabric of Malaysia.

1.4.2 Genre

The game belongs to the genre of Interactive Narrative. This genre places a strong emphasis on storytelling and player-driven choices that shape the progression of the narrative. Players engage in immersive storytelling, making decisions that have significant consequences on the development of the game's storyline. The core gameplay mechanics revolve around completing tasks and objectives, which are essential for advancing further in the game.

Throughout the game, players will encounter various objectives, such as locating hidden items or interacting with specific elements within the environment. These tasks serve as milestones for progressing through the narrative and unveil deeper layers of the story. Successful completion of objectives unlocks interactions with non-player characters (NPCs), enabling players to further immerse themselves in the game's world. Conversely, failure to achieve objectives may limit the player's interaction with NPCs, underscoring the importance of completing missions and advancing the narrative.

By incorporating the interactive narrative genre, the game provides players with an immersive storytelling experience, empowering them to shape the course of the game's events through their choices and actions.

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

1.5 Game Features

The gaming features are intended to provide an interesting and immersive experience that highlights Malaysia's mythical stories and celebrates the Malay festival of Eid. The following are the game's main components:

1.5.1.1 Target Players

Players that enjoy interactive storytelling, cultural exploration, and mythology are likely to enjoy this game. Although it is target for young adults around 18 to 25 years old, the target audience also includes people who enjoy narrative-driven experience and are curious about other cultures. The game seeks to engage to both gamers and non-gamers who are interested in Malaysian myths and traditions.

1.5.1.2 Rules of the Game

Players will interact with different objects, characters, and environments as they move around the game universe. To advance throughout the story, they must achieve specified tasks and objectives. The game will give players options that might change the story's direction and affect the outcomes. Exploration, puzzle-solving, and dialogue-based interactions will also be included.

1.5.1.3 Victory/Termination Condition

The game's win condition will be based on successfully completing the primary goals while progressing through the plot. Players will be rewarded with deeper insights into Malaysian myths as well as the joy of completing the story. However, there will be no termination condition for this game.

1.5.1.4 Gameplay Experience

The gameplay will consist of exploration, puzzle solving, and interactive dialogue sections. Players will be able to find secret clues, solve riddles, and engage in meaningful dialogues with NPCs. The detailed visuals, dramatic sound design, and fascinating storytelling will bring the immersive game world to life. The game's goal is to let players feel emotional connections to the characters and mythical stories, developing empathy and respect.

1.6 Conclusion

The goal of this project is to create a 3D interactive narrative game that displays Malaysia's mythical traditions, with particular focus on the Malay celebration of Eid. The game aims to address the lack of representation of Malaysian mythology in video games and promote cultural awareness among players by incorporating interactive gameplay elements and immersive storytelling.

The game's basic gameplay mechanic relies on accomplishing goals to advance the plot. Players will face a variety of chores and difficulties that they must complete in order to unlock deeper aspects of the story. Players will participate in the interesting stories and traditions of Malaysia through exploration, puzzle-solving, and dialogue-based exchanges, ultimately defining their own path and consequences.

By immersing players in an interactive narrative experience, the game aims to create an engaging and enjoyable gameplay experience while simultaneously developing a deeper connection with the historical and cultural significance associated with the Malaysian Eid festival. The dialogue system, along with the restriction on NPC interactions until objectives are completed, emphasizes the importance of progressing through the game's narrative and completing objectives.

The expected outcome of this study is to create an engaging game that displays the mythical stories of Malaysia. By developing a game that celebrates the Malay festival of Eid, this study aims to increase the representation of mythical stories in video games and foster empathy and appreciation among players. The evaluation of the game will provide insights into the game's usability.

Finally, this project aims to create an immersive and culturally improving gaming experience, inviting players to journey into the fascinating world of Malaysian myths, celebrate the Malay festival of Eid, and gain a deeper appreciation for Malaysia's diverse narratives and traditions. In the upcoming sections of Chapter 2, we will look into the methodology used in the development of the game, further exploring how cultural representation and the core gameplay mechanics, including the dialogue system, are integrated to create an authentic and engaging experience for players