



**DEPARTMENT OF INFORMATION TECHNOLOGY AND
COMMUNICATION**

**DIPLOMA IN INFORMATION TECHNOLOGY
(DIGITAL TECHNOLOGY)**

HANGEULGENIUS (MOBILE APPLICATION)

GROUP MEMBERS:

NURUL IZZAH BINTI MOHD FIKRY	17DDT21F1051
ELIYA MAISARAH BINTI MOHD YAHAYA	17DDT21F1050
INTAN NADHIRAH BINTI MOHD HISHAM	17DDT21F1031

SUPERVISOR:

NUR HAZIMAH BINTI KHALID

SESSION: 2 2022/2023 (SHORT SEMESTER)

DECLARATION

We hereby declare that the technical report entitled “HangeulGenius” is based on original work under supervision and guidance of Madam Nur Hazimah binti Khalid except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other diploma or award at Polytechnic or other institutions.

1. Signature :
Name : NURUL IZZAH BINTI MOHD FIKRY
Registration No. : 17DDT21F1051
Date : 04/08/2023

2. Signature :
Name : ELIYA MAISARAH BINTI MOHD YAHAYA
Registration No. : 17DDT21F1050
Date : 04/08/2023

3. Signature :
Name : INTAN NADHIRAH BINTI MOHD HISHAM
Registration No. : 17DDT21F1031
Date : 04/08/2023

APPROVAL FOR SUBMISSION

Project Title : HANGEULGENIUS

Session : 2 2023/2024 (SHORT SEMESTER)

Submitted	: 1. NURUL IZZAH BINTI MOHD FIKRY	17DDT21F1051
by	: 2. ELIYA MAISARAH BINTI MOHD YAHAYA	17DDT21F1050
	: 3. INTAN NADHIRAH BINTI MOHD HISHAM	17DDT21F1031

“This technical report has been read, checked and approved in term of scope and quality for the award of Diploma in Information Technology (Digital Technology).”

Checked by:

Supervisor's Signature :

Supervisor's Name :

Date :

ABSTRACT

The HangeulGenius application is a sophisticated and user-friendly tool made to make learning the language easier. It provides a wide variety of features, such as carefully chosen information, and interactive activities. The objectives of this project are to develop a mobile learning app specifically for learning the Korean Language and culture, create a digital lesson for users to learn the basic Korean Language, and measure the comprehension of the Korean language by providing quizzes like sound guessing and mix-and-match games. A user-friendly interface, interactive courses and exercises, and progress monitoring are some of the techniques used to address the issue. The methodology that HangeulGenius used is the Agile Methodology. Why choose agile? These outcomes help make learning a language effective and pleasurable, assisting students' advancement towards Korean language proficiency.

TABLE OF CONTENTS

	CONTENT	PAGE NO.
	Declaration	1
	Approval for Submission	2
	Abstract	3
	Table of Contents	4-5
	List of Tables	6
	List of Figures	7-10
1.0	PROJECT PLAN	
	1.1 Problem Statement	11
	1.2 Objective	12
	1.3 Scope	12-13
	1.4 Literature Review	14-16
	1.5 Methodology	17-18
	1.6 Gantt Chart	19-20
2.0	REQUIREMENT SPECIFICATION	
	2.1 Functional Requirement	21
	2.2 Non-Functional Requirement	22
	2.3 Hardware and Software Requirement	23-24
	2.4 System Configuration	25

	2.5 Security Requirement	26
3.0	FINAL DESIGN	
	3.1 Logical Design	27-28
	3.2 Physical Design	29-43
4.0	TEST DESCRIPTION AND RESULTS	
	4.1 Unit Testing Plan	44-49
	4.2 Integration Testing Plan	50-56
	4.3 User Acceptance Testing Plan	57-76
5.0	MAJOR FINDINGS AND DISCUSSION	
	5.1 The Advantages of the Project	77
	5.2 The Disadvantages of the Project	77
6.0	RECOMMENDATION AND CONCLUSION	
	6.1 Recommendation	78
	6.2 Conclusion	79
	References	80

LIST OF TABLES

TABLE NO.	TITLE	PAGE NO.
1.4	Comparison between 3 of Korean Learning Application	13-15
1.5	HangeulGenius's Methodology	16-17
2.1	Non-Functional Requirement of HangeulGenius	21
2.2:	Table 2.2: HangeulGenius's Hardware And Software Requirement	22-23
4.1	Table 4.1 Unit Testing Plan of HangeulGenius	44-49
4.2	Table 4.2 Integration Testing Plan of HangeulGenius	50-55
4.3	Table 4.3 User Acceptance Testing Plan of HangeulGenius	57-76

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE NO.
1.5	Figure 1.5 : Agile Methodology (Uwe Dreissigacker, 22 August 2022)	16
1.6	Figure 1.6 : HangeulGenius's Project Gantt Chart	18-19
1.1	Figure 1.1 : Functional Decomposition Diagram of HangeulGenius	26
2.1	Figure 2.1 : Entity Relationship Diagram of HangeulGenius	27
3.1	Figure 3.1 : Data Flow Diagram of HangeulGenius	28
4.1	Figure 4.1: Interface get Started for HangeulGenius.	29
5.1	Figure 5.1: Interface for information about HangeulGenius application.	29
6.1	Figure 6.1: Interface for introduction about HangeulGenius application.	30

FIGURE NO.	TITLE	PAGE NO.
7.1	Figure 7.1: Interface Login for HangeulGenius.	30
8.1	Figure 8.1: Interface register for HangeulGenius	31
9.1	Figure 9.1: Interface main menu	31
10.1	Figure 10.1: Interface navigation drawer in main menu.	32
11.1	Figure 11.1: Interface culture	32
12.1	Figure 12.1: Interface history for HangeulGenius.	33
13.1	Figure 13.1: Interface food for HangeulGenius.	33
14.1	Figure 14.1: Interface clothes for HangeulGenius.	34
15.1	Figure 15.1: Interface sports for HangeulGenius.	34
16.1	Figure 16.1: Interface lesson in HangeulGenius.	35
17.1	Figure 17.1: Interface alphabet in HangeulGenius.	35
18.1	Figure 18.1: Interface vowels in HangeulGenius.	36
19.1	Figure 19.1: Interface alphabet for each vowel.	37
20.1	Figure 20.1: Interface consonants in HangeulGenius.	37

FIGURE NO.	TITLE	PAGE NO.
21.1	Figure 21.1: Interface alphabet for each consonant.	38
22.1	Figure 22.1: Interface numbers in HangeulGenius.	38
23.1	Figure 23.1: Interface number for each numbers in HangeulGenius.	39
24.1	Figure 24.1: Interface basic words in HangeulGenius.	39
25.1	Figure 25.1: Interface greeting that will appear when user choose “greetings” button.	40
26.1	Figure 26.1: Interface family that will appear when user choose “family” button.	40
27.1	Figure 27.1: Interface emotions and feelings that will appear when user choose “emotions and feelings” button.	41
28.1	Figure 28.1: Interface quiz in HangeulGenius application.	42
29.1	Figure 29.1: Interface “mix and match” in HangeulGenius.	42
25	Figure 30.1: Interface “sound and guess”. It will display quiz like figure 30.1.	43
11	Figure 31.1: Interface profile account in HangeulGenius.	43
13	Figure 18.1: Interface vowels in HangeulGenius.	44

1.0 PROJECT PLAN

1.1 PROBLEM STATEMENT

The problem statement of this project are:

- I. There is a lack of Korean culture information in Korean language learning apps in the current market.
- II. There are few apps that provide writing exercise through understand alphabet shape, tracking the shape of Hangul alphabet
- III. Lack of digital lessons on the language alphabet is insufficient to provide an interesting learning experience to users.

1.2 OBJECTIVE

The objective of this project are:

- I. To develop a mobile learning app specifically for learning the Korean language and culture.
- II. To create a digital lesson for users to learn the basic Korean language.
- III. To measure the comprehension of Korean language by providing quizzes like sound guessing and mix and match games.

1.3 SCOPE

1. User

- I. User shall to log in to the HangeulGenius application
- II. User shall register to the HangeulGenius application
- III. User shall the practices and exercise such as drawing the Korean language
- IV. User shall to hear the sound word
- V. Users shall view and read on Korean culture and lessons.
- VI. Add quizzes.

3. System Scope

- I. System shall save the login and register data from users.
- II. System shall show the reward after users do the exercise.
- III. System shall show the users' profile account.
- IV. System shall make a sound when the user clicks on the Korean word button.
- V. System shall display Korean culture and lessons.
- VI. Add quizzes.

1.4 LITERATURE REVIEW

Table 1.4: Comparison between 3 of Korean Learning Application

Logo			
Name of application / website	LingoDeer	Memrise	Duolingo
Programming languages	Mobile Development : - Swift - Java / Kotlin Website Development : - JavaScript - HTML / CSS - Python / PHP	Mobile Development : - Java / Kotlin - Swift / Objective-C - JavaScript - Python - PHP	Mobile Development : - JavaScript - Python - Swift / Objective-C - Java / Kotlin - SQL Database - HTML / CSS - Ruby
Strengtheness	- Have features in 9 different languages: Japanese, Korean, Spanish, French, Chinese, German, Portuguese, Vietnamese, and Russian. - User Can review grammar, vocabulary, or both at the same time - LingoDeer also features a progress chart, badges, awards, and a ranking system to stay motivated and	- Memrise application offers a wide range of languages to learn, including popular languages like Spanish, French, German, Chinese, Japanese, and many more. - Ability to customize length of learning sessions - Memrise application does a great job by building a	- Due to its clear layout and user-friendly features, Duolingo is simple to use even for new users. - Language learning may become more interesting with Duolingo's gaming features, which include leveling up, earning points, and competing with others. - Duolingo leads users through a range of language

	to track user learning.	community among its users	abilities, such as speaking, reading, and writing
Weaknesses	- LingoDeer offers a free trial, access to the full range of content and features typically requires a paid subscription - Beginners and intermediate learners are the main target audience for LingoDeer. The app could be less helpful for advanced language learners since it might not provide them with enough challenges or content to further develop their language abilities. - The main focus for LingoDeer are reading and speaking only, the application does not provide the writing exercise for users.	- Memrise does not provide to write some letter because the application just provide a video on how to draw the letter - Memrise just offers activities without any previous references to help users learn Korean Language. - Some users may feel bored because the interface design does not attract the users	- Duolingo does not provide about the culture of Korea - Duolingo offers automatic feedback, it might not provide specific guidance offered to the requirements of specific learners. This could be an issue for users who need more detailed feedback or have trouble understanding certain ideas. - Duolingo provides limited learning terms such as grammar and vocabulary but may not help users improve their ability to produce language freely.
Platform	- Android - IOS - Website	- Android - IOS - Website	- Android - IOS - Website

Based on Table 1.4, this project can summarise that all of this application platform has provided a lot of languages, and users can choose one of the languages and they can start to learn it and do the exercise, but still the application has some weaknesses. In that table, the application can see that one of the weaknesses of LingoDeer application is the main focus for LingoDeer are only reading and speaking, the application does not provide the writing exercise for user so this unable user to enhance their writing skills in Korean Language so the solution for this weakness, this project decided to add the features in writing exercise to enhance their writing skills. Next, Memrise has a weakness in terms of the interface design because the application's interface design does not attract the user because it does not provide the progress tracking and does not show any reward such as "Good Job". The solution of this weakness is that this project decided to make an attractive interface design such as providing progress tracking so this will make the user know their user's level and show the reward such as "5-star, Good Job" if the user has done their exercise in the HangeulGenius application. Lastly, Duolingo does not provide about the culture of Korea so user lack of knowledge about Korean history, Korean traditional food, Korean traditional clothes and many more so the solution of Duolingo weaknesses is this project decided to add the features about the culture of Korea so this will make user more interested learning about the Korean language and gain more their knowledge.

1.5 METHODOLOGY

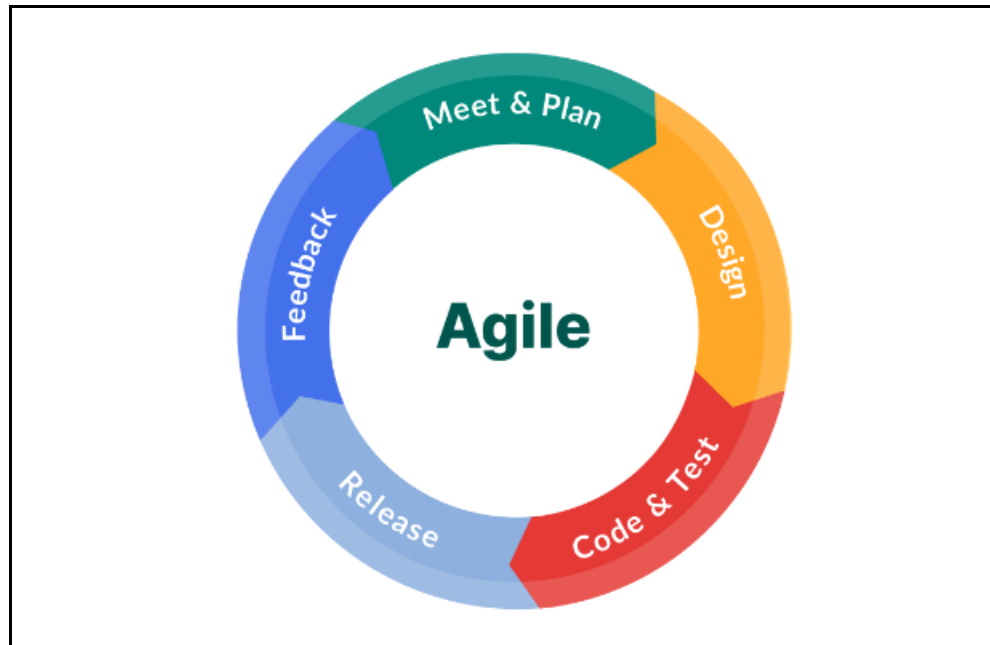


Figure 1.5 : Agile Methodology (Uwe Dreissigacker, 22 August 2022)

Table 1.5: HangeulGenius’s Methodology

No.	Phase	Activities
1.	Meet & Plan	(1) Recruit project teams. (2) Project team brainstorm for ideas. (3) Online meet with client to perform fact finding and gathering requirements. (4) Plan budget and cost.

2.	Design	(1) Design the interface of HangeulGenius using Canva tools based on client requirements. (2) Designing the Gantt chart to understand the functions, and progress of the project.
3.	Code & Test	(1) Write a code to make the functionality of an application using software tools such as Android Studio. (2) Test the functionality of HangeulGenius Application.
4.	Release	(1) Release the HangeulGenius Application to the client.
5.	Feedback	(1) Get feedback from clients. (2) Maintain the server of the application. (3) Optimize application performance. (4) Improve performance management.

1.6 GANTT CHART

The gantt chart of this project is as shown in figure 1.6.

Figure 1.6 : HangeulGenius's Project Gantt Chart

HANGEULGENIUS GANTT CHART

HANGEULGENIUS			START DATE	END DATE	OVERALL PROGRESS	MEMBERS:	ELIYA MAISARAH BINTI MOHD YAHAYA
NURUL IZZAH BINTI MOHD FIKRY			20/06/2023	08/13/23	In Progress	MEMBERS:	INTAN NADHIRAH BINTI MOHD HISHAM
NO	SPRINT	PHASES/ACTIVITIES	RESPONSIBLE	START	FINISH	DURATION in days	STATUS
	SPRINT 1			20/06/2023	13/07/2023	23	
1		MEET & PLAN		20/06/2023	25/06/2023	5	
		Recruit project teams and meet Supervisor	NURUL IZZAH BINTI MOHD FIKRY	20/06/2023	20/06/2023	1	
		Project team brainstorm for ideas	ELIYA MAISARAH BINTI MOHD YAHAYA	21/06/2023	21/06/2023	1	
		Online meeting with client to perform fact finding and gathering requirements.	INTAN NADHIRAH BINTI MOHD HISHAM	22/06/2023	22/06/2023	1	
		Make a proposal	ELIYA MAISARAH BINTI MOHD YAHAYA	23/06/2023	24/06/2023	2	
		Proposal Demonstration	NURUL IZZAH BINTI MOHD FIKRY	23/06/2023	23/06/2023	1	
2		DESIGN		24/06/2023	01/07/2023	8	
		Design the interface of HangeulGenius using canva tools based on client requirements.	INTAN NADHIRAH BINTI MOHD HISHAM	24/06/2023	30/06/2023	7	
		Designing the Gannt chart to understand the functions, and progress of the project.	ELIYA MAISARAH BINTI MOHD YAHAYA	31/06/2023	01/07/2023	1	
3		CODE TEST		02/07/2023	09/07/2023	8	
		Write a code to make the functionality of application using software tools such as Android Studio.	NURUL IZZAH BINTI MOHD FIKRY	02/07/2023	05/07/2023	4	

		Project Demonstration 1	INTAN NADHIRAH BINTI MOHD HISHAM	05/07/2023	09/07/2023	5				
4		RELEASE		09/07/2023	10/07/2023	2				
		Release the HangeulGenius Application to the client.	ELIYA MAISARAH BINTI MOHD YAHAYA	09/07/2023	10/07/2023	1				
5		FEEDBACK		11/07/2023	13/08/2023	33				
		Get feedback from client.	INTAN NADHIRAH BINTI MOHD HISHAM	11/07/2023	12/07/2023	1				
		Optimize application performance.	NURUL IZZAH BINTI MOHD FIKRY	12/07/2023	12/07/2023	0				
		Improve performance management.	ELIYA MAISARAH BINTI MOHD YAHAYA	13/07/2023	13/07/2023	0				
	SPRINT 2			14/07/2023	13/08/2023	31				
1	MEET & PLAN			14/07/2023	15/07/2023	2				
		Online Meeting with Client	INTAN NADHIRAH BINTI MOHD HISHAM	14/07/2023	14/07/2023	0				
		Agreement from the client about the requirement of HangeulGenius application	ELIYA MAISARAH BINTI MOHD YAHAYA	15/07/2023	15/07/2023	0				
2	RELEASE			15/07/2023	13/08/2023	30				
		Improve the application after receiving requirements from the client.	NURUL IZZAH BINTI MOHD FIKRY	15/07/2023	16/07/2023	1				
		Project Demonstration 2	INTAN NADHIRAH BINTI MOHD HISHAM	16/07/2023	23/07/2023	8				
		Testing and improve the HangeulGenius Application	NURUL IZZAH BINTI MOHD FIKRY	24/07/2023	30/07/2023	7				
		Project Presentation 3	ELIYA MAISARAH BINTI MOHD YAHAYA	30/07/2023	06/08/2023	8				
		Final Presentation (FA)	NURUL IZZAH BINTI MOHD FIKRY	07/08/2023	13/08/2023	7				
0	5000	10000	15000	20000	25000	30000	35000	40000	45000	50000

2.0 REQUIREMENT SPECIFICATION

2.1 FUNCTIONAL REQUIREMENT

The functional requirements consist of user registration and authentication, and vocabulary.

1. User Registration and Authentication

- I. Users can register and create accounts using their social media profile information or email addresses.
- II. Users can securely log in using their credentials.
- III. The systems for password resets and account recovery are available.

2. Vocabulary Development

- I. Vocabulary lists with English translations and audio pronunciations are included in the lessons.
- II. With the use of activities, quizzes, sound and hearing games, mix and match games and writing exercises so users can practice their vocabulary.

2.2 NON-FUNCTIONAL REQUIREMENT

The non-functional requirement of this project is as shown in table 2.1.

Table 2.1 Non-Functional Requirement of HangeulGenius

Requirement	Product
Performance	Lessons, exercises, and other information should load quickly in the app to avoid frustrating users.
Reliability	Users should be able to access and use the app without many interruptions or downtimes.
Availability	Users should be able to access and use the app without many interruptions or downtimes.
Maintainability	Content, courses, and feature improvements and additions should be made simple by the app design.
Recoverability	Users can use the application throughout the week at any time during the day. In the case of unplanned system downtime, all features will be available again
Capacity	None
Serviceability	None
Security	1. Only the admin can view the user's profile account information. 2. User data, including personal data must be securely maintained and follow applicable data protection rules.
Manageability	
Environmental	User can use the application everytime and everyday
Data Integrity	The application should have data validation rules to check the integrity of data at the point of entry
Interoperability	None
Usability	The application's interface must be user-friendly and easy to use.

2.3 HARDWARE AND SOFTWARE REQUIREMENT

The hardware and software requirement of this project is as shown in table 2.2.

Table 2.2: HangeulGenius's Hardware And Software Requirement

Hardware Cost		
Name	Specification	Price
LAPTOP-O64SRPN2	1. AMD Ryzen 5 5500U with Radeon Graphics 2.10 GHz 2. RAM 8.00 GB 3. 64-bit operating system, x64-based processor	RM3 000
LAPTOP-K8U947LT	1. Intel(R) Core (TM) i3-10110U CPU @ 2.10GHz 2.59 GHz 2. RAM 8.00 GB 3. 64-bit operating system, x64-based processor	RM 2 900
DESKTOP-Q7A92MR	1. Intel(R) Core (TM) i7-2630QM CPU @ 2.00GHz 2.00 GHz 2. RAM 4.00 GB 3. 64-bit operating system, x64-based processor	RM 1 649
D-Link Unifi (Wi-Fi)	1. Work as router for UniFi 2. 160 MHz Bandwidth 3. High Gain Antennas	RM99 Per Month

E410 ID BLACK (Printer)	1. Windows 10, Windows 8, Windows 8.1/8.1 Update, Windows 7 SPI, Windows Vista SP2 2. CD Rom Drive 3. 1024 x 768 display	RM219
IK YELLOW (A4 Paper)	1. High Opacity for Double-Side Printing 2. Brilliant Colors & Sharp Images with TruTone Technology 3. High Thickness & Optimized Smoothness	RM16
Software Cost		
Canva	1. Free-To-Use Online Graphic Design Tools 2. Readymade Templates for Users To Use 3. Built for teamwork	Free
Android Studio	1. Android App Development.	Free
Unity	1. Creating and operating interactive, real-time 3D (RT3D) content.	Free

2.4 SYSTEM CONFIGURATION

The system configuration for HangeulGenius application consists of hardware components, software configuration, and network configuration.

I. Hardware Components

HangeulGenius application requires at least 8GB of RAM and sufficient storage space for Android Studio because it can work perfectly fine if the project has an external device on which to run the HangeulGenius application.

II. Software Configuration

HangeulGenius application created in Android Studio because Android Studio is the primary Integrated Development Environment (IDE) for Android app development. HangeulGenius application can only be used on Android devices.

III. Network Configuration

HangeulGenius application requires internet access. This is because, the user will login and register then the data will go into firebase which is Realtime Database.

2.5 SECURITY REQUIREMENT

The security requirement for HangeulGenius application.

- The name cannot stay empty as it will display the validation "name cannot be empty".
- The password cannot stay empty as it will display the validation "name cannot be empty".
- If the user enters data that does not exist in firebase, it describes validation input name doesn't exist.
- If the user goes wrong in the password, it will appear validation "invalid credential".

3.0 FINAL DESIGN

3.1 LOGICAL DESIGN

The Functional Decomposition Diagram of this project is as shown in Figure 1.1.

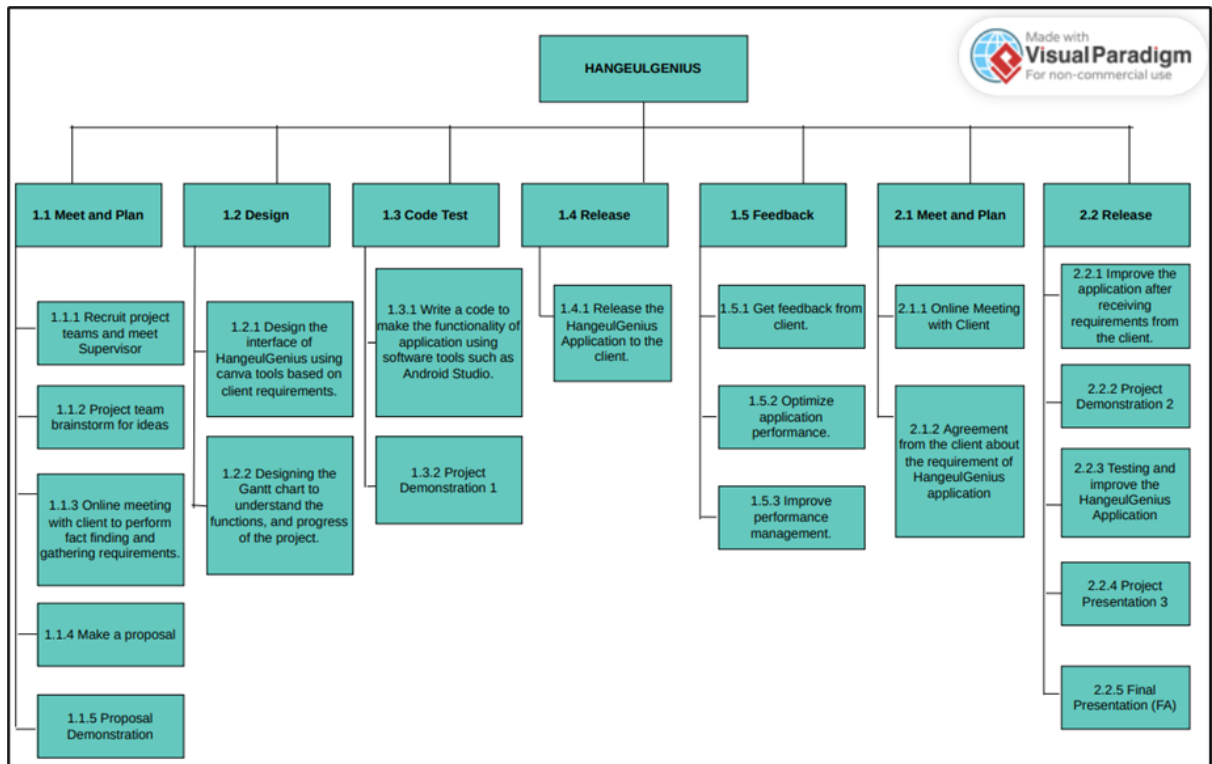


Figure 1.1 : Functional Decomposition Diagram of HangeulGenius

The Entity Relationship Diagram of HangeulGenius application is as shown in Figure 2.1.

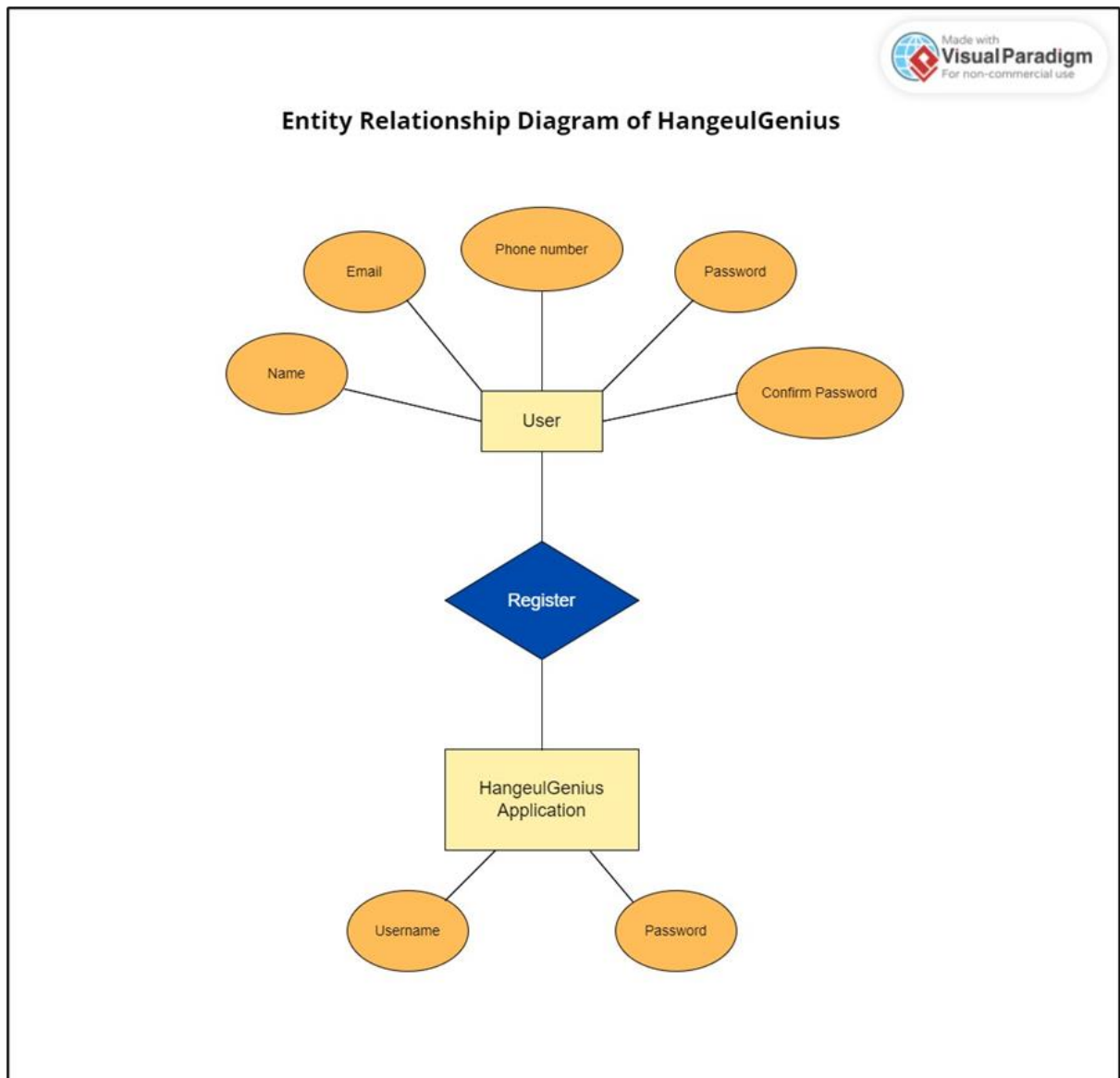


Figure 2.1 : Entity Relationship Diagram of HangeulGenius

The Data Flow Diagram of HangeulGenius is as shown in Figure 3.1.

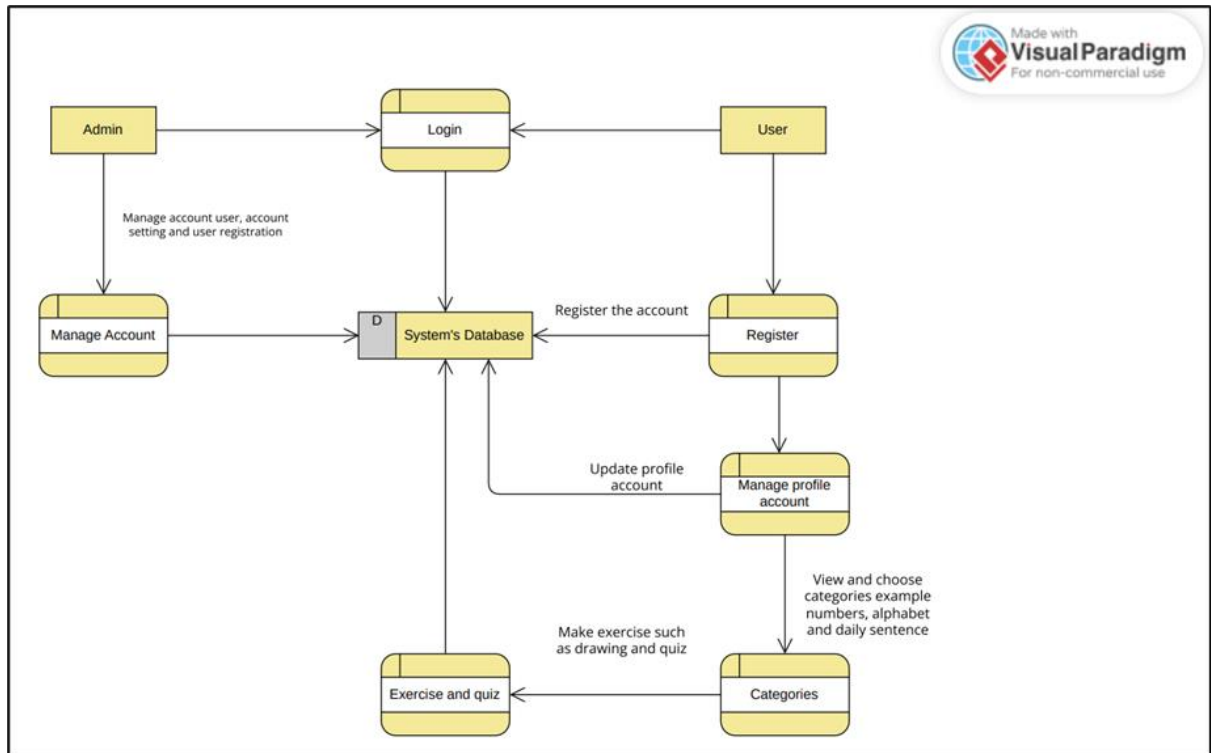


Figure 3.1 : Data Flow Diagram of HangeulGenius

3.2 PHYSICAL DESIGN

Give some introductory statement.

3.2.1 Start page

after user successfully enter the HangeulGenius application, this start page interface will display. User should click "get started" button to go to the next page.



Figure 3.2.1: Interface of Start Page of HangeulGenius

3.2.2 Introduction page

After that, the user must click the next button to go to the next page.



Figure 3.2.2: Interface of Introduction Page of HangeulGenius

3.2.3 Information page

the user must click the next button to go to the home page.

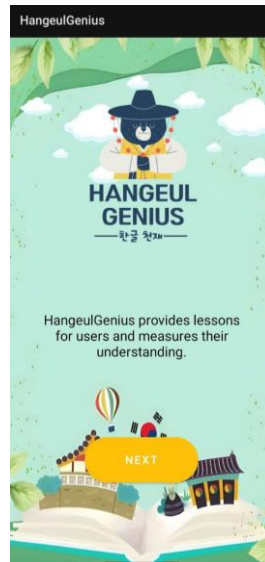


Figure 5.1: Interface for information about HangeulGenius application.

3.2.4 Login page

If the user does not have an account, the user must press the register here button to register. After the user successfully register an account, user must enter the name and password and then clicks the "log in" button.

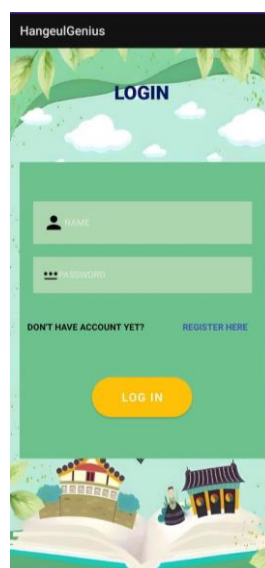


Figure 6.1: Interface Login for HangeulGenius.

3.2.5 Register page

User must enter a name, telephone number, email, password and confirm the password, after that, the user clicks the "sign in" button.

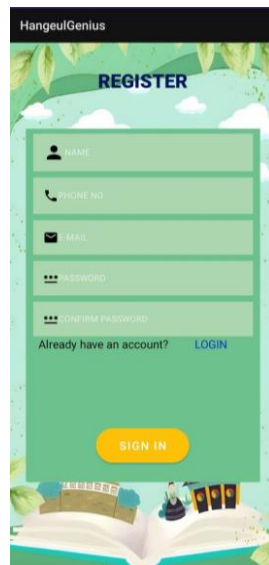


Figure 7.1: Interface Register for HangeulGenius.

3.2.6 Home page

On the home page, there are three sections, namely culture, lesson and quiz. And above is the navigation drawer, if the user clicks it will display from the side.



Figure 8.1: Interface main menu.

3.2.7 Navigation drawer

In the navigation drawer, there are two sections, namely, logout and profile. If the user clicks the logout button, it will display the login page. If the user clicks the profile button, it will display the profile page.

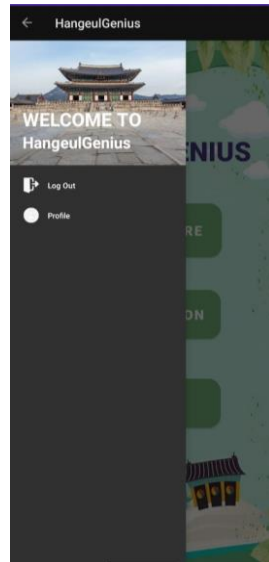


Figure 10.1: Interface navigation drawer in main menu.

3.2.8 Culture page

On the culture page, there are 4 buttons namely, history, food, clothes and sport. Users can also return to the previous page by clicking the back button above.



Figure 8.1: Interface Culture for HangeulGenius.

3.2.9 History page

On history page, user can read the text. user can also go to back button or next button.

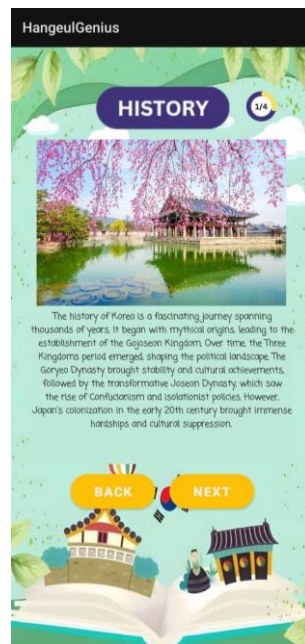


Figure 12.1: Interface history for HangeulGenius.

3.2.10 Food page

There is a video on the food page. the user must press the video page and die will issue the video player to pause or continue. the user may press the back button or the next button.

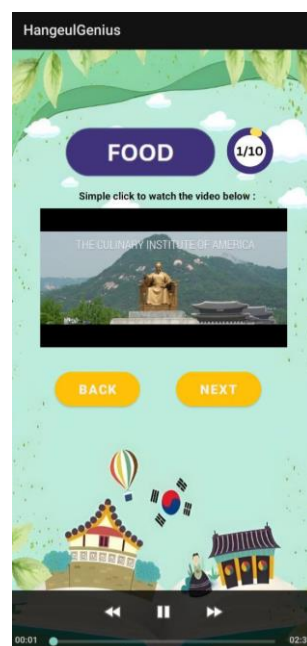


Figure 13.1: Interface Food for HangeulGenius.

3.2.11 Clothes page

On clothes page. user can read the text. user can also go to back button or next button.



Figure 14.1: Interface clothes for HangeulGenius.

3.2.12 Sport page

On Sports page. user can read the text. user can also go to back button or next button.



Figure 14.1: Interface Sports for HangeulGenius.

3.2.13 Lesson page

There are three buttons on the lesson page, namely alphabet, lesson and daily words. user can go to the back button to go to the previous page.



Figure 16.1: Interface lesson in HangeulGenius.

3.2.14 Alphabet page

There are three buttons on the lesson page, namely alphabet, lesson and daily words. user can go to the back button to go to the previous page.



Figure 17.1: Interface alphabet in HangeulGenius.

3.2.15 Vowels page

There are twenty buttons on the page. User can go to the back button to go to the previous page.

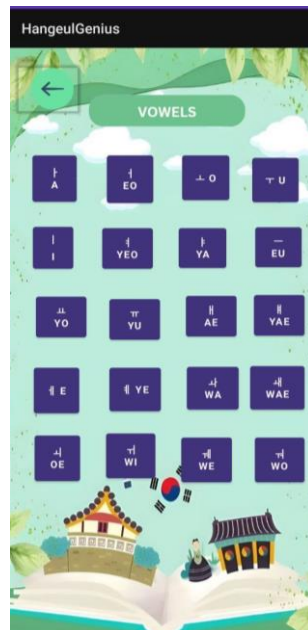


Figure 18.1: Interface vowels in HangeulGenius.

3.2.16 Vowels page

The user can trace the image with a guide on how to write vowels. user can also choose the color that has been prepared for writing. User can also delete and it will delete directly. After that the user will press the back button to the vowels page.

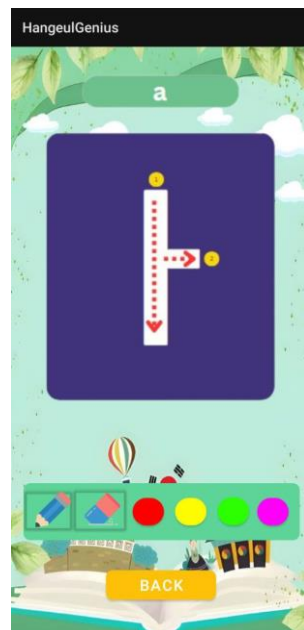


Figure 19.1: Interface alphabet for each vowel.

3.2.17 Consonant page

There are nineteen buttons on the page, User can go to the back button to go to the previous page.



Figure 20.1: Interface consonants in HangeulGenius.

3.2.18 Consonant page

User can trace the image with a guide on how to write vowels. user can also choose the color that has been prepared for writing. User can also delete and it will delete directly. After that the user will press the back button to the consonant page.



Figure 21.1: Interface alphabet for each consonant.

3.2.19 Numbers page

There are ten buttons on the page, User can go to the back button to go to the previous page.

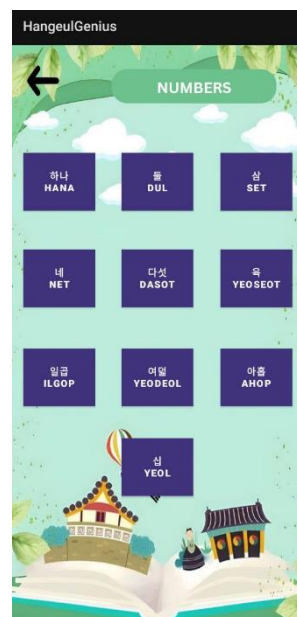


Figure 22.1: Interface numbers in HangeulGenius.

3.2.20 Numbers page

In this page, the user can click the button. for example, "hana" when the user presses the sound button, the button will sound "hana". The user can press the back button to go to the page numbers again.



Figure 23.1: Interface number for each numbers in HangeulGenius.

3.2.21 Basic words page

In daily words there are 3 buttons which are greetings, family and emotion and feelings.

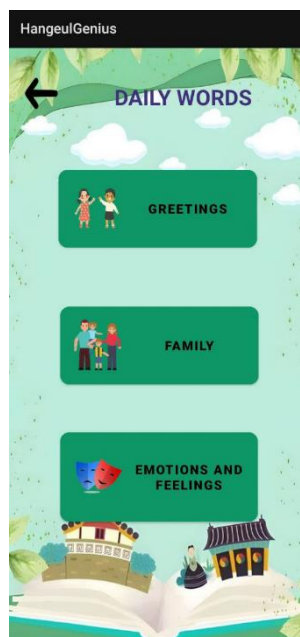


Figure 24.1: Interface basic words in HangeulGenius.

3.2.22 Greetings page

User can click the button. for example, "Annyeonghasaeyo" when the user presses the sound button, the button will sound " Annyeonghasaeyo ". The user can press the back button to go to the page basic words again or user can click button next for next basics words.



Figure 25.1: Interface greeting that will appear when user choose “greetings” button.

3.2.23 Family page

User can click the button. for example below page, "Gajok" when the user presses the sound button, the button will sound " Gajok ". The user can press the back button to go to the page basic words again or user can click button next for next basics words.



Figure 26.1: Interface family that will appear when user choose “family” button.

3.2.24 Emotion and feelings page

User can click the button. for example below page, "Haengbokada" when the user presses the sound button, the button will sound " Haengbokada ". The user can press the back button to go to the page basic words again or user can click button next for next basics words.

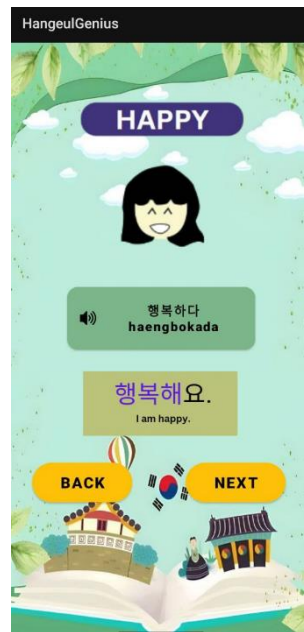


Figure 27.1: Interface emotions and feelings that will appear when user choose “emotions and feelings” button.

3.2.25 Quiz page

On this page there are two parts, namely mix and match and sound and guess. The user can press the back button to go to the page.

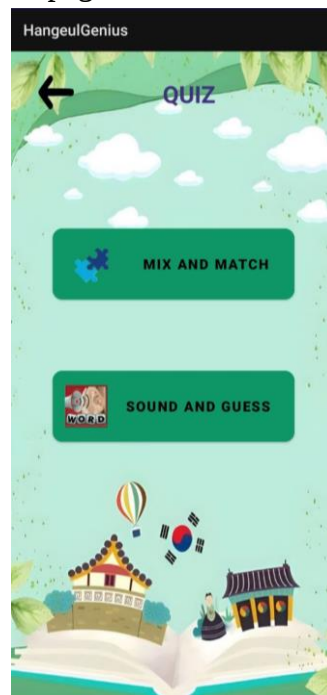


Figure 28.1: Interface quiz in HangeulGenius application.

3.2.26 Mix and match page

User must match the same picture and complete all of them. The user can press the back button to go to the previous page or the next button to go to the next page.



Figure 29.1: Interface “mix and match” in HangeulGenius.

3.2.27 Sound and guess page

For the sound and guess page, user needs to listen and choose the correct answer. User must press the sound icon button. it will display the next button. The user can go to the previous page with the back button.



Figure 30.1: Interface “sound and guess”. It will display quiz like figure 30.1.

3.2.28 Profile account page

In this page, user can only view the account. After that, the user can press the okay button.



Figure 31.1: Interface profile account in HangeulGenius

4.0 TEST DESCRIPTION AND RESULTS

4.1 UNIT TESTING PLAN

The Unit Testing Plan of HangeulGenius is as shown in Table 4.1.

Table 4.1 Unit Testing Plan of HangeulGenius

UNIT TESTING PLAN (UTP)						
No.	Test Case Name	Test Procedure	Pre-condition	Expected Result	Tester	Result (Pass/Failure)
1.	Get Started page	User is required to click Get Started button	None	User will directly go to the Introduction 1 page	Eliya Maisarah	Pass
2.	Introduction 1 page	User is required to click Next button	None	User will directly go to the Introduction 2 page	Eliya Maisarah	Pass
3.	Introduction 2 page	User is required to click Next button	None	User will directly go to the Login page	Eliya Maisarah	Pass
4.	Login page	User is required to fill the name and password field before access the system	User need to register and sign up before login	1. Prompt notification successful login 2. Prompt notification unsuccessful login if user not register 3. User will directly go to the Homepage	Eliya Maisarah	Pass
5.	Register page	User is required to fill the name,	None	1. Prompt notification successful	Eliya Maisarah	Pass

		phone number, email, password and confirm password field before access the system		register 2. User will directly go to Login page after click Sign In button		
6.	Homepage	User is required to choose which one they need to want click either culture, lesson or quiz button	None	User will directly go to the page they want either culture page, lesson page or quiz page	Eliya Maisarah	Pass
7.	Culture page	User is required to choose which one they want to learn and click either history, food, clothes or sports button	None	User will directly go to the one page they want either history page, food page, clothes page or sports page	Eliya Maisarah	Pass
8.	Lesson page	User is required to choose which one they want to click either alphabet, numbers or daily words button	None	User will directly go to the one page they want either alphabet page, numbers page or basic words page	Eliya Maisarah	Pass
9.	Quiz page	User is required to choose which	None	User will directly go to the one page they	Intan Nadhirah	Pass

		one they want to click either mix and match game, sound and hearing game button		want either mix and match game page or sound and guess game page		
10.	History page	User need to click Next button and Back button	None	User will go to the next page until the last page of History if user click Next button and user will go to the previous if click Back button	Nurul Izzah	Pass
11.	Food page	User need to click Next button and Back button	None	User will go to the next page until the last page of History if user click Next button and user will go to the previous if click Back button	Nurul Izzah	Pass
12.	Clothes page	User need to click Next button and Back button	None	User will go to the next page until the last page of History if user click Next button and user will go to the previous if click Back button	Eliya Maisarah	Pass
13.	Sport page	User need to	None	User will go to	Eliya	Pass

		click Next button and Back button		the next page until the last page of History if user click Next button and user will go to the previous if click Back button	Maisarah	
14.	Alphabet page	User need to choose one to click button either Vowels alphabet or Consonant alphabet button	None	User will directly go to the page that show the list of Vowels alphabet or Consonant alphabet	Eliya Maisarah	Pass
15.	Numbers page	User need to click Next button and Back button	None	User will directly go to the page that start with numbers One until Ten	Intan Nadhirah	Pass
16.	Basic words page	User need to choose one button to click either Family, Emotions and Feelings or Gathering button	None	User will directly go to the page that they choose either Family page, Emotions and Feelings page or Gathering page	Intan Nadhirah	Pass
17.	Vowels page	User need to choose one button to click the list of Vowels alphabet	None	User will directly go to the page of alphabet that they choose and in that page also have writing exercise	Nurul Izzah	Pass

18.	Consonant page	User need to choose one button to click the list of Consonant alphabet	None	User will directly go to the page of alphabet that they choose and in that page also have writing exercise	Eliya Maisarah	Pass
19.	Family page	User need to click Next button and Back button	None	User will directly go to the page that start with family such as Father, Mother and others	Intan Nadhirah	Pass
20.	Emotional and Feelings page	User need to click Next button and Back button	None	User will directly go to the page that start with emotion such as Happy, Sad, Angry and others	Nurul Izzah	Pass
21.	Greeting page	User need to click Next button and Back button	None	User will directly go to the page that start with greetings such as Good Morning,	Intan Nadhirah	Pass
22.	Mix and Match game page	User need to resolve the game and click Next button	None	1. Prompt notification successful answer the game 2. User will directly go to the reward page after successful answer the game	1. Nurul Izzah 2. Eliya Maisarah	Pass

23.	Sound and Guess page	User need to resolve the game and click Next button	None	1. Prompt notification successful answer the game 2. User will directly go to the reward page after successful answer the game 3. User can hear the sound of words	Intan Nadhirah	Pass
24.	Profile Account page	None	None	User will view their profile information that they register	Eliya Maisarah	Pass

Based on Table 4.1, every test included in the extensive unit testing plan that was carried out for the Korean language learning HangeulGenius application was carried out successfully, and no mistakes or problems were detected during the whole testing process, which produced highly positive results. This through testing of the app's performance and stability gives users who are eager to learn Korean the assurance that they will have a positive experienc

4.2 INTEGRATION TESTING PLAN

The Integration Testing Plan of HangeulGenius is as shown in Table 4.2.

Table 4.2 Integration Testing Plan of HangeulGenius

INTEGRATION TESTING PLAN (ITP)						
No.	Test Case Name	Test Procedure	Pre-condition	Expected Result	Tester	Result (Pass/Failure)
1.	Get Started page	User is required to click Get Started button	None	User will directly go to the Introduction 1 page	Eliya Maisarah	Pass
2.	Introduction 1 page	User is required to click Next button	None	User will directly go to the Introduction 2 page	Eliya Maisarah	Pass
3.	Introduction 2 page	User is required to click Next button	None	User will directly go to the Login page	Eliya Maisarah	Pass

4.	Login page	User is required to fill the name and password field before access the system	User need to register and sign up before login	1. Prompt notification successful login 2. Prompt notification unsuccessful login if user not register 3. User will directly go to the Homepage	Eliya Maisarah	Pass
5.	Register page	User is required to fill the name, phone number, email, password and confirm password field before access the system	None	1. Prompt notification successful register 2. User will directly go to Login page after click Sign In button	Eliya Maisarah	Pass
6.	Homepage	User is required to choose which one they need to want click either culture, lesson or quiz button	None	User will directly go to the page they want either culture page, lesson page or quiz page	Eliya Maisarah	Pass

7.	Culture page	User is required to choose which one they want to learn and click either history, food, clothes or sports button	None	User will directly go to the one page they want either history page, food page, clothes page or sports page	Eliya Maisarah	Pass
8.	Lesson page	User is required to choose which one they want to click either alphabet, numbers or basic words button	None	User will directly go to the one page they want either alphabet page, numbers page or basic word page	Eliya Maisarah	Pass
9.	Quiz page	User is required to choose which one they want to click either mix and match game, sound and hearing game button	None	User will directly go to the one page they want either mix and match game page or sound and hearing game page	Intan Nadhirah	Pass
10.	History page	User need to click Next button and Back button	None	User will go to the next page until the last page of History if user click Next button and user will go to the previous if click Back button	Nurul Izzah	Pass
11.	Food page	User need	None	User will go to	Nurul Izzah	Pass

		to click Next button and Back button		the next page until the last page of Food if user click Next button and user will go to the previous if click Back button		
12.	Clothes page	User need to click Next button and Back button	None	User will go to the next page until the last page of Clothes if user click Next button and user will go to the previous if click Back button	Eliya Maisarah	Pass
13.	Sport page	User need to click Next button and Back button	None	User will go to the next page until the last page of Sport if user click Next button and user will go to the previous if click Back button	Eliya Maisarah	Pass
14.	Alphabet page	User need to choose one to click button either Vowels alphabet or Consonant alphabet button	None	User will directly go to the page that show the list of Vowels alphabet or Consonant alphabet	Eliya Maisarah	Pass

15.	Numbers page	User need to click Next button and Back button	None	User will directly go to the page that start with numbers One until Ten	Intan Nadhirah	Pass
16.	Daily words page	User need to choose one button to click either Family, Emotions and Feelings or Gathering button	None	User will directly go to the page that they choose either Family page, Emotions and Feelings page or Gathering page	Intan Nadhirah	Pass
17.	Vowels page	User need to choose one button to click the list of Vowels alphabet	None	User will directly go to the page of alphabet that they choose and in that page also have writing exercise	Nurul Izzah	Pass
18.	Consonant page	User need to choose one button to click the list of Consonant alphabet	None	User will directly go to the page of alphabet that they choose and in that page also have writing exercise	Eliya Maisarah	Pass
19.	Family page	User need to click Next button and Back button	None	User will directly go to the page that start with family such as Father, Mother and others	Intan Nadhirah	Pass
20.	Emotional and Feelings page	User need to click Next button and Back button	None	User will directly go to the page that start with emotion such as Happy, Sad, Angry and others	Nurul Izzah	Pass

21.	Greeting page	User need to click Next button and Back button	None	User will directly go to the page that start with greetings such as Hello, Good Morning or others.	Intan Nadhirah	Pass
22.	Mix and Match game page	User need to resolve the game and click Next button	None	1. Prompt notification successful answer the game 2. User will directly go to the reward page after successful answer the game	1. Nurul Izzah 2. Eliya Maisarah	Pass
23.	Sound and Hearing page	User need to resolve the game and click Next button	None	1. Prompt notification successful answer the game 2. User will directly go to the reward page after successful answer the game 3. User can hear the sound of words	Intan Nadhirah	Pass
24.	Profile Account page	User need to click Save button	None	User will view their profile information that they register	Eliya Maisarah	Pass

Based on Table 4.2, the user interface, database management, lessons and quizzes were all successfully tested as part of the integration testing plan for the HangeulGenius Korean language learning program. The application's dependability and preparedness to offer a useful platform for learning Hangul alphabet and the Korean language were proven by the thorough testing procedure.

4.3 USER ACCEPTANCE TESTING PLAN

Table 4.3 User Acceptance Testing Plan of HangeulGenius

Test Case: Enter

Test Case ID	1		
Description	This test case is to verify: • The ability to login of the system		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Testing	Required Configuration	1. Name 2. Password
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure

No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Get Started	1. User is required to click Get Started button	User will directly go to the Introduction 1 page	User successful directly go to the Introduction 1 page	Pass
2.	Introduction 1	1. User is required to click Next button	User will directly go to the Introduction 2 page	User successful directly go to the Introduction 2 page	Pass
3.	Introduction 2	1. User is required to click Next button	User will directly go to the Login page	User successful directly go to the Login page	Pass
4.	Login	1. User is required to fill the name and password field before access the system	1. Prompt notification successful login 2. Prompt notification unsuccessful login if user not register 3. User will directly go to the Homepage	1. Successful prompt notification successful login 2. Successful prompt notification unsuccessful login if user not register 3. User successful directly go to the Homepage	Pass
5.	Register	1. User is required to fill the name, phone number, email, password and confirm password field before access the system	1. Prompt notification successful register 2. User will directly go to Login page after click Sign In button	1. Successful prompt notification successful register 2. User successful directly go to Login page after click Sign In button	Pass

Test Case: Homepage

Test Case ID	2		
Description	This test case is to verify: • The ability to view the homepage		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Homepage	1. User is required to choose which one they need to want click either culture, lesson or quiz button	User will directly go to the page they want either culture page, lesson page or quiz page	User successful directly go to the they want either culture page, lesson page or quiz page	Pass

Test Case: Culture Page

Test Case ID	3		
Description	This test case is to verify: • The ability to view the Korean culture		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure				
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results Pass / Fail
1.	Culture page	1. User is required to choose which one they want to learn and click either history, food, clothes or sports button	User will directly go to the one page they want either history page, food page, clothes page or sports page	User successful directly go to the one page they want either history page, food page, clothes page or sports page Pass

Test Case: Lesson Page

Test Case ID	4		
Description	This test case is to verify: • The ability to user learn about alphabet, numbers and daily words of Korean		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure				
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results
1.	Lesson page	1. User is required to choose which one they want to click either alphabet, numbers or daily words button	User will directly go to the one page they want either alphabet page, numbers page or daily words page	User successful directly go to the one page they want either alphabet page, numbers page or daily words page
				Pass

Test Case: Quiz Page

Test Case ID	5		
Description	This test case is to verify: • The ability to user play the games		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Quiz page	1. User is required to choose which one they want to click either mix and match game, sound and guess game button	User will directly go to the one page they want either mix and match game page or sound and guess game page	User successful directly go to the one page they want either mix and match game page or sound and guess game page	

Test Case: History Page

Test Case ID	6		
Description	This test case is to verify: • The ability to user to learn about history of Korea		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure				
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results
1.	History page	1. User need to click Next button to go next page 2. User need to click Back button to go previous page	User will go to the next page until the last page of History if user click Next button and user will go to the previous if click Back button	User successful go to the next page until the last page of History if user click Next button and user will go to the previous if click Back button
				Pass

Test Case: Food Page

Test Case ID	7
---------------------	---

Description	This test case is to verify: • The ability to user to view a Korean food		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Food page	1. User need to click Next button to go next page 2. User need to click Back button to go previous page	User will go to the next page until the last page of Food if user click Next button and user will go to the previous if click Back button	User successful go to the next page until the last page of Food if user click Next button and user will go to the previous if click Back button	Pass

Test Case: Clothes Page

Test Case ID	8
---------------------	---

Description	This test case is to verify: • The ability to user to view a Korean clothes		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Clothes page	1. User need to click Next button to go next page 2. User need to click Back button to go previous page	User will go to the next page until the last page of Clothes if user click Next button and user will go to the previous if click Back button	User successful go to the next page until the last page of Clothes if user click Next button and user will go to the previous if click Back button	Pass

Test Case: Sport Page

Test Case ID	9
---------------------	---

Description	This test case is to verify: • The ability to user to view a Korean sports		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Sport page	1. User need to click Next button to go next page 2. User need to click Back button to go previous page	User will go to the next page until the last page of Sport if user click Next button and user will go to the previous if click Back button	User successful go to the next page until the last page of Sport if user click Next button and user will go to the previous if click Back button	Pass

Test Case: Alphabet Page

Test Case ID	10
---------------------	----

Description	This test case is to verify: • The ability to user to view, hear sound and do writing exercise about a Korean alphabet		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Alphabet page	1. User need to choose one to click button either Vowels alphabet or Consonant alphabet button	User will directly go to the page that show the list of Vowels alphabet or Consonant alphabet	User successful directly go to the page that show the list of Vowels alphabet ot Consonant alphabet button	Pass

Test Case: Daily words Page

Test Case ID	11
---------------------	----

Description	This test case is to verify: • The ability to user to view a daily words of Korean		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure				
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results Pass / Fail
1.	Numbers page	1. User need to choose one button to click either Family, Emotions and Feelings or Gathering button	User will directly go to the page that they choose either Family page, Emotions and Feelings page or Gathering page	User successful directly go to the page that they choose either Family page, Emotions and Feelings page or Gathering page Pass

Test Case: Vowels Page

Test Case ID	12
---------------------	----

Description	This test case is to verify: • The ability to user to view, hear sound and do writing exercise about a Korean alphabet		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure				
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results
1.	Vowels page	1. User need to choose one button to click the list of Vowels alphabet	User will directly go to the page of alphabet that they choose and in that page also have writing exercise	User successful directly go to the page of alphabet that they choose and in that page also have writing exercise
				Pass

Test Case: Consonants Page

Test Case ID	13
---------------------	----

Description	This test case is to verify: • The ability to user to view, hear sound and do writing exercise about a Korean alphabet		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Consonant page	1. User need to choose one button to click the list of Vowels alphabet	User will directly go to the page of alphabet that they choose and in that page also have writing exercise	User successful directly go to the page of alphabet that they choose and in that page also have writing exercise	Pass

Test Case: Family Page

Test Case ID	14
---------------------	----

Description	This test case is to verify: • The ability to user to view and hear sound a Korean family		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Family page	1. User need to click Next button to go next page 2. User need to click Back button to go previous page	User will directly go to the page that start with family such as Father, Mother and others	User successful directly go to the page that start with family such as Father, Mother and others	Pass

Test Case: Emotional and Feelings Page

Test Case ID	15
---------------------	----

Description	This test case is to verify: • The ability to user to view and hear sound a Korean emotions and feelings		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Family page	1. User need to click Next button to go next page 2. User need to click Back button to go previous page	User will directly go to the page that start with emotion such as Happy, Sad, Angry and others	User successful directly go to the page that start with emotion such as Happy, Sad, Angry and others	Pass

Test Case: Greetings Page

Test Case ID	16
---------------------	----

Description	This test case is to verify: • The ability to user to view and hear sound a Korean greeting		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Family page	1. User need to click Next button to go next page 2. User need to click Back button to go previous page	User will directly go to the page that starts with greetings such as Hello, Good Morning or others.	User successful directly go to the page that starts with greetings such as Hello, Good Morning or others.	Pass

Test Case: Game Page

Test Case ID	17
---------------------	----

Description	This test case is to verify: • The ability to play the games		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Mix and Match game page	User need to resolve the game and click Next button	Prompt notification successful answer the game	Successfully prompt notification successful answer the games	Pass
2.	Sound and Hearing page	User need to resolve the game and click Next button	1. The color button will change to green if the answer is correct and red if answer is incorrect	1. The color button will change to green if the answer is correct and red if answer is incorrect	Pass

			2. User will directly go to the reward page after successful answer the game 3. User can hear the sound of words	2. User will directly go to the reward page after successful answer the game 3. User can hear the sound of words	
--	--	--	--	--	--

Test Case: Profile Account Page

Test Case ID	17		
Description	This test case is to verify: • The ability to user view their profile account		
Use Case ID			
Pre-condition	None	Priority	High
Test Environment	Manual Tester	Required Configuration	None
Comments / Results / Error Logs: None			
Tester Name: Gillian Kim			

Test Script Steps / Procedure					
No	Description / Case Scenario	Steps / Procedure	Expected Results	Actual Results	Pass / Fail
1.	Profile Account page	None	User will view their profile information that they register.	User successful view their profile information that they register	Pass

Based on Table 4.3 , the HangeulGenius application has successfully passed user acceptance testing and received client approval. The acceptance of the app is attributed to its effective teaching strategies, user-friendly user interface and interactive features, all of which have generated good user reviews. This approval shows that the app is ready to use and has the ability to help people learn Korean efficiently.

5.0 MAJOR FINDINGS AND DISCUSSION

The advantages and disadvantages of HangeulGenius application.

5.1 THE ADVANTAGES OF THE PROJECT

- I. Users are flexible to learn Korean language anywhere and anytime they are.
- II. Lessons, exercise activities and learning resources are easily accessible to learners via their mobile devices.
- III. The users can learn Korean language at their own speed thanks.
- IV. The users can improve their reading and writing as well as their listening comprehension, vocabulary and pronunciation skills.

5.1 THE DISADVANTAGES OF THE PROJECT

- I. Sometimes the application will be lagging
- II. The application cannot be run in iOS App Store

6.0 RECOMMENDATION AND CONCLUSION

6.1 Recommendations

Firstly, to make the HangeulGenius application more interesting, it is recommended to Prioritise Interactive and Gamified features. It prioritizes the development of interactive and gamified components inside the HangeulGenius app to increase user engagement and motivation. As example, such as incorporate exercise, quizzes, challenges, and prizes to encourage active involvement and make learning fun.

Additionally, Incorporate Cultural Lessons and Traditions. By incorporating cultural lessons and traditions, users will have a comprehensive understanding of Korean culture. Moreover, Include interesting Multimedia elements. This is because, it will enhance the learning experience by including interesting multimedia such as music and video. Lastly, by following this recommendations, the HangeulGenius application may provide an interesting and immersive environment for users.

6.2 Conclusion

In conclusion, the HangeulGenius application is a sophisticated and user-friendly mobile learning app that simplifies the process of learning the Korean Language and culture. Besides, with its lectures and interactive activities, the app provides a diverse set of features. It also incorporates quizzes to gauge comprehension, personalized learning paths, progress tracking, and real-world conversation practice.

Other than that, the HangeulGenius application also includes a digital lesson to teach users the basics of the Korean language and incorporates quizzes, such as sound guessing and mix and match games, to assess the comprehension of the language.

REFERENCES

Guest, J. (2019, March 23). *LingoDeer Review - Guest Hollow*. Guest Hollow.
<https://guesthollow.com/lingodeer-review/>

M. (n.d.). *Learn a language. Memrise is authentic, useful & personalized*. Learn a Language.
Memrise Is Authentic, Useful & Personalized. <https://www.memrise.com>

What Is Agile Methodology in Project Management? (n.d.). What Is Agile Methodology in Project Management? <https://www.wrike.com/project-management-guide/faq/what-is-agile-methodology-in-project-management/>

Google Translate. (n.d.). Google Translate. <https://translate.google.com.my/>

Duolingo - Learn a language for free @duolingo. (n.d.). Duolingo.
<https://www.duolingo.com/>