



Faculty of Computer Science and Information Technology

***"NYAMAI MAI!": IBAN TRADITIONAL RECIPE COOKING GAME FOR
MOBILE DEVICES***

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**Bachelor of Computer Science with Honors
(Multimedia Computing)**

2025

**"NYAMAI MAI!": IBAN TRADITIONAL RECIPE COOKING GAME FOR MOBILE
DEVICES**

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This project is submitted in partial fulfillment of the
requirements for the degree of
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UNIVERSITI MALAYSIA SARAWAK

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**"NYAMAI MAI!": PERMAINAN MEMASAK RESEPI TRADISIONAL IBAN
UNTUK PERANTI MUDAH ALIH**

AZHAD HAZIQ BIN YUSRI

Projek ini merupakan salah satu keperluan untuk
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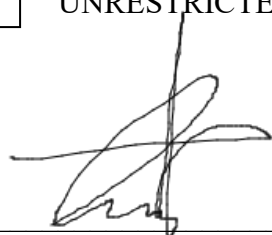
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ABSTRACT

Traditional cuisine is an essential part of cultural heritage. However, younger generations are becoming increasingly disconnected from these culinary traditions due to a modernization and changing lifestyles. With the widespread use of mobile devices, mobile games have become one of the most accessible platforms for engaging and educating users in an interactive way. This project focuses on developing a 2D mobile cooking game using Android as the platform, designed to introduce players to traditional Iban cuisine. The game combines storytelling and interactive gameplay to engage users while educating them about Iban cooking recipes. This game aims to foster appreciation for Malaysia's diverse food heritage among younger generations. The game not only serves as an entertainment medium but also as a tool to promote cultural preservation in an engaging and accessible format.

ABSTRAK

Masakan tradisional merupakan sebahagian penting daripada warisan budaya. Namun, generasi muda semakin terputus hubungan dengan tradisi kulinari ini akibat pemodenan dan perubahan gaya hidup. Dengan penggunaan peranti mudah alih secara meluas, permainan mudah alih telah menjadi salah satu platform paling mudah diakses untuk menarik minat dan mendidik pengguna secara interaktif. Projek ini memberi tumpuan kepada pembangunan permainan memasak mudah alih 2D menggunakan platform Android, yang direka untuk memperkenalkan pemain kepada masakan tradisional Iban. Permainan ini menggabungkan penceritaan dan elemen permainan interaktif bagi menarik minat pengguna sambil mendidik mereka tentang resipi masakan Iban. Permainan ini bertujuan untuk memupuk penghargaan terhadap warisan makanan Malaysia yang pelbagai dalam kalangan generasi muda. Selain berfungsi sebagai medium hiburan, ia juga menjadi alat untuk mempromosikan pemeliharaan budaya dalam format yang menarik dan mudah diakses.

TABLE OF CONTENTS

DECLARATION	i
ACKNOWLEDGEMENT	ii
ABSTRACT	iii
ABSTRAK	iv
TABLE OF CONTENTS	v
List of Figures	vii
List of Tables	ix
CHAPTER 1 INTRODUCTION	1
1.1 Introduction	1
1.2 Problem Statement	2
1.3 Aims & Objectives	2
1.4 Scope	3
1.5 Brief Methodology	3
1.6 Significance of Project	4
1.7 Project Schedule	5
1.8 Expected Outcome	6
CHAPTER 2 LITERATURE REVIEW	7
2.1 Overview	7
2.2 Review of Existing Games : Taste of Malaysia	7
2.3 Review of Existing Games : Venba	8
2.4 Review of Existing Games : Little Chef	10
2.5 Comparison of Existing Games	12
2.6 Conclusion	12
CHAPTER 3 METHODOLOGY	13
3.1 Overview	13
3.2 Methodology	13
3.3 Requirement Analysis	28
3.4 Conclusion	29
CHAPTER 4 IMPLEMENTATION	30
4.1 Overview	30

4.2 Designing Game Interface and Assets	30
4.3 Game Scenes	32
4.4 Dialog System	42
4.5 Scoring System	44
4.6 Conclusion	46
CHAPTER 5 TESTING	47
5.1 Overview	47
5.2 Testing Criteria and Methods	47
CHAPTER 6 CONCLUSION AND FUTURE WORK	59
6.1 Overview	59
6.2 Conclusion	59
6.3 Future Improvement	60
References	61

List of Figures

Figure 2.1 Taste of Malaysia Gameplay	7
Figure 2.2 Venba Gameplay	9
Figure 2.3 Little Chef Gameplay	10
Figure 3.1 ADDIE Model	13
Figure 3.2 Respondents' Age	15
Figure 3.3 Respondents' Origin by State in Malaysia	15
Figure 3.4 Respondents' Awareness of Iban Cuisine	16
Figure 3.5 Primary Sources of Information on Iban Cuisine	16
Figure 3.6 Familiarity with Iban Dishes	17
Figure 3.7 Self-Rated Knowledge of Iban Cuisine	17
Figure 3.8 Interest in Learning Iban Cuisine	19
Figure 3.9 Interest of Iban Cuisine's Aspects	19
Figure 3.10 Interest in Iban Cuisine Cooking Game	20
Figure 3.11 Preferred Cooking Game Mechanics	21
Figure 3.12 Preference for Storyline	21
Figure 3.13 Game Flowchart	24
Figure 3.14 Narrative Introduction's Storyboard	25
Figure 3.15 Main Menu Interface	26
Figure 3.16 Level Design	26
Figure 3.17 Character Design	27
Figure 4.1 Sprites of Kitchen Equipment	30
Figure 4.2 Sprites of Iban Cuisine	31
Figure 4.3 Main Menu Scene	32
Figure 4.4 Cutting Scene	33
Figure 4.5 Marinade Scene	34
Figure 4.6 Recipe 1 Mixing Scene	35
Figure 4.7 Chopping Scene	36
Figure 4.8 Recipe 2 Grinding Scene	37
Figure 4.9 Cooking Scene 1	38

Figure 4.10	Cooking Scene 2	38
Figure 4.11	Recipe 3 Grinding Scene	40
Figure 4.12	Recipe 3 Mixing Scene	41
Figure 4.13	Stuffing Scene	41
Figure 4.14	Recipe 3 Cooking Scene	42
Figure 4.15	Story Dialog	43
Figure 4.16	Instruction Dialog	44
Figure 4.17	Score Bar UI	44
Figure 4.18	Inek Icon	45

List of Tables

<i>Table 1.1 Project Schedule</i>	<i>5</i>
Table 2.1 Existing Games and Proposed Game Comparison	12
Table 3.1 Hardware and Software Requirement	28
Table 3.2 User Requirement	29
Table 5.1 Functionality Testing Result for Recipe 1 Dialog and Instruction	48
Table 5.2 Functionality Testing Result for Recipe 1 Game Mechanics and Interaction .	49
Table 5.3 Functionality Testing Result for Recipe 1 Phase Transition	50
Table 5.4 Functionality Testing Result for Recipe 2 Dialog and Instruction	51
Table 5.5 Functionality Testing Result for Recipe 2 Game Mechanics and Interaction .	52
Table 5.6 Functionality Testing Result for Recipe 2 Phase Transition	53
Table 5.7 Functionality Testing Result for Recipe 3 Dialog and Instruction	55
Table 5.8 Functionality Testing Result for Recipe 3 Game Mechanics and Interaction .	56
Table 5.9 Functionality Testing Result for Recipe 3 Phase Transition	57

CHAPTER 1

INTRODUCTION

1.1 Introduction

In recent years, the gaming industry has witnessed exponential growth, becoming significant component of global entertainment and culture (Sanjaya et al., 2023). This growth is not only limited to entertainment. Additionally, educational games are also increasingly recognized for their potential to enhance learning through engagement and interactivity (Cavus et al., 2023). Through gamification, complex subjects can be made accessible, promoting better understanding and knowledge retention (Jaramillo-Mediavilla et al., 2024).

This trend has created opportunities to leverage games for preserving and promoting cultural heritage. The Iban tribe, one of the largest indigenous communities in Sarawak, Malaysia, possesses a rich cultural heritage (MdNazri, 2018). Despite their historical significance, the unique cooking methods and traditional dishes of the Iban tribe are relatively unknown to the wider public. This necessitates efforts to document and showcase these culinary practices to local audiences, ensuring the preservation of this invaluable cultural knowledge.

This project addresses the need to preserve the Iban culinary practices by developing an educational cooking games that immerses players in the traditional Iban cuisine. It introduces players to the techniques and the ingredients used to prepare authentic Iban cuisine. The game offers a more engaging way to learn, particularly for young adults who will be the next in line to carry on these traditions.

Ultimately, this project hope to serves as a cultural preservation tool and ensure that Iban culinary practices are not only preserved, but also celebrated.

1.2 Problem Statement

The gradual loss of traditional indigenous cooking practices is a growing concern. Many people are moving away from these methods, which are important for cultural identity and heritage.

There is a lack of engaging platforms to educate the public about these cooking traditions. Most resources available online are just videos or recipes, which may not capture the full experience of cooking.

Although there are many cooking games, none focus on Malaysian indigenous cuisine. Most Malay cooking games highlight popular dishes like Nasi Lemak or Rendang, overlooking the rich variety of traditional recipes.

1.3 Aims & Objectives

The main aims of "Nyamai Mai!" are to reconnect young Malaysians with their culinary heritage. The specific objectives of the project are:

1. To develop a 2D cooking game that introduces players to the techniques and ingredients used in traditional Iban dishes.
2. To design engaging storyline that reflects Iban's tribe cultural heritage, enhancing the educational experience.
3. To create an immersive cultural experience through visuals and sounds representing Iban's culture or ethnicity.

1.4 Scope

The following are the scopes of this project:

- The game will focus on the traditional culinary practices of the Iban tribe, highlighting their unique dishes, cooking methods, and local ingredients.
- The game will target local Malaysian players primarily appealing to young adults.
- It will be a 2D cooking game available on mobile platforms.

1.5 Brief Methodology

For this project, the ADDIE model is chosen as it provides a structured approach that suits the development of educational content. Abuhassna et al. (2024) stated that various projects employ the ADDIE approach to design training courses, instructional games, and materials aimed at enhancing learning outcomes. It allows for systematic progression through each stage of development while ensuring that each step addresses both educational goals and user experience.

Analyze : Identify key educational components, focusing on traditional Iban cuisine.

Design : Plan the game mechanics, storyline, and interactive elements around Iban culinary heritage.

Develop : Create the game assets, including sprites, recipes, and cooking mechanics.

Implement : Test the game prototype, focusing on the effectiveness of educational content and user engagement.

Evaluate : Conduct both formative (ongoing) and summative (end of development) evaluations to assess whether the game meets its educational objectives.

1.6 Significance of Project

The "Nyamai Mai!" cooking game will serve as an innovative platform to introduce Iban cuisine to a wider audience. It offers a fresh and engaging approach to learn about this traditional cuisine

The game will educate players, especially young adults, about Iban cooking techniques and ingredients. Through interactive gameplay, it combines learning with entertainment, making the preservation of cultural traditions both fun and accessible.

Finally, the game will also play a key role in preserving Iban traditional recipes. By focusing on indigenous cooking practices, it helps safeguard cultural heritage that is at risk of being forgotten by younger generations.

1.7 Project Schedule

Table 1.1 Project Schedule

No.	Tasks	Start	Finish	Working Days
1.	Approach Lecture for Supervising the FYP.	16/10/2024	17/10/2024	2 days
2.	Finalizing Brief Proposal	17/10/2024	18/10/2024	2 days
3.	Submission of the Brief Proposal	20/10/2024	20/10/2024	1 day
4.	Feedback and Comment from Reviewer/Examiner	28/10/2024	1/11/2024	5 days
5.	Finalizing Full Proposal	6/11/2024	14/11/2024	7 days
6.	Submission of Full Proposal	15/11/2024	15/11/2024	1 days
7.	Finalizing Chapter 1	15/11/2024	20/11/2024	4 days
8.	Submission of Chapter 1	21/11/2024	21/11/2024	1 day
9.	Finalizing Chapter 2	25/11/2024	12/12/2024	14 days
10.	Submission of Chapter 2	13/12/2024	13/12/2024	1 day
11.	Finalizing Chapter 3	17/12/2024	3/1/2025	14 days
12.	Submission of Chapter 3	5/1/2025	5/1/2025	1 day
13.	Finalizing FYP 1 Final Report and Paper for Assessment	6/1/2025	11/1/2025	5 days
14.	Final Submission of FYP 1 Final Report and Paper for Assessment	12/1/2025	12/1/2025	1 day
15.	Reserved for Presentations if any	24/1/2025	26/1/2025	3 days

1.8 Expected Outcome

The expected outcome of the project is a mobile cooking game that effectively incorporates traditional Iban recipes. This will allow players to learn about Iban cuisine in an interactive way.

Secondly, the game will be user-friendly and appealing to young adults. This is to ensure that all player can easily engage and explore Iban cuisine.

Finally, the game will deliver a fully functional mobile cooking game. This is to ensure a smooth gameplay and a seamless experience across devices.

CHAPTER 2

LITERATURE REVIEW

2.1 Overview

This chapter explores existing games in the same field and analyzes their features and approaches. It aims to identify gaps and areas for improvement and demonstrates how the proposed project can offer unique contributions and advancement in the realm of cooking games.

2.2 Review of Existing Games : Taste of Malaysia

“Taste of Malaysia” is a dynamic cooking game developed to familiarize players with classic Malaysian dishes via fun gameplay. Players take the role of a teenage daughter acquiring the skill to prepare genuine Malaysian meals with her mother’s help. The game includes cultural aspects and traditional culinary methods, making it both informative and enjoyable.



Figure 2.1 Taste of Malaysia Gameplay

The game includes a drag-and-drop feature, where players move ingredients into the cooking vessel at the center of the screen. It also offers varying difficulties levels, where segments of cooking instructions are concealed or removed that challenge the players to guess the next steps. Players are given three lives per round with incorrect steps resulting in a deduction of lives. Once all lives are lost, the game must be restarted. Additionally, the game incorporates narrative dialogue, where brief conversations between a mother and daughter enhance the familial themes. The game also emphasizes the importance of preserving Malaysian culinary traditions.

The major advantage is its promotion of traditional Malaysian cuisine. The interactive elements of the game encourage players to use their recall and analytical skills to provide engaging challenge. The interaction mechanic, primarily drag-and-drop is easy to understand by wide audience.

The disadvantage is that the game features traditional Malaysian dishes that are already well-known, which may reduce the novelty for some players. Additionally, the game does not clarify the origin the dishes. The narrative design of the game is too short, which is only a brief conversation before each level. This makes the gameplay less immersive.

2.3 Review of Existing Games : Venba

"Venba" is a story-focused cooking game that explores the journey of an Indian immigrant family residing in Canada. The game emphasizes storytelling via cuisine, as participants honor traditional Tamil recipes while facing challenges related to cultural identity, familial connections, and adjusting to a different setting. Its focus

on cultural traditions and heartfelt narratives distinguishes it as a distinctive entry in the cooking game genre.



Figure 2.2 Venba Gameplay

This game incorporates cultural narratives by blending culinary arts with a heartfelt family story focused on preserving cultural heritage in an unfamiliar setting. Players are tasked with creating traditional Tamil dishes by following detailed instructions that required analytical skills to complete unfinished recipes. Dialogue-focused gameplay enhances the experience, with in-depth character conversations exploring themes like love, sacrifice, and identity. The game's visual and audio aesthetics are vibrant and reflective of Indian culture that enhance the immersion.

A key advantage of the game is its emphasis on the importance of traditional food to preserve and communicate cultural heritage. The powerful, relatable storyline captivates players and create an emotional connection with the characters and the cultural themes presented. The game also offers a visually stunning and culturally rich

experience that combine artwork and authentic music to provide a deep and immersive environment for players.

The drawback is the game's failure to specify the regions or states in India where the dishes originate. Additionally, the game is set in Canada, which could limit the cultural immersion associated with background surroundings. The strong focus on storytelling may also overshadow the cooking mechanics and potentially driving attention away from the main gameplay.

2.4 Review of Existing Games : Little Chef

"Little Chef" is a 2D cooking game based on physics that highlights player creativity and discovery. Developed by Julien, Danny van Duist, and Hello Erika, the game offers a kitchen setting where players can try out given ingredients to discover different recipes. Its distinct combination of straightforwardness and humor, along with physics-based interactions, distinguishes it in the casual gaming category.



Figure 2.3 Little Chef Gameplay

The game features a drag-and-drop system that allows users to interact with ingredients and cooking tools in a simple and intuitive manner. Unlike other games, there are no recipes or instructions. Players must experiment and combine various

ingredients to discover the 40 unique recipe hidden within the game. Upon successfully unlocking all recipes, players receive a completion badge as a reward. Additionally, the game offers unexpected “terrible meals” alongside regular recipes that add the fun and humorous twist to the experience.

The main advantage of this game is its emphasis on innovation and creativity because players are encouraged to experiment and discover recipes on their own. The playful and humorous approach makes the game particularly appealing to casual gamer. Its simple mechanics physics-driven interaction make it accessible to players of all ages that ensure anyone can easily enjoy the game without complex learning curves.

A significant disadvantage is the absence of storytelling or cultural context. The lack of clear guidelines could also frustrate players who prefer more structured and organized gameplay. Additionally, the game misses an opportunity to expose any specific culture or local cuisine.

2.5 Comparison of Existing Games

Table 2.1 Existing Games and Proposed Game Comparison

Feature	Taste of Malaysia	Venba	Little Chef	Proposed Game (Nyamai Mai!)
General Cultural Focus	Yes	Yes	No	Yes
Specific Indigenous Cuisine Focus	No	No	No	Yes
Simple Game Mechanics	Yes	Yes	Yes	Yes
Narrative Element	Yes	Yes	No	Yes
Cultural Audio Aesthetic	No	Yes	No	Yes
Cultural Visual Aesthetic	No	Yes	No	Yes
Recipe Archive Feature	No	No	No	Yes
Educational Value	Yes	Yes	No	Yes

2.6 Conclusion

The comparison highlights that while existing game like “Taste of Malaysia” and “Venba” incorporate general cultural elements and educational value, they do not focus specifically on indigenous cuisine. “Little Chef” on the other hand, lacks both cultural elements and educational value. The proposed game stands out by uniquely focusing on specific indigenous cuisine of the Iban tribe, and incorporate features like recipe archives and aesthetic visuals and audio that reflect the Iban culture. This distinction underscore its potential to offer more immersive gaming experience.

CHAPTER 3

METHODOLOGY

3.1 Overview

This chapter outlines the methodology used in developing Nyamai Mai!. Additionally, this chapter cover the project's requirements, including hardware, software, and user needs, which are crucial for the successful implementation of the game.

3.2 Methodology

As mention in Chapter 1, The ADDIE model serves as the guiding framework for this project. Figure 3.1 shows the stages of this project using the ADDIE model. All five phases: Analyze, Design, Develop, Implement, and Evaluate provide a structured and systematic approach to game development. Each phase will be explained in detail to illustrate how they are applied throughout this project's development.



Figure 3.1 ADDIE Model

3.2.1 Analyze

The Analyze phase set the direction for this project. During this phase, a survey was conducted among 60 respondents to assess their awareness and interest in Iban traditional cuisine, and to gather preferences for game features. Additionally, a comparative analysis of existing cooking games was conducted in Chapter 2, which helped highlight the distinctive features of the proposed game. The insights from the survey and analysis were crucial in shaping the game's focus, ensuring it align with players' interests and educational goals. The survey findings will be discussed in detail in the following section.

3.2.1.1 Survey Key Findings

The survey was conducted using a questionnaire via Google Forms. The questionnaire was structured into five sections that include Demographic Information, Awareness of Iban Cuisine, Interest and Engagement, Game Preferences, and Feedback and Suggestions. The following summarizes the key findings from each section:

Demographic Information

The survey collected responses from a total of 60 participants. The first section emphasizes the background of the respondents aligning with the project's scope.

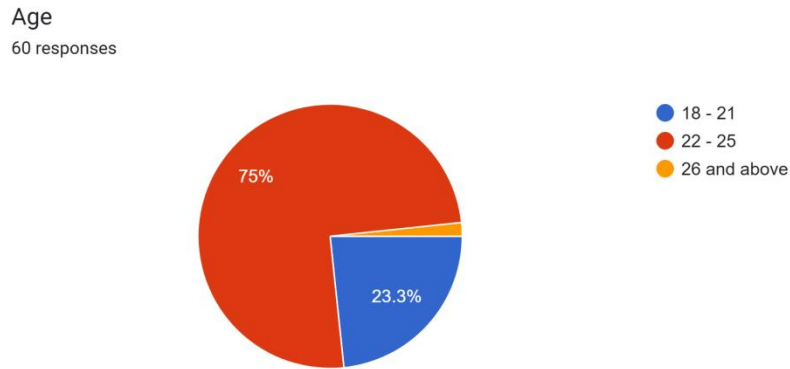


Figure 3.2 Respondents' Age

Figure 3.2 shows the distribution of respondents by age group. The majority of respondents (75%) was in the 22-25 age range. This age group is significant because it represents young adults who align with the target audience for the game. An additional 23.3% were in the 18-21 age range, while 1.7% were 26 and above.

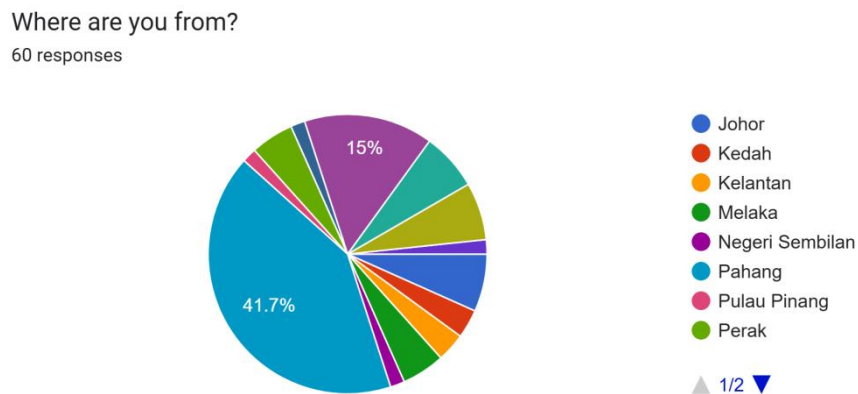


Figure 3.3 Respondents' Origin by State in Malaysia

Figure 3.3 shows the distribution of respondents by state in Malaysia. In terms of geographical distribution, 41.7% of respondents were from Pahang, while 15% were from Sarawak, and the remaining 43.3% came from other states in Malaysia. The diverse representation is important as it ensures the survey reaches broader audience, not limited to Sarawak, where the Iban ethnic group is primarily located.

Awareness of Iban Cuisine

The survey results in Figure 3.4 below show that 56.7% of respondents have heard of Iban traditional cuisine before.

1. Have you ever heard of Iban traditional cuisine before?

60 responses

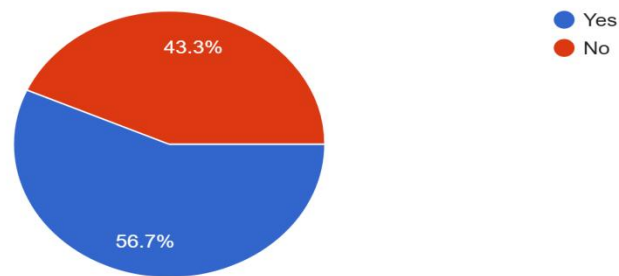


Figure 3.4 Respondents' Awareness of Iban Cuisine

2. If 'Yes', where have you primarily learned about Iban Cuisine? (Select all that apply)

34 responses

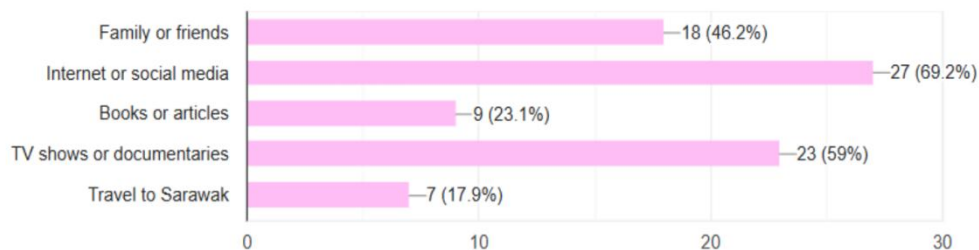


Figure 3.5 Primary Sources of Information on Iban Cuisine

When asked where they primarily learned about Iban cuisine, the majority answered the internet and social media as their main platforms (refer to Figure 3.5). Since these platforms are easily accessible via mobile devices, this cooking game have a potential to attract a large audience because it will be deployed in mobile

devices too. It can serve as an innovative platform to introduce Iban cuisine to a wider audience, offering a fresh and engaging way to learn.

3. Which of the following Iban dishes are you familiar with? (Select all that apply)
60 responses

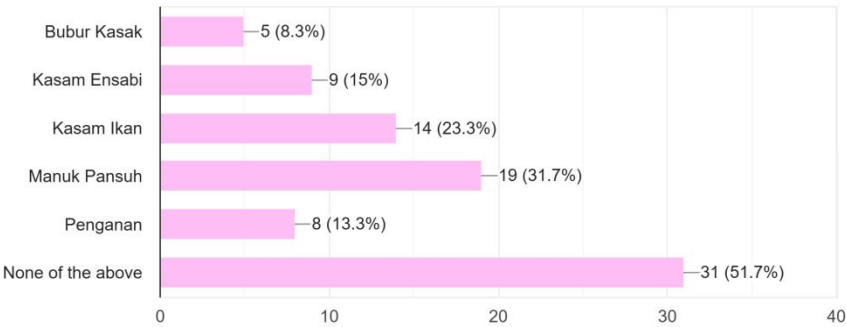


Figure 3.6 Familiarity with Iban Dishes

The responses to the question on familiarity with Iban dishes revealed that a significant portion of respondents, 31 individuals (51.7%), indicated that they were not familiar with any of the listed Iban dishes. The most recognized dish was *Manuk Pansuh* (Iban-style chicken cooked in bamboo), with 19 respondents (31.7%) identifying it as a dish they knew (refer to Figure 3.6). This result highlights a gap in awareness of Iban cuisine, emphasizing the need for the game to provide education on a broader range of Iban dishes.

4. How would you rate your overall knowledge of Iban cuisine?
60 responses

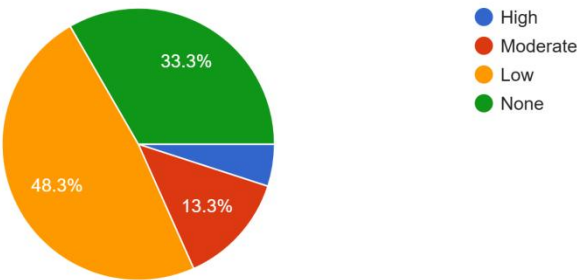


Figure 3.7 Self-Rated Knowledge of Iban Cuisine

Figure 3.7 shows the respondents' overall knowledge of Iban cuisine. 48.3% of respondents rated their knowledge as low, with 33.3% having no knowledge at all. Only 13.3% rated their knowledge as moderate, and 5% considered themselves highly knowledgeable. These results highlight the need for the game to introduce and educate players on Iban dishes, techniques and cultural significance. With most respondents having low or no knowledge, the game offers an opportunity to raise awareness about preserving traditional indigenous cuisine.

Interest and Engagement

This section focuses on the respondents' level of interest in learning about traditional Iban cuisine, the aspect that interest them the most, and their interest in playing cooking game featuring Iban traditional recipes.

1. How interested are you in learning about traditional Iban cuisine? (1 - Not Interested at all, 2 - Not very interested, 3 - Neutral, 4 - Somewhat interested, 5 - Very interested)

60 responses

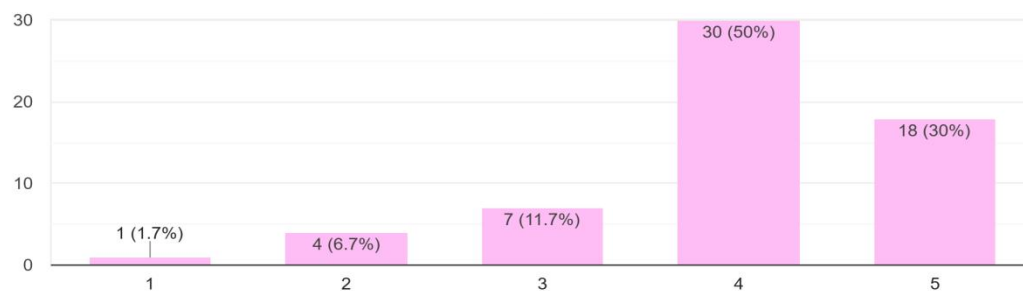


Figure 3.8 Interest in Learning Iban Cuisine

Figure 3.8 shows the respondents' level of interest in learning about traditional Iban cuisine. 50% of respondents were somewhat interested, and 30% were very interested indicating a strong overall interest. Only one of the respondent showed no interest at all.

2. What aspects of Iban cuisine interest you the most? (Select all that apply)

60 responses

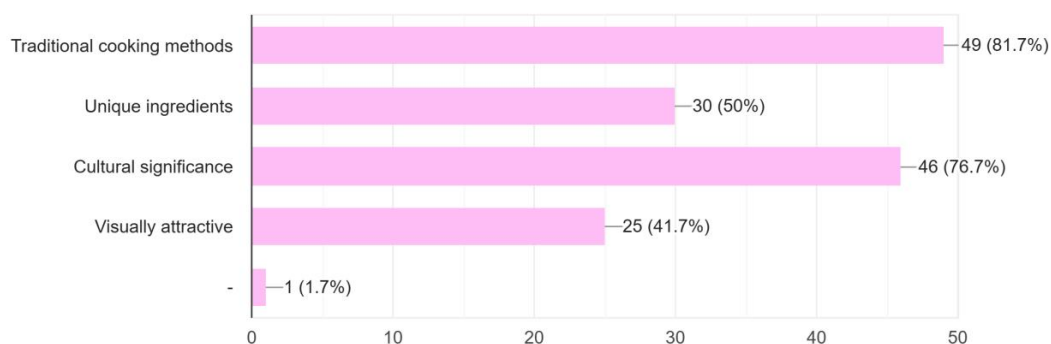


Figure 3.9 Interest of Iban Cuisine's Aspects

Figure 3.9 illustrates the aspects of Iban cuisine that most interest the respondents. 81.7% of respondents were most interested in traditional cooking methods, followed by 76.7% showing interest in the cultural significance. Both of these aspects can be highlighted in the game to increase engagement.

3. Would you be interested in playing a cooking game about Iban cuisine? (1 - Not Interested at all, 2 - Not very interested, 3 - Neutral, 4 - Somewhat interested, 5 - Very interested)
60 responses

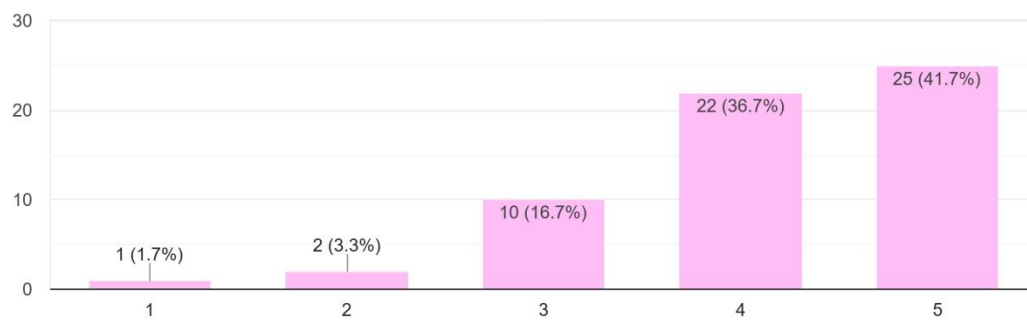


Figure 3.10 Interest in Iban Cuisine Cooking Game

Figure 3.10 displays the level of interest in playing a cooking game based on Iban cuisine. 41.7% of respondents expressed strong interest in playing such a game, with another 36.7% somewhat interested. This significant interest suggests that a cooking game could be an effective medium to educate and engage players about Iban cuisine, combining entertainment with cultural approach.

Game Preference

This section explores respondents' preferred cooking game mechanics and narrative styles.

1. Which cooking game mechanics do you find most engaging? (Select all that apply)

60 responses

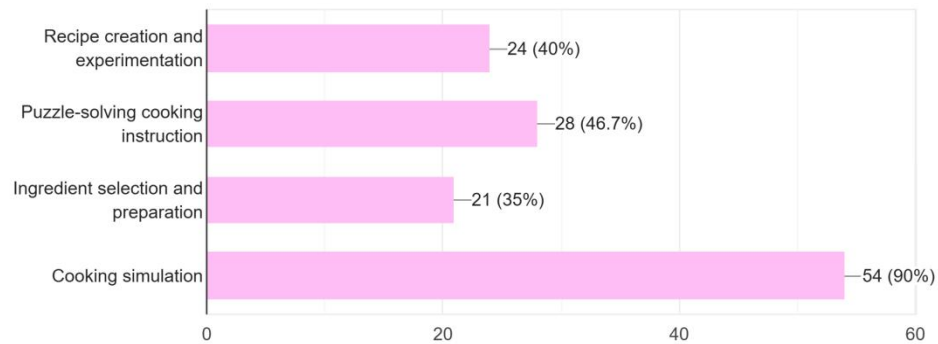


Figure 3.11 Preferred Cooking Game Mechanics

Figure 3.11 illustrates the most engaging cooking game mechanics according to the respondents. The majority (90%) found cooking simulation to be the most appealing, followed by 46.7% who preferred puzzle-solving cooking instructions. This indicates that the game should focus on interactive cooking simulations while incorporating puzzle elements for added challenge.

2. Do you prefer games with a storyline or narrative?

60 responses

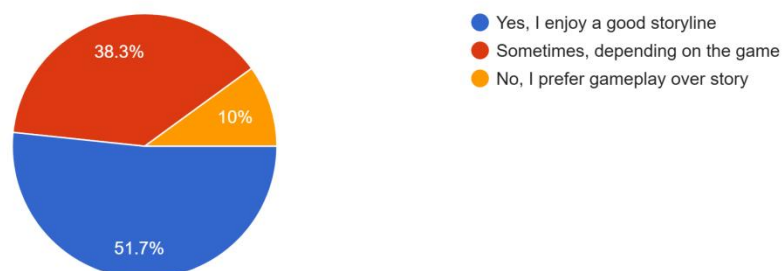


Figure 3.12 Preference for Storyline

Figure 3.12 shows the respondents' preference for games with a storyline or narrative. 51.7% of the participants expressed a preference for games with a storyline, while 38.3% chose depends on the game. Only 10% of respondents preferred game without a storyline. This emphasizes the need for a storyline in this cooking game, making the experience more immersive.

Feedback and Suggestions

The final section of the survey collected open-ended feedback where it provide valuable qualitative insights into the respondents' suggestions for improving the game. As a result, the suggestion gathered was diverse and highlighted areas for potential enhancement.

One common suggestion from respondents was the inclusion of a recipe archive within the game. This archive could feature a collection of the dishes players have learned, acting as a virtual recipe book that users can refer to after completing levels. This feature was seen as a practical addition to help players retain the knowledge of Iban cuisine.

3.2.2 Design

The Design phase is crucial in the development of this cooking game as it establishes the framework for the entire project. This phase involve thorough planning, conceptualization and the crafting of the game experience. It set's up the game mechanic and features so they can be used effectively, making the game more engaging and educational for users.

Game design concept is developed to define the flow and narrative of the game. Detailed outlines of the gameplay mechanics, levels, and user interface are created to ensure an intuitive and culturally immersive experience. Tools like Aseprite are utilized for character design. Additionally, the game's environment and assets will aligned with the theme of Iban culture. The game design concept will be further explained in the following section.

3.2.2.1 Game Design Concept

This section includes the flowchart, storyboard, main menu interface sketch, level design sketch, and character design. Each element play a crucial role in shaping the gameplay and overall aesthetics:

Game Flowchart

The flowchart provides a visual representation of the game's structure and user interactions. It illustrates the logical progression of menus, levels, and key decision points that ensure smooth gameplay navigation (refer Figure 3.13).

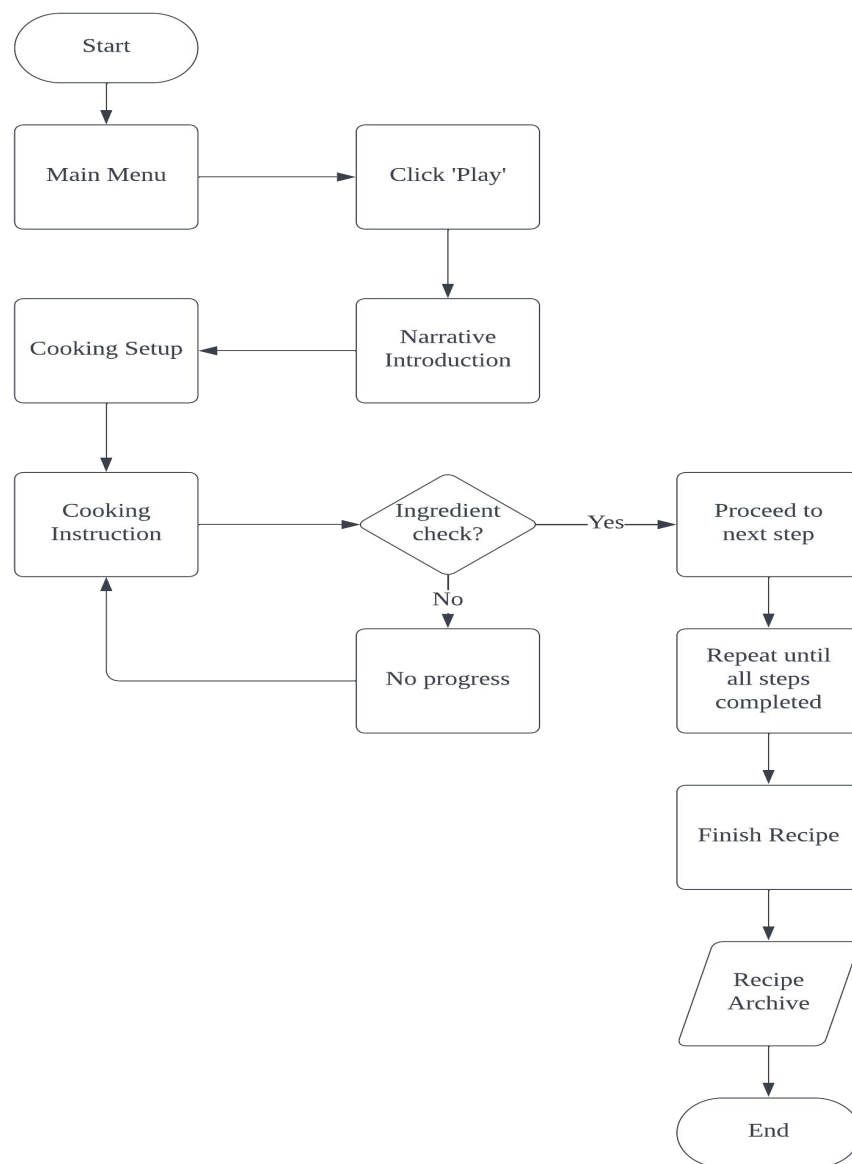


Figure 3.13 Game Flowchart

Storyboard (Narrative Introduction)

The storyboard presents a sequence of visual panels showing the introduction of Nyamai Mai!'s storyline. It sets up the main character journey and establishing the game's context in an engaging and structured manner (refer to Figure 3.14).

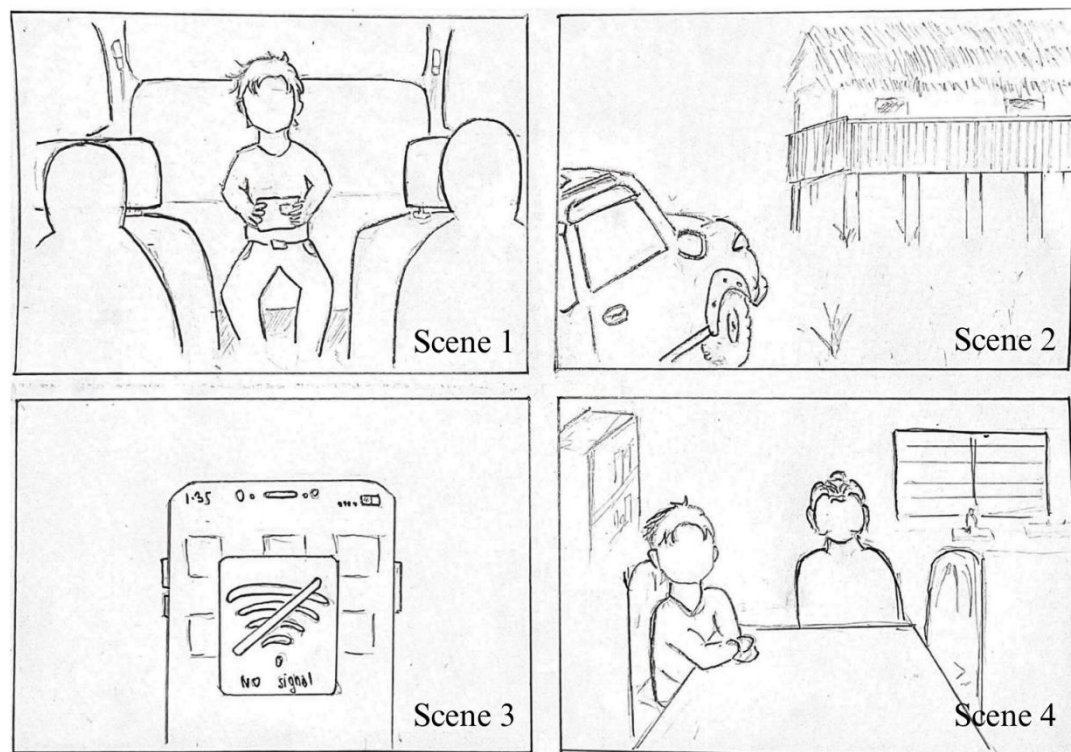


Figure 3.14 Narrative Introduction's Storyboard

Main Menu Interface

Figure 3.15 below showcases the initial sketch of user interface layout for main menu. It defines the user-friendly design approach that ensure accessibility for players.



Figure 3.15 Main Menu Interface

Level Design

The level design outlines the structure of the gameplay stage. It details the environment layouts, objectives, and interactive elements. Figure 3.16 shows the initial sketch of level design.

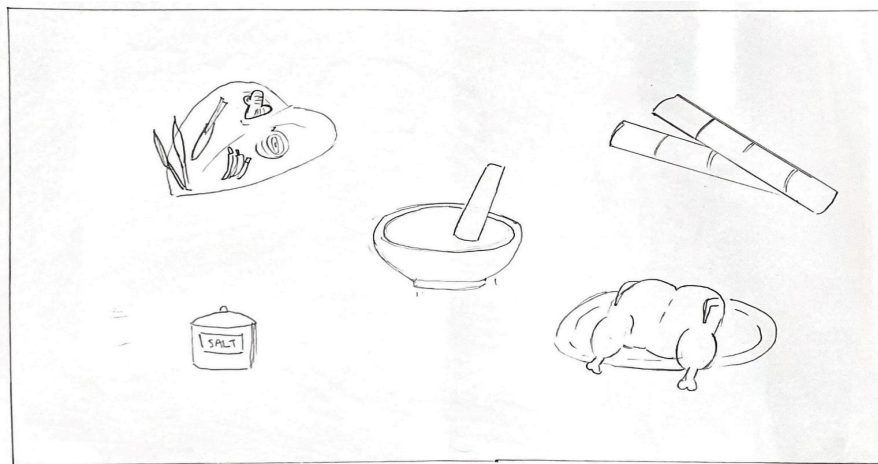


Figure 3.16 Level Design

Character Design

Character design focuses on developing the visual style and personality of the main character in Nyamai Mai!. Figure 3.17 shows the progress of designing the main character using Aseprite.



Figure 3.17 Character Design

3.2.3 Develop

The Develop phase involves the actual creation of the game, focusing on the implementation of features, asset development, and coding. The detail process in this phase will be documented in Chapter 4. It will describe the integration of graphics, audio, and user interfaces that align with the theme of Iban cuisine. This phase will provide an in-depth look at how this project evolved from the design phase into a fully functional game and ensure that the cultural and educational elements were effectively implemented.

3.2.4 Implement

The Implement phase will cover the testing part of this game to ensure that it functions as intended and offers seamless user experience. This phase will involve both functional testing and non-functional testing. The details will be documented in Chapter 5. It will describe all the testing outcomes and any measures taken to ensure the game's effectiveness.

3.2.5 Evaluate

The Evaluate phase will be documented in Chapter 5 similar to the Implement phase. It will focus on the assessment of the game's performance post-implementation. This will include gather user feedback through surveys, analyzing the educational impact on users regarding Iban cuisine, and measuring engagement levels. The results

will help determine if the project's objectives have been met and provide insights for future work.

3.3 Requirement Analysis

The requirement analysis section identifies the necessary components and user expectations for the successful implementation of the project. This section is divided into two parts: Hardware and Software Requirements, which outline the technical specifications needed, and User Requirements, which emphasize the analysis of the questionnaire distributed to users.

3.3.1 Hardware and Software

Table 3.1 shows the essential hardware and software components necessary for the development and execution of Nyamai Mai!.

Table 3.1 Hardware and Software Requirement

Tools	Description
Laptop	Device that is capable of running game development environments. Specific information about the laptop used is as follows: • Windows 11 • 8GB RAM • AMD Ryzen 5 3550H with Radeon Vega Mobile Gfx 2.10 GHz • 64-bit Operating System
Android Smartphone	Device used to deploy the game for testing.
Godot Engine	To develop the game, where it offer tools for 2D game development, physics, and animation.
Aseprite	To create the game assets used in Nyamai Mai! such as characters, backgrounds, and UI elements.

3.3.2 User Requirement

Table 3.2 shows the summarized user requirement identified from the survey and analysis conducted during the Analyze phase.

Table 3.2 User Requirement

Requirement ID	Requirement Description	Category
UR01	The game should introduce Iban traditional cuisine.	Content
UR02	The game should provide information on the cultural significance of Iban dishes.	Content
UR03	The game should include engaging cooking simulation mechanics.	Gameplay
UR04	The game should have a storyline to enhance immersion.	Storyline/Narrative
UR05	The game should stored learned recipes in a recipe book archive.	Features
UR06	The game should be accessible on android mobile platforms.	Platform
UR07	The game should be easy to navigate and user-friendly.	Usability
UR08	The game should offer interactive and engaging gameplay for user interest	Engagement

3.4 Conclusion

In conclusion, this chapter highlights the contribution of each phase to the overall development. By adhering to these phases, the development process remains structured, efficient, and aligned with the project's goals. This will ultimately lead to a high-quality and engaging game.

CHAPTER 4

IMPLEMENTATION

4.1 Overview

This chapter details the implementation process of the game, which focuses on the development phase of the ADDIE model. The implementation involved integrating game mechanics, designing assets, developing interfaces, and assembling all game scenes using the Godot Engine. The goal was to ensure a playable, functional prototype that delivers an engaging and educational experience about traditional Iban cuisine through interactive gameplay.

4.2 Designing Game Interface and Assets

The visual style and interface design of this game were created to reflect both simplicity and cultural authenticity. The game uses a mix of 2D pixel sprites for tools and ingredients, with layered background scenes for depth.

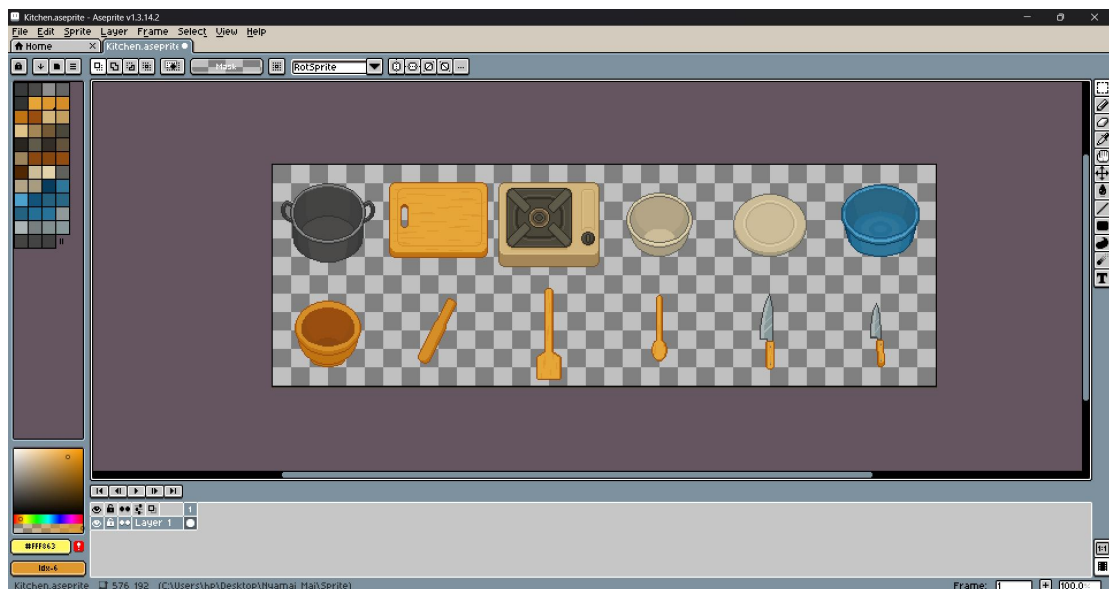


Figure 4.1 Sprites of Kitchen Equipment

All sprites were custom-drawn in this game. Assets for content in the vessels, such as pot, bowl, and basin were mostly animated for specific interactive actions. This is to show the visual changes when player interact with such item and see the progress of their action as its gradually changing.

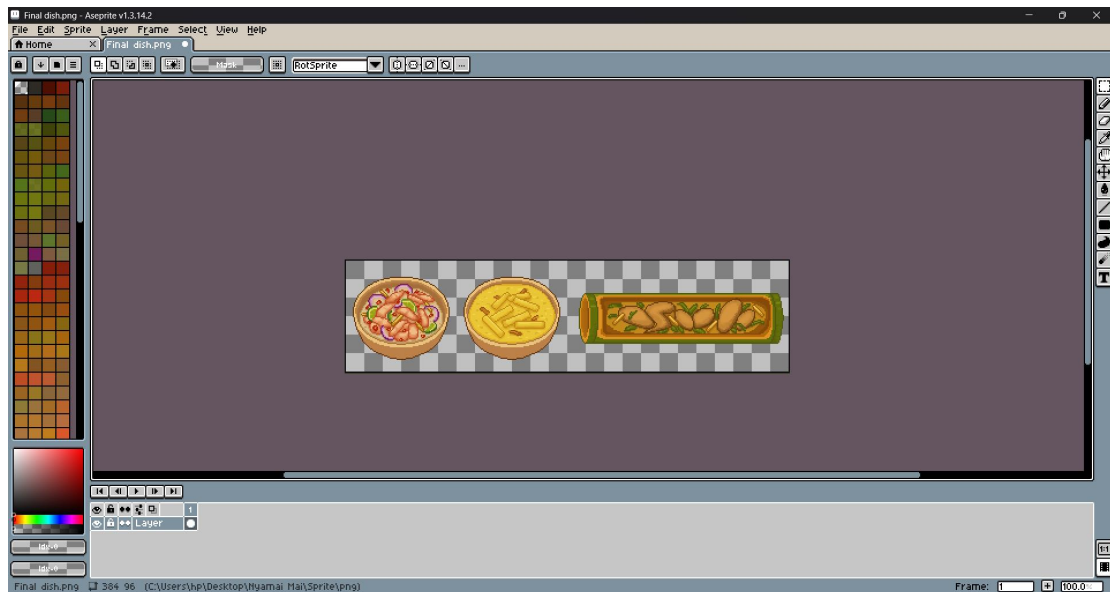


Figure 4.2 Sprites of Iban Cuisine

After the player successfully completes a cooking flow, the final dish is displayed using a dedicated sprite. These final dish sprites serve both as feedback for successful gameplay and as a way to visually reinforce cultural knowledge about traditional Iban cuisine. For example, the Manuk Pansuh sprite showcases the food in a bamboo, emphasizing its authentic presentation.

4.3 Game Scenes

These scenes were created using the Godot Engine and focus on both the menu navigation and gameplay actions.

4.3.1 Main Menu

The main menu is the first screen players see. It includes buttons like “Play”, “Archive” and “Exit” and features a background of a Manuk Pansuh.



Figure 4.3 Main Menu Scene

4.3.2 Recipe 1 (Umai Ikan)

Recipe 1 is the first playable recipe in the game. The dish chosen for this level is Umai Ikan, a traditional raw fish salad that is simple and quick to prepare. This recipe is designed to slowly introduce players to the basic mechanics of the game without overwhelming them. It contains three main phases which is CutPhase, MarinadePhase, and MixPhase. Each phase focuses on a different interaction to help players get used to the gameplay flow step by step. The following sections explain each phase in detail.

4.3.2.1 CutPhase



Figure 4.4 Cutting Scene

This phase is where players start the preparation by slicing the fish. This is the first task they have to complete. This phase involves two main interactions, which are drag-and-drop and vertical swipe. Once the fish is placed correctly on the cutting board, the player performs a vertical swipe gesture to simulate slicing.

After the fish is fully sliced, the pieces are then dragged and dropped into a bowl. This process is repeated for a total of three fish, one at a time. Each fish must be sliced and placed into the bowl before the next fish can be interacted.

Visual feedback is given during slicing where the fish changes appearance with each swipe. Once all the fish are sliced and placed into the bowl, the game continues to the next phase.

4.3.2.2 MarinadePhase



Figure 4.5 Marinade Scene

This phase needs the players to add ingredients into the bowl in the correct order. The first step is to drag and pour the lime juice over the sliced fish in the bowl. Only after this action is done, the player can begin adding the vegetables. If the player tries to drop any of the vegetables before adding the lime juice, a message will appear, preventing them from continuing.

This phase ends automatically once all the ingredients are in the bowl, and the game moves on to the mixing stage.

4.3.2.3 MixPhase

In this phase, the player prepares the paste by grinding several ingredients using a traditional mortar and pestle. The interactions here involve drag-and-drop and vertical drag to simulate the grinding motion. Five ingredients must be added into the mortar that includes onion, garlic, chili, shrimp paste (belacan), and anchovy. The player drags each item into the mortar one by one.



Figure 4.6 Recipe 1 Mixing Scene

To complete this phase, the player must rotate the spoon in a clockwise direction. As the player stirs, the visual contents of the bowl change following the angle of the spoon. A counter runs in the background, where it counts the number of full circular motions.

The stirring is complete after a set number of full circular motions. Once complete, a signal is triggered to mark the end of Recipe 1, and the game proceeds to the end scene.

4.3.3 Recipe 2 (Tubu Masak Lemak)

Recipe 2 features Tubu Masak Lemak, which involves a longer process compared to the first recipe. This recipe introduces more gameplay interactions, including chopping and grinding. This scene is divided into three main phases which are ChopPhase, GrindPhase and CookPhase, explained in the following sections.

4.3.3.1 ChopPhase



Figure 4.7 Chopping Scene

In this phase, the player prepares the main ingredient which is Tubu, a bamboo shoot. The interaction involves tapping the tubu to simulate chopping with a knife. This phase uses visual feedback to indicate progress. The tubu appearance get smaller with multiple chop. Once chopping is done, the game proceeds to the next phase.

4.3.3.2 GrindPhase

In this phase, the player prepares the paste by grinding several ingredients using a traditional mortar and pestle. The interactions here involve drag-and-drop and vertical drag to simulate the grinding motion. Five ingredients must be added into the mortar that includes onion, garlic, chili, shrimp paste (belacan), and anchovy. The player drags each item into the mortar one by one.



Figure 4.8 Recipe 2 Grinding Scene

After all ingredients are inside the mortar, the player performs a repeated up-and-down dragging motion to grind the paste. Each downward stroke counts as progress, and the texture inside the mortar changes gradually to reflect the grinding stage. Once the paste is fully ground, the phase ends automatically, and the game moves on to the cooking stage.

4.3.3.3 CookPhase

This final phase focuses on cooking the prepared ingredients to complete the Tubu Masak Lemak dish. It involves a mix of drag-and-drop and circular stirring gestures.

At the beginning, the players will be instructed to heat some oil in a cooking pot for a few second before dropping the ground ingredients. Then, one by one, the following ingredients are added in a fixed sequence:

1. Water
2. Turmeric Powder

3. Coconut Milk

4. Chopped Tubu

After adding water, turmeric powder and coconut milk, the player is required to stir the mixture using the spoon. Once the final ingredient is added, the cooking is complete.

This phase combines previous interactions in a longer sequence, testing the player's ability to follow the correct order and complete each action smoothly.



Figure 4.9 Cooking Scene 1



Figure 4.10 Cooking Scene 2

4.3.4 Recipe 3 (Manuk Pansuh)

Recipe 3 features Manuk Pansuh, a traditional Iban dish where chicken is cooked inside bamboo over an open fire. This is the final and most complete recipe in the game, combining everything the player has learned so far.

The scene is divided into four phases that includes GrindPhase, MixPhase, StuffPhase, and CookPhase. Players start by grinding some ingredients, then mix them with chicken and vegetables, stuff the mixture into bamboo, and finally cook it over fire with a flipping interaction.

Each phase builds on previous gameplay mechanics while introducing new visuals and timing-based interaction for a more immersive finish.

4.3.4.1 GrindPhase



Figure 4.11 Recipe 3 Grinding Scene

This phase works similarly to the grinding phase in Recipe 2, but with a different set of ingredients. This time, the player grinds garlic, red onion, and sweet onion using the same mortar and pestle interaction.

The gameplay involves dragging each ingredient into the mortar, followed by vertical up-and-down motions to grind the paste. Once the grinding is complete, the game moves to the next phase.

4.3.4.2 MixPhase

In this phase, the player combines the ground paste with the main ingredients: chicken, cassava leaves, and vegetables. Each item is dragged and dropped into a large basin. Once everything is added, the player stirs the mixture using the same circular motion from previous recipes.

The stirring updates the basin's content visually, and the phase ends when the required number of stirs is completed.



Figure 4.12 Recipe 3 Mixing Scene

4.3.4.3 StuffPhase

In this phase, the player stuffs the mixed ingredients into a bamboo to prepare for cooking. The interaction involves drag-and-drop, where the player drags portions of the mixture into the bamboo.

The bamboo updates visually to show it has been filled. Once fully stuffed, the phase ends and the next phase begins.



Figure 4.13 Stuffing Scene

4.3.4.4 CookPhase



Figure 4.14 Recipe 3 Cooking Scene

This final phase for Recipe 3 simulates the traditional way of cooking Manuk Pansuh using bamboo over fire. Four bamboo are placed horizontally above a fire animation. Each bamboo starts cooking over time, with the visual changing to show one side cooked.

The player must tap each bamboo to flip it once the first side is done. After flipping, the bamboo continues cooking until the dish is fully done. The phase ends when all bamboo are fully cooked and the cassava leaves used to cover the bamboo openings turn slightly yellowish that indicates that Manuk Pansuh inside are done and ready to serve.

4.4 Dialog System

The dialog system in this game is used to deliver both story progression and in-game instructions. Dialog is implemented using the Dialogic plugin in Godot, which allows for easy timeline-based conversations and branching text if needed.

There are two main types of dialog:

1. Story Dialog :



Figure 4.15 Story Dialog

Story dialog appears at the beginning and end of every recipe scene that show conversations between Aziz and Inek. At the start of each scene, the dialog sets up the situation through a short conversation where Inek introduce the recipe in a casual way. At then end of the scene, it wraps up the moment by Inek shares the background, history, or cultural significance of the dish to Iban culture and traditions.

2. Instruction Dialog :

Instruction Dialog appears at the start of each gameplay phase to guide the player through the next task. These dialog are short and direct, giving step-by-step instruction to the player. Unlike story dialog, instruction dialog uses a different visual style and layout. This visual difference helps players quickly identify that they are receiving instructions rather than story content.

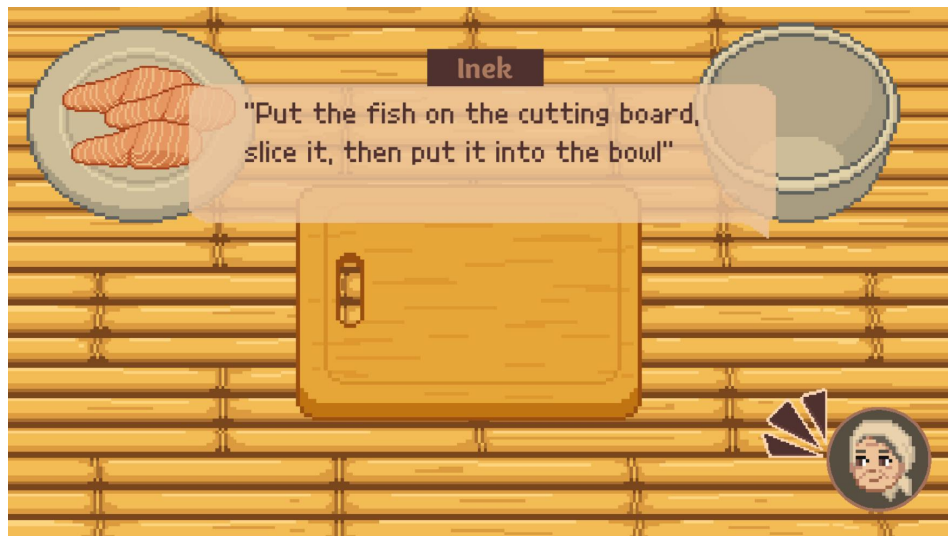


Figure 4.16 Instruction Dialog

4.5 Scoring System

The score system in this game is designed to give immediate feedback to the player based on how well they follow the cooking steps. It not only tracks performance but also visually reflects mistakes and allows for character interaction through the Inek icon.

1. Score Bar

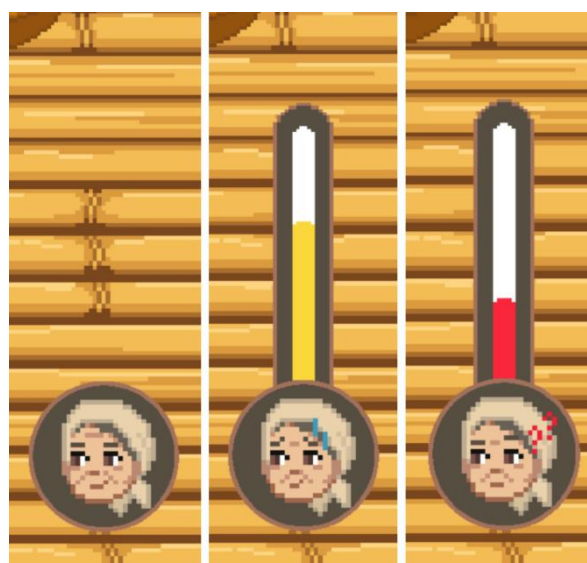


Figure 4.17 Score Bar UI

The score bar is displayed on the right side of the screen and acts as a live score indicator. However, it is not visible all the time and only appears when certain mistake thresholds are reached. Players start with a full score, and the bar decreases when mistakes are made. Mistakes include:

- Not following the instruction steps in the correct order.
- Misplacing or dropping food incorrectly for too many times.
- Calling Inek for help too many times.

As the player's score drops, the color of the score bar changes to:

- Yellow : If the player makes around 5 mistakes.
- Red : If the player makes 10 or more mistakes.

2. Inek Icon



Figure 4.18 Inek Icon

The Inek icon is placed at the bottom-right corner of the screen and serves two important function in both visual feedback and player assistance.

The icon changes facial expressions based on the player's performance:

- Smiling : No or minimal mistakes.
- Worried : After 5 mistakes (yellow score state)

- Annoyed : After 10 mistakes (red score state)

These expression changes help the player understand their current status in a non-intrusive way,

The Inek icon is also interactive. When the player clicks on it, Inek will repeat the instruction dialog for the current phase. However, each time the icon is clicked, it counts as a mistake. This will contribute to the score reduction.

4.6 Conclusion

The implementation of this game demonstrates the integration of educational content into an interactive 2D mobile game. By utilizing Godot Engine and custom-designed assets in Aseprite, the game successfully delivers a culturally engaging experience. The modular approach in scene design and reusable action components ensures scalability for additional recipes in the future.

CHAPTER 5

TESTING

5.1 Overview

This chapter presents the testing process carried out to ensure that the functionality and flow of the game are working as intended. It includes various test cases focused on core mechanics, user interactions, and phase transitions. Usability testing was also carried out to assess player experience and evaluate the effectiveness of the game's educational content. Overall, the testing helped determine whether the game successfully meets the project's objective of introducing traditional Iban cuisine in an engaging and accessible way.

5.2 Testing Criteria and Methods

The testing conducted is divided into two categories :

5.2.1 Functional Testing

Functional testing focuses on verifying that all game features work as intended. This includes:

- Core game mechanics such as cutting, grinding, stirring, and others.
- Drag-and-drop mechanics
- Progression between recipe phases
- Dialogic-based instructions and interactions
- Animation feedback for actions

Table 5.1 Functionality Testing Result for Recipe 1 Dialog and Instruction

Module	Recipe 1 - Dialog and Instruction					
Objective	Ensure narrative and instructional dialog appear correctly and guide the player when gameplay begins.					
Test ID	Test Cases	Test Step	Expected Result	Actual Result	Status	Remark
R1-D01	Narrative dialog introduction	Launch Recipe 1	Narrative dialog appears, introducing the player to the recipe scene.	As expected	Pass	
R1-D02	Progress through dialog	Tap to continue	Dialog progresses through each line	As expected	Pass	
R1-D03	Finish introduction phase	Reach end of dialog	Dialog closes and gameplay interaction begins	As expected	Pass	
R1-D04	First Instruction	Start gameplay after narrative dialog completes	Instruction dialog appears	As expected	Pass	
R1-D05	Second Instruction	Finish slicing fish phase	Instruction dialog appears	As expected	Pass	
R1-D06	Block Instruction	Drop other ingredient before lime juice	Block instruction appears	As expected	Pass	
R1-D07	Third Instruction	Finish marinating the fish with lime juice and vegetables	Instruction dialog appears	As expected	Pass	
R1-D08	Narrative dialog outro	Complete stirring	Narrative dialog appears to conclude the recipe	As expected	Pass	

Table 5.2 Functionality Testing Result for Recipe 1 Game Mechanics and Interaction

Module	Recipe 1 - Game Mechanics and Interaction					
Objective	Verify that all core game mechanics and interactions function correctly and respond as intended.					
Test ID	Test Cases	Test Step	Expected Result	Actual Result	Status	Remark
R1-G01	Slice fish	Swipe vertically across fish	Fish splits into the correct number of slices for each full swipe	As expected	Pass	
R1-G02	Drag and Drop interaction	Drag any interactable item to target area	Items snap to correct drop zone or reset if dropped outside	As expected	Pass	
R1-G03	Stirring	Rotate spoon in circular motion	Stirring begins and animation plays	As expected	Pass	
R1-G04	Salt appears after 6 stirs	Complete 6 full circular stirs	Salt item appears near bowl	As expected	Pass	
R1-G05	Block stirring	Rotate spoon in circular motion before adding salt (after it appears)	Stirring is blocked, no progress	As expected	Pass	
R1-G06	Complete 10 stirs	Continue circular motion to 10 stirs	Stirring ends; animation updates final texture	As expected	Pass	

Table 5.3 Functionality Testing Result for Recipe 1 Phase Transition

Module	Recipe 1 - Phase Transition					
Objective	Ensure the game transitions smoothly to the next phase once specific tasks are completed.					
Test ID	Test Cases	Test Step	Expected Result	Actual Result	Status	Remark
R1-T01	Fish Slicing Phase	Finish the introduction narrative dialog	First instruction appears and gameplay begins	As expected	Pass	
R1-T02	Transition to Marinade Phase	Complete slicing all fish and drop them into the bowl	Bowl of fish moves to the center, lime juice and and a plate of vegetables appear with instruction dialog	As expected	Pass	
R1-T03	Transition to Stirring Phase	Add lime juice and all ingredients	Spoon appears and next instruction dialog is displayed	As expected	Pass	
R1-T04	Complete Recipe 1 (Ending)	Finish 10 stirs after adding salt	Narrative outro dialog appears	As expected	Pass	

Table 5.4 Functionality Testing Result for Recipe 2 Dialog and Instruction

Module	Recipe 2 - Dialog and Instruction					
Objective	Ensure narrative and instructional dialog appear correctly and guide the player when gameplay begins.					
Test ID	Test Cases	Test Step	Expected Result	Actual Result	Status	Remark
R2-D01	Narrative dialog introduction	Launch Recipe 2	Narrative dialog appears, introducing the player to the recipe scene.	As expected	Pass	
R2-D02	Progress through dialog	Tap to continue	Dialog progresses through each line	As expected	Pass	
R2-D03	Finish introduction phase	Reach end of dialog	Dialog closes and gameplay interaction begins	As expected	Pass	
R2-D04	First Instruction	Start gameplay after narrative dialog completes	Instruction dialog appears	As expected	Pass	
R2-D05	Second Instruction	Finish chopping tubu phase	Instruction dialog appears	As expected	Pass	
R2-D06	Third Instruction	Finish grinding all ingredients	Instruction dialog appears	As expected	Pass	
R2-D07	First Block Instruction	Drop ground paste into the pot before oil start to heat.	Block instruction appears	As expected	Pass	
R2-D08	Fourth Instruction	Pour cooking oil and drop ground paste correctly	Instruction dialog appears	As expected	Pass	
R2-D09	Second Block	Drop ingredients in a	Block instruction appears	As expected	Pass	

	Instruction	random order, not based on the instruction's order.				
R2-D10	Narrative dialog outro	Complete drop the last ingredient (Tubu) into the pot	Narrative dialog appears to conclude the recipe	As expected	Pass	

Table 5.5 Functionality Testing Result for Recipe 2 Game Mechanics and Interaction

Module	Recipe 2 - Game Mechanics and Interaction					
Objective	Verify that all core game mechanics and interactions function correctly and respond as intended.					
Test ID	Test Cases	Test Step	Expected Result	Actual Result	Status	Remark
R2-G01	Chop tubu	Tap on the tubu	Tubu changes appearance become smaller and chopped tubu drop into the basin	As expected	Pass	
R2-G02	Drag and Drop interaction	Drag any interactable item in any phases to target area	Items snap to correct drop zone or reset if dropped outside	As expected	Pass	
R2-G03	Grinding motion	Drag pestle up and down	Ingredient texture changes after every hit (9 hits in total)	As expected	Pass	
R2-G04	Stirring motion	Rotate spoon in circular motion after specific ingredients dropped:	Spoon change position into the pot. Pot content change for	As expected	Pass	

		- Water - Turmeric Powder - Coconut Milk	each stir.			
R2-G05	Block stirring	Interact with the spoon before the specific ingredients dropped: - Water - Turmeric Powder - Coconut Milk	Spoon does not move. Stirring is blocked, no progress	As expected	Pass	
R2-G06	Complete 2 stirs	Continue circular motion to 2 round for each specific ingredients dropped	Stirring ends, spoon lay back next to the pot.	As expected	Pass	

Table 5.6 Functionality Testing Result for Recipe 2 Phase Transition

Module	Recipe 2 - Phase Transition					
Objective	Ensure the game transitions smoothly to the next phase once specific tasks are completed.					
Test ID	Test Cases	Test Step	Expected Result	Actual Result	Status	Remark
R2-T01	Tubu Chopping Phase	Finish the introduction narrative dialog	First instruction appears and gameplay begins	As expected	Pass	

R2-T02	Transition to Grinding Phase	Complete chopping the Tubu	Mortar and pestle appear with instruction dialog	As expected	Pass	
R2-T03	Transition to Cooking Phase	Complete 9 times pestle hits (grinding motion)	Pot, cooking oil, ground paste in mortar appear, instruction dialog is displayed	As expected	Pass	
R2-T04	Transition within Cooking Phase	Drop the ground paste after oil is heat	Tubu in basin with all other ingredients appear, instruction dialog is displayed.	As expected	Pass	
R2-T05	Complete Recipe 2 (Ending)	Add final ingredient (Tubu) into the pot	Narrative outro dialog appears	As expected	Pass	

Table 5.7 Functionality Testing Result for Recipe 3 Dialog and Instruction

Module	Recipe 3 - Dialog and Instruction					
Objective	Ensure narrative and instructional dialog appear correctly and guide the player when gameplay begins.					
Test ID	Test Cases	Test Step	Expected Result	Actual Result	Status	Remark
R3-D01	Narrative dialog introduction	Launch Recipe 3	Narrative dialog appears, introducing the player to the recipe scene.	As expected	Pass	
R3-D02	Progress through dialog	Tap to continue	Dialog progresses through each line	As expected	Pass	
R3-D03	Finish introduction phase	Reach end of dialog	Dialog closes and gameplay interaction begins	As expected	Pass	
R3-D04	First Instruction	Start gameplay after narrative dialog completes	Instruction dialog appears	As expected	Pass	
R3-D05	Second Instruction	Finish grinding phase	Instruction dialog appears	As expected	Pass	
R3-D06	First Block Instruction	Drop other ingredients into the basin before dropping chicken	Block instruction appears	As expected	Pass	
R3-D07	Third Instruction	After all items added to basin.	Instruction dialog appears	As expected	Pass	
R3-D08	Fourth Instruction	After stirring is complete and transition to the next	Instruction dialog appears	As expected	Pass	

		step: Stuffing phase				
R3-D09	Fifth instruction	After bamboo are stuffed and transition to next phase: Cooking phase	Instruction dialog appears	As expected	Pass	
R3-D10	Narrative dialog outro	After cooking is complete	Narrative dialog appears to conclude the recipe	As expected	Pass	

Table 5.8 Functionality Testing Result for Recipe 3 Game Mechanics and Interaction

Module	Recipe 3 - Game Mechanics and Interaction					
Objective	Verify that all core game mechanics and interactions function correctly and respond as intended.					
Test ID	Test Cases	Test Step	Expected Result	Actual Result	Status	Remark
R3-G01	Grinding motion	Drag pestle up and down	Ingredient texture changes after every hit (9 hits in total)	As expected	Pass	
R3-G02	Drag and Drop interaction	Drag any interactable item in any phases to target area	Items snap to correct drop zone or reset if dropped outside	As expected	Pass	
R3-G03	Stirring motion	Rotate spoon in circular motion after all ingredients dropped in basin	Spoon appear and basin content change for each stir.	As expected	Pass	

R3-G04	Stuff ingredients into bamboo	Drag mixture from basin into bamboo	Ingredients in basin disappear after each successful drop and bamboo becomes visibly filled	As expected	Pass	
R3-G05	Cooking animation	Fully stuffed the bamboo and transition to cooking phase	Bamboo enters animated loop (flame)	As expected	Pass	
R3-G06	Flip bamboo	Tap cooked bamboo after 5 seconds or after the visual changes	Bamboo flips the burn side (darker color) to the top	As expected	Pass	
R3-G07	Show cooked bamboo	Wait another 5 seconds after flip the bamboo	Bamboo visually looks darker on the other side and cassava leaves on top changes color	As expected	Pass	

Table 5.9 Functionality Testing Result for Recipe 3 Phase Transition

Module	Recipe 3 - Phase Transition					
Objective	Ensure the game transitions smoothly to the next phase once specific tasks are completed.					
Test ID	Test Cases	Test Step	Expected Result	Actual Result	Status	Remark
R3-T01	Transition to Grinding Phase	Finish the introduction narrative dialog	First instruction appears and gameplay begins	As expected	Pass	
R3-T02	Transition to	Complete 9 times pestle	Basin, chicken, cassava leaves,	As expected	Pass	

	Mixing Phase	hits (grinding motion)	vegetables, and ground paste in mortar appear, instruction dialog is displayed			
R3-T03	Transition to Stirring Motion	Add all ingredients into basin	Stirring tool appears, instruction dialog is displayed	As expected	Pass	
R3-T04	Transition to Bamboo Stuffing Phase	Complete required number of stirring	Bamboo and mixture of chicken in basin appear.	As expected	Pass	
R3-T05	Transition to Cooking Phase	Stuff the bamboo until basin empty	Animated scene of bamboo cooking on open fire displays.	As expected	Pass	
R3-T06	Complete Recipe 3 (Ending)	Wait until all bamboo are fully cooked, visual appearance of the bamboo changes.	Narrative outro dialog appears	As expected	Pass	

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 Overview

This chapter summarizes the key outcomes of the Nyamai Mai! project and outline potential directions for future improvement and expansion.

6.2 Conclusion

The Nyamai Mai! cooking game set out with the goal of reconnecting young Malaysians with their culinary heritage, particularly through the lens of traditional Iban cuisine. The project successfully met its objectives:

1. Development of 2D Cooking Game :

A fully functional 2D game was developed where its feature interactive phases such as slicing, grinding, stirring, chopping, and cooking. These mechanics were designed to introduce players to the tools, techniques, and ingredients commonly used in Iban dishes that offers a hands-on learning experience digitally.

2. Culturally-Inspired Storyline Design :

A narrative was created around a relatable character and setting, integrating elements of the Iban tribe's lifestyle and food traditions. Dialogs were used to subtly teach cultural values and cooking knowledge in a casual story-driven format.

3. Immersive Cultural Presentation :

The game utilized custom-drawn visuals to represent a traditional kitchen especially in Iban Longhouse. The background of bamboo table in each gameplay resembles the traditional kitchen in Iban Longhouse. Visual assets such as bamboo, mortar and pestle, and local vegetables contributed to a culturally immersive atmosphere.

6.3 Future Improvement

While the current version of Nyamai Mai! delivers a playable experience that introduces traditional Iban dishes, several areas have been identified for future improvement to enrich the game's cultural impact and gameplay depth:

1. More Traditional Recipes :

Future development will focus on expanding the game with additional Iban recipes, as well as dishes from other Malaysian ethnic groups. This would provide a broader representation of the country's culinary heritage and offer more gameplay variety.

2. Cutscene Animations :

Animated cutscenes will be added to enhance storytelling between each phase and recipe. These animations will provide context, cultural insights, and emotional connection to the characters, making the game more engaging and memorable.

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