

Language Disorders Therapy Mobile Application for Preschoolers

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DOI: <https://doi.org/10.30880/aitcs.2024.05.02.071>

Article Info

Received: 19 July 2024

Accepted: 20 Oct 2024

Available online: 15 Dec 2024

Keywords

Language Disorders Therapy Mobile Application, Preschoolers ages 3 to 5, Agile Methodology, Android

Abstract

The Language Disorders Therapy Mobile application is an application that focuses on preschoolers between the ages of 3 to 5 who have language disorders at Elite Speech Therapy. However, some language disorders in the language development stage of preschoolers will seriously affect their academic performance, social interaction, and emotional health. Therefore, this study aims to design, develop, and test the functionality of a Language Disorders Therapy Mobile Application. In addition, the mobile application was developed using an agile methodology approach and an object-oriented approach. The Java programming language is used on the Android Studio software to develop the application and NoSQL as a database. This application can improve the language skills, social skills, and quality of life of the preschoolers, and the language therapists provide personalized intervention plans targeting each preschooler's needs and weaknesses to achieve effectiveness. In addition, it is expected to help deal with problems early in development, minimizing possible effects and providing a better opportunity for preschoolers to develop standard language skills and enhance social skills. Overall, the application will serve as a bridge for collaboration between therapists and parents, helping them focus on preschooler's language development.

1. Introduction

Language is the main method of expression for humans to communicate. Language ability is also one of the most critical aspects of the overall development of children. Children's language disorder is a developmental disorder that affects language comprehension and expression and usually harms children's academic performance, social interaction, and emotional health [1]. From 3 to 5 years old, preschoolers are in the stage of rapid development of language and cognitive ability [2].

However, there are some challenges in collaborative and educational support platforms among preschoolers with language disorders. Currently, mobile app clients and therapy appear unavailable in Batu Pahat. To design a Language Disorders Therapy Mobile Application for Preschoolers, the mobile application provides a collaborative and educational support platform, such as identification, assessment and intervention plan. The mobile application enables language therapists to develop intervention plans for preschoolers. Besides, parents can also use the test to identify whether their preschool children have language disorder

symptoms so that they can intervene as early as possible. The mobile application will improve preschoolers' language skills, ultimately helping improve preschoolers' language development and quality of life. Furthermore, language therapists can more easily monitor preschoolers' performance, and parents will be better able to participate in and assist preschoolers in resolving language disorders.

Therefore, introducing such a language disorders therapy mobile application can improve language therapists' work efficiency and better support the identification, assessment and intervention process of preschoolers with language disorders. This will help enhance preschooler's language development and quality of life.

1.1 Background Research

According to research, 11-18% of toddlers between the ages of 1.5 and 3 years will likely show significantly slower vocabulary development. These toddlers [3] are often called late talkers and have decreased expressive or comprehension skills. Most late talkers may show improved vocabulary after the age of 3 years, and preschoolers are able to perform language tasks within the normal range, even if preschoolers have some difficulty with everyday communicative interactions [4]. Language disorders are common in young children, and children with language disorders have difficulty expressing and comprehending, which has unrelated to hearing problems [5].

1.2 Problem Statement

The three significant problem statements may be addressed. First is the lack of identification and intervention plan. Early identification of symptoms is crucial for the timely treatment of language disorders, which requires evaluation by professional therapists. Moreover, resources may be limited in many areas, affecting delays in identifying and supporting effective intervention plans. The current technological development can effectively solve this problem. The mobile application provides language development questionnaire tools to help parents or guardians identify issues.

Second, there is a lack of insufficient family support. Family environment has a significant impact on language development for preschoolers. Some families may lack the resources to help preschoolers or do not understand how to provide practical support. The language therapists provide resources, such as intervention plans to support language development on the mobile application, that allow more parents to pay attention and understand the growth issues of preschoolers.

Third, there is difficulty monitoring progress. Parents may face the challenge of tracking preschoolers' language development long-term, and the lack of tools to monitor progress may result in specific undetected problems. Language therapists can record preschoolers' language development progress within the app, helping parents understand their preschoolers' needs and progress.

1.3 Objective

The proposed system is to design, develop, and test the functionality of a Language Disorders Therapy Mobile Application and the targeting for preschoolers ages 3 to 5.

2. Related Work

A literature review conducted for the application and the current management utilized by Elite Speech Therapy will be covered in this chapter. It includes explaining the technology used in the mobile application and discussing and comparing three types of existing related mobile applications.

2.1 Mobile Application Technology

The mobile application technology for building the Language Disorder Therapy Mobile Application for Preschoolers is Android, the popular and widely used mobile operating system. Firstly, Android's open-source architecture offers flexibility and customization, enabling the developer to customize it to the unique requirements of users with language disorders. Second, the Language Disorder Therapy Mobile Application for Preschoolers is available to a wide audience, proper to the widespread use of Android smartphones, which guarantees a broad reach. In addition, the development process is made more effective, streamlined, and efficient by the wide range of tools and resources the Android development ecosystem offers, such as Android

Studio. In conclusion, Android's accessibility and rich development ecosystem are the main reasons it was chosen to construct the Language Disorder Therapy Mobile Application for Preschoolers.

2.2 Case Study: Elite Speech Therapy Center in Batu Pahat

The case study location is at Elite Speech Therapy Center, Batu Pahat. Elite Speech Therapy's therapists treat a variety of cases and provide high-quality personalized intervention plans. Not only language disorders, including various language and speech problems, are among the diseases that Elite Speech Therapy can treat. Each patient has a regular language or speech therapist. Language or speech therapists will be assigned based on the type of case the patient needs treatment for. The existing process used in the organization does not have a website or mobile app to help patients identify symptoms and provide an intervention plan.

Moreover, a lack of identification and intervention programs in many areas may result in lagging behind the same age in communication, and early identification of symptoms and intervention is essential. To solve problems mainly based on traditional methods, after meeting the language therapists on Elite Speech Therapy, the therapist will provide an effective intervention plan in this application, allowing more parents to pay attention to and understand the growth problems of preschoolers. Appendix A shows a flow chart of the treatment process with Elite Speech Therapy.

2.3 Study of Existing Related Application

The author evaluates existing applications for improving language development. Three language disorders-related applications were investigated using Internet resources: Language Therapy Lite, Articulation Station, and Conversation Therapy.

Language Therapy Lite [6] is a powerful application and extensive language therapy toolset for free, but unlocking more advanced features or content may necessitate payment. However, it offers grammar lessons, vocabulary exercises, pronunciation exercises, and listening comprehension exercises. Users may practice language and improve sentence structure and grammatical abilities. It also offers pronunciation exercises to assist users in fixing pronunciation issues and vocabulary activities to help users increase vocabulary. To enhance users' listening abilities, it also includes listening comprehension activities. This application provides real full-color photographs and email reports suitable for adults with language disorders, all included in the Language Therapy Lite components.

Articulation Station [7] is a content-rich app that helps children learn how to pronounce words correctly, with free and paid content. It offers six exciting activities: comprehension questions, rotating and unique sentences, matching, flashcards, and stories. These activities can help children practice English pronunciation and improve comprehension skills. This application can improve user's vocab through flashcards. It also offers matching games involving matching words, pictures, or symbols to help strengthen pronunciation skills [8].

Conversation Therapy [9] is an app for practicing communication strategies, which is a payment application. It provides features including real-life conversations, individual sessions, group sessions, and multiple-level questions. This application encourages users to engage in real-life conversations and improve language and communication skills. However, this application has thousands of questions, and users can spark understanding levels through Conversation Therapy, which can help with language, speech, fluency, cognition, and pragmatics developments. Moreover, adults and older kids might benefit more from this application than younger children [10].

2.4 Comparison with the Existing Application

Three existing applications related to language disorders, Language Therapy Lite, Articulation Station, and Conversation Therapy, are utilized to enhance the functionality of the proposed Language Disorders Therapy Mobile Application for Preschoolers. Table 1 compares the three established applications and the proposed Language Disorders Therapy Mobile Application for Preschoolers.

Table 1 Comparison with the existing application

Features / Applications	Language Therapy Lite	Articulation Station	Conversation Therapy	Language Disorders Therapy Mobile Application for Preschoolers
Sign up / Log in	√	√	√	√
Database	X	√	X	√
Questionnaire	X	X	X	√
Report Generation	X	X	√	√
Profile Management	√	√	√	√
Intervention Plans	X	X	X	√
Assessment Result	X	X	X	√
Physical Interactive Activity	X	X	X	√
Face-to-face therapy	X	X	X	√
Online Practice and Interactive Activities	√	√	√	X

Based on Table 1, these applications offer various features and modules to users. Language Therapy Lite and Articulation Station offer more comprehensive functionality. Furthermore, both language disorders applications include vocabulary, pronunciation, listening, and comprehension practice modules. In addition, Language Therapy Lite also has grammar practice, which is a unique feature among the four applications. Conversation Therapy also has a unique feature, which is real-life conversation practice.

Nevertheless, the Language Disorders Therapy Preschool Mobile Application is also satisfactory. Although it does not have an online practical function, it has a questionnaire module, physical interactive activity, and face-to-face therapy, which means language therapists will personally tutor preschoolers on language issues. Overall, each application's specific features and functionality will substantially impact its suitability for various purposes and users.

3. Methodology/Framework

The mobile application was developed using an Agile approach [11]. Agile is a software development process that is iterative and step-by-step. Agile application development aids in the organization of design and planning methodologies, development, and testing methods across the software lifecycle. The main goal of choosing an agile approach is to minimize risk because Agile application development techniques can be regularly upgraded and continuously improved, gradually improving their quality. Each build is incremental in features, with the final build containing all the features the customer requires. After understanding the requirements analysis, implement the designed application to meet the needs of Elite Speech Therapy and tested to ensure the functionality of the application. The mobile application was then ultimately delivered to Elite Speech Therapy for feedback. The project plans to create Appendix B to clarify the schedule. Each phase has its own task and output that need to produce during the entire project development.

First, requirement analysis phase will identify the background, problem statement, objectives, requirements, and scope of the project, including the target users and the software or platform that will be developed to provide direction for the project. The planning phase is determining the project plans and creating Appendix A to clarify the schedule, which helps the author understand the project's direction, progress, time and task management. Next, design phase is designs the user interface and builds the project's overall architecture, determining how the application will be organized and built, this helps ensure the maintainability and scalability of the application to adapt to future changes in requirements. Besides, the development phase is about developing the application by writing code, including front-end, back-end design and the develop database to store the data. In addition, the author needs to conduct unit testing, and code review to ensure good functionality.

Therefore, testing phase is carried out at the same time as development, as it is necessary to ensure functional stability and good operation. Authors need to perform unit tests to review the code, integration tests to ensure features work together, and functional tests to ensure features work as expected. In addition, the deploy phase aims to deploy the developed and tested application to the application store and make it available to users. Furthermore, to deploy completed features or versions to the application store. In addition, to ensure that the deployed application is available and that the application can be launched for users and provide

maintenance and support to ensure the system's stability in the application store. Lastly is the review and maintenance phase, this aims to review and provide maintenance for application. Conduct the feedback from Elite Speech Therapy and collect the evaluation. The developer provides the maintenance if needed.

4. Analysis and Design

The analysis and design requirements for the application that will be developed include system architecture, database, and user interface wireframe. This section also describes the Unified Modelling Language (UML), such as use case, class diagram, and flow chart. The outcomes of the analysis and design of this application may ensure that its functional process is more easily understood and that it can satisfy stakeholder's needs.

4.1 Use Case Diagram

The use case diagram was created to illustrate the overall functionality and components of the application. The description or module implemented in the suggested system will explain the use case diagram. Fig. 1 shows the use case diagram of the proposed system. In the Language Disorders Therapy Mobile Application for Preschoolers, the actors identified for this system are users (parents or guardians of preschoolers) and language therapists.

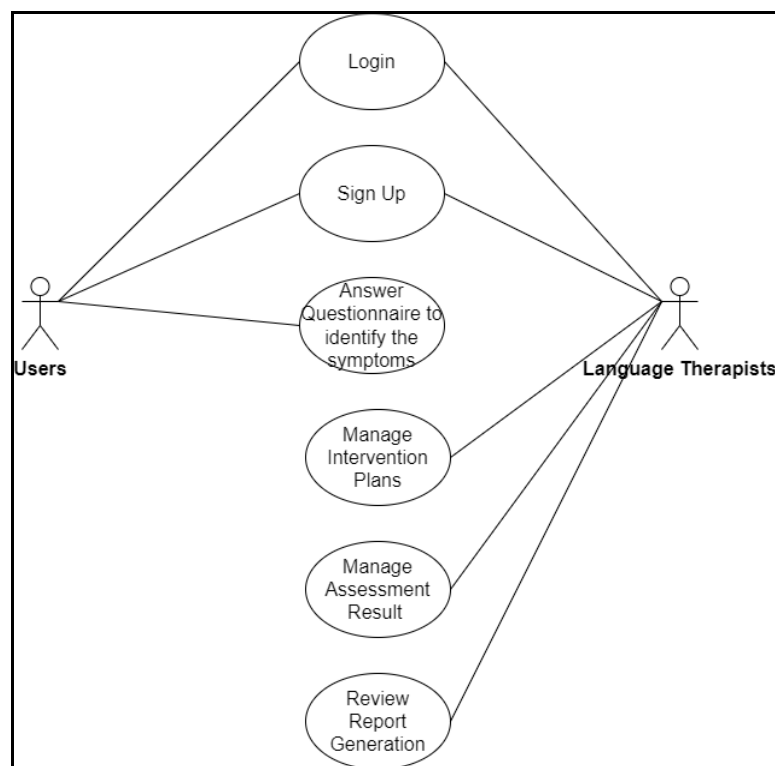


Fig. 1 Use case diagram of the proposed system.

4.2 Class Diagram

The class diagram is a unified modelling language (UML) diagram used to describe and visualize the classes, attributes, operations, and relationships between objects of the system. This type of diagram provides a high-level view of the system structure, which allows the developer to clearly understand and know what those classes are to do and what the service offers. The class diagram of the proposed system is shown in Fig. 2.

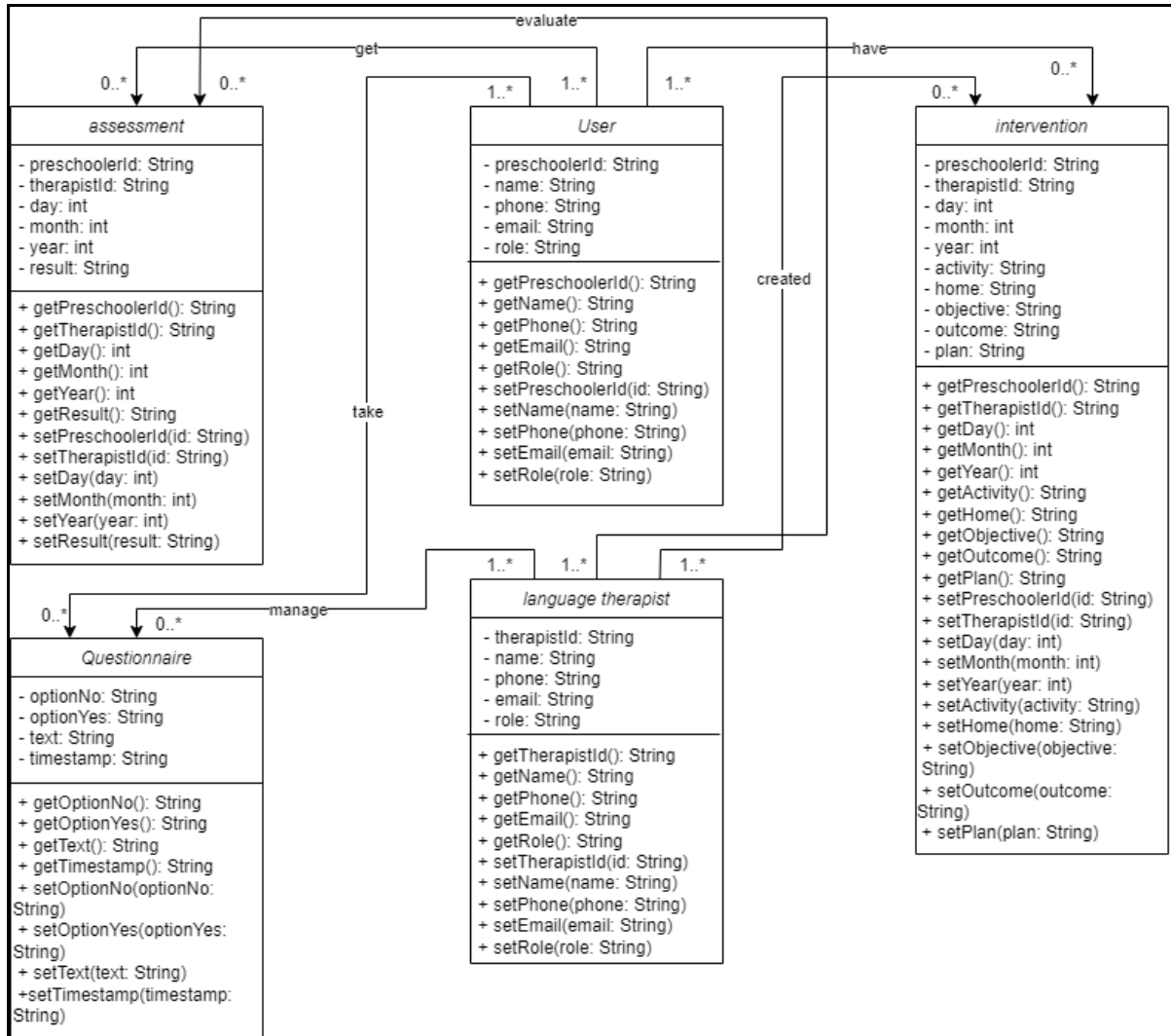


Fig. 2 Class diagram of the system.

4.3 Interface Design

User interface design is designing and building the user interface in the language disorder therapy mobile application for preschoolers. The author uses a hand drawing of the wireframe on the tablet that can guide before structuring the coding, as shown in Fig. 3.

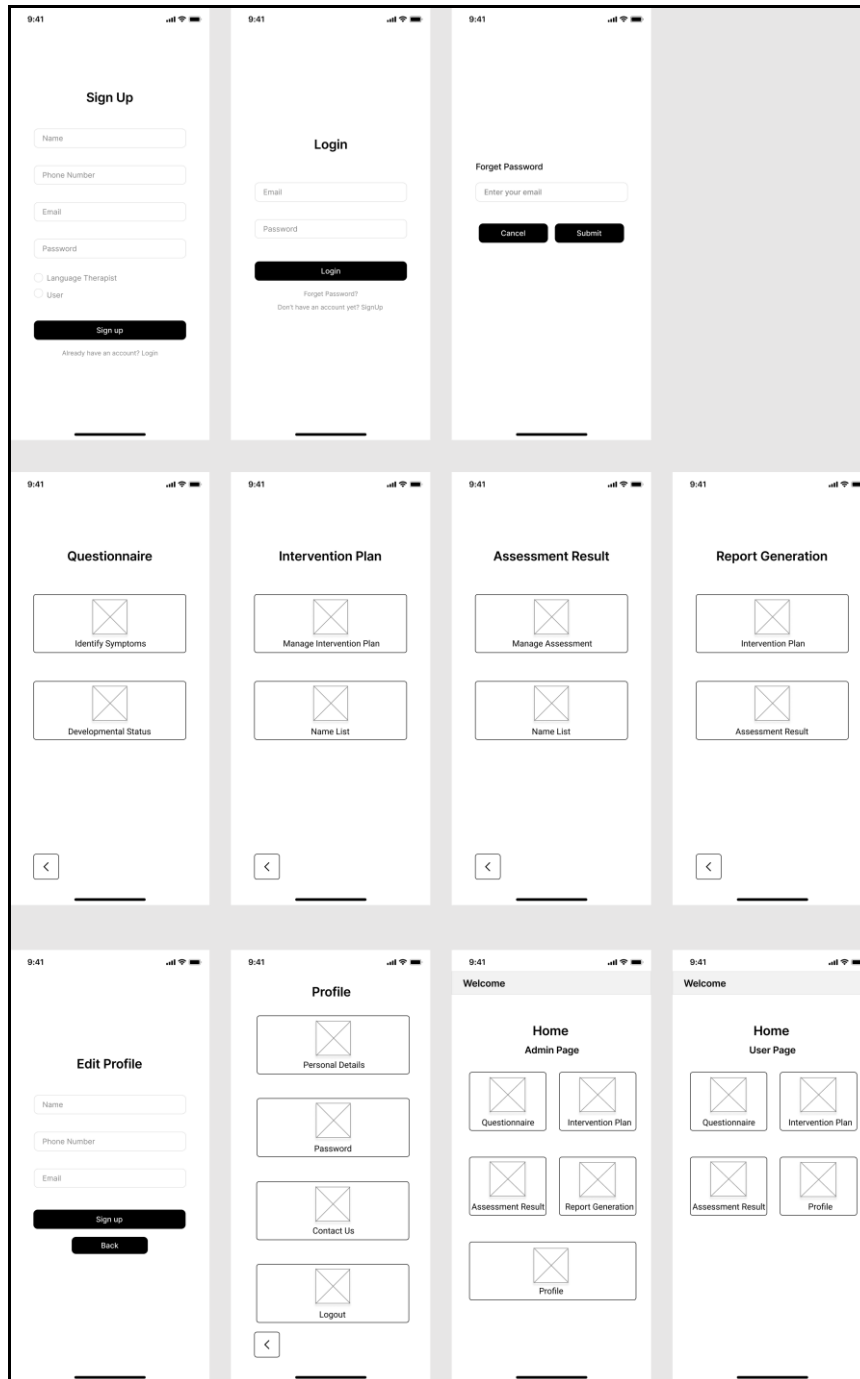


Fig. 3 Wireframe of the system.

5. Result and Discussion

The project will be coded using Java programming language. Besides the software used is Android Studio and Firebase. The Android Studio is an integrated development environment for Android application building. Firebase is a mobile and web application development platform provided by Google that offers features such as a Firestore database, authentication, and more.

5.1 System Implementation

This section briefly discusses the development of functional modules in a system. Fig. 4 shows a splash screen. When the user clicks the “Language Disorder Therapy” application, the splash screen with the logo will be displayed.



Fig. 4 *Splash screen.*

The user is required to log in to the application using the user's email addresses and passwords. Fig. 5 shows the login page interface and Fig. 6 shows the signup page interface. Users who have not signed up can sign up for an account first. The user must fill out the full name, valid phone number, email address, and password and select the role on the signup page.

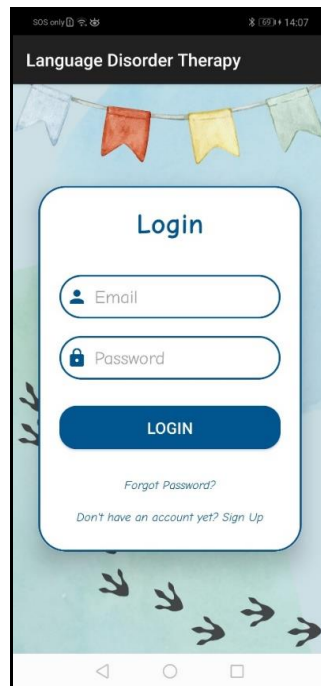


Fig. 5 *Login page.*

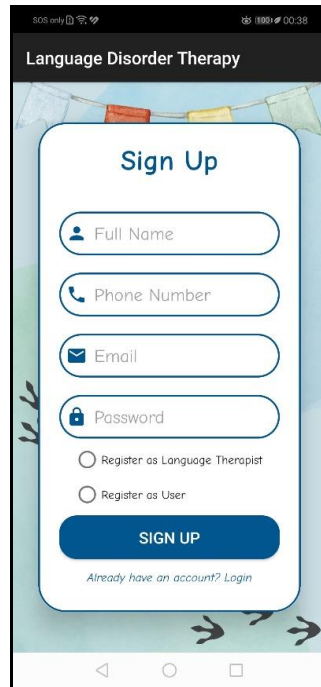


Fig. 6 Signup page.

Fig. 7 shows the home interface of the role of therapists. There are 5 module icons in the home interface. It contains the Questionnaire, Intervention Plan, Assessment Result, Report Generation, and Profile modules.

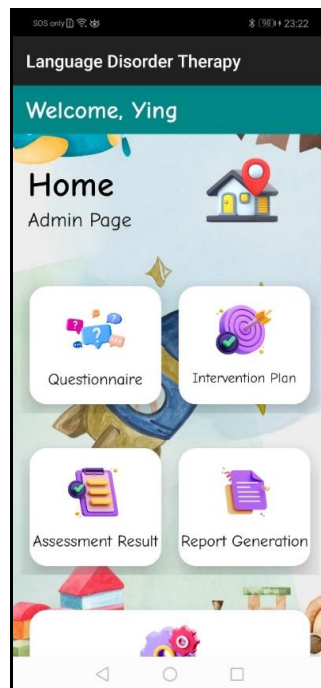


Fig. 7 Home interface of the role of therapists.

Fig. 8 shows the manage questionnaire module interface. In this interface, there are two sub-modules for language therapists to manage the questionnaire, which are identifying symptoms and developmental status language progress. At the left lower is the exit button, it can end this activity and go back to the previous activity. In addition, the manage identify symptom interface allows therapists to add questions related to identifying language delay. There is a list view that displays the added questions. The therapist is allowed to update and delete questions in the list. There are two grey boxes of edit text above. The first one is the announcement, which provides therapists with instructions that therapists can give to users. The second one is the result, which allows the therapist to put the generally identified result to the user for reference. When clicking the create button, the

"Create" button and dialog box are displayed. The input data is retrieved from the text fields when the button is clicked. The language therapists must fill in all the text fields, and a new Question object is created and populated with the input data. Therefore, the new question will be saved in the Firestore. After that, the question list view and its adapter are updated to include the new question.

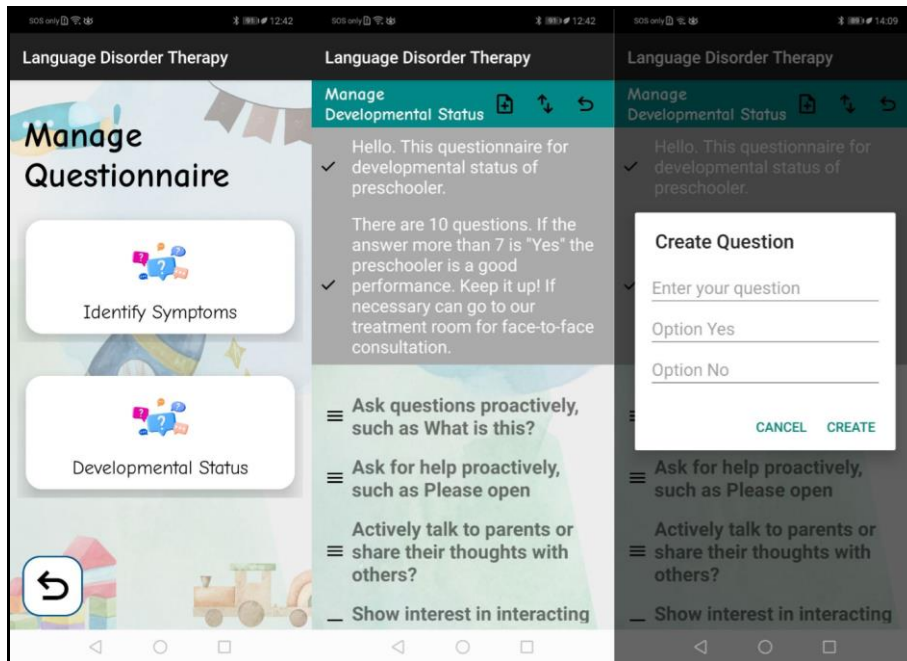


Fig. 8 Manage questionnaire module interface.

The questionnaire module interfaces of a general user are shown in Fig. 9. First will appear the latest announcement. The parents or guardian can answer based on preschooler status. The group radio buttons allow users to select one option from multiple choices. Next, a submission alert dialog will appear when the user clicks submit after answering all the questions. It provides lists of question texts and corresponding answers and results. Each question and answer pair appends the question number, such as Question 1, Question 2, and so on, and the answer to the message builder. The bottom will append the identify results.

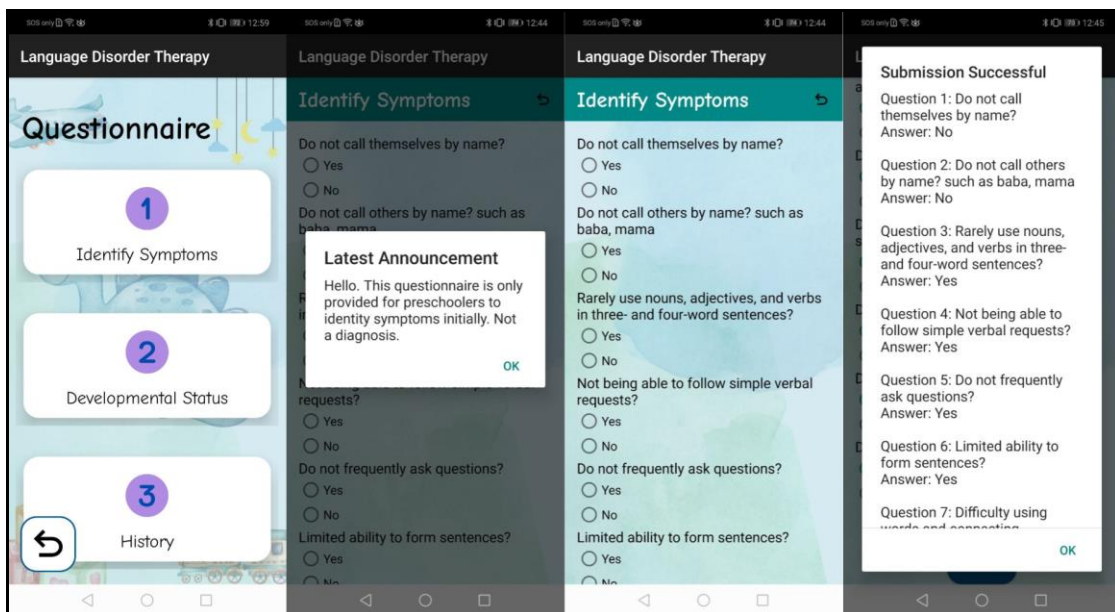


Fig. 9 Questionnaire module interface.

The intervention module interface is shown in Fig. 10. In this interface, there are two sub-modules for language therapists to manage the intervention plan and the name list. The managed intervention plan allows therapists to create, view, update, and delete. On the top toolbar are the create, sorting, and exit buttons. The bottom of the toolbar has a search bar, and the language therapists can search the preschoolers' names here. First, select the therapy date on the date picker, choose the particular preschooler's name on the spinner, and fill out all the information. The information on the intervention plan contains the therapy objective, activity, home-based programme, outcome, and plan. In addition, after language therapists create an intervention, it will appear in the list view, and the specific preschooler will receive the intervention plans.

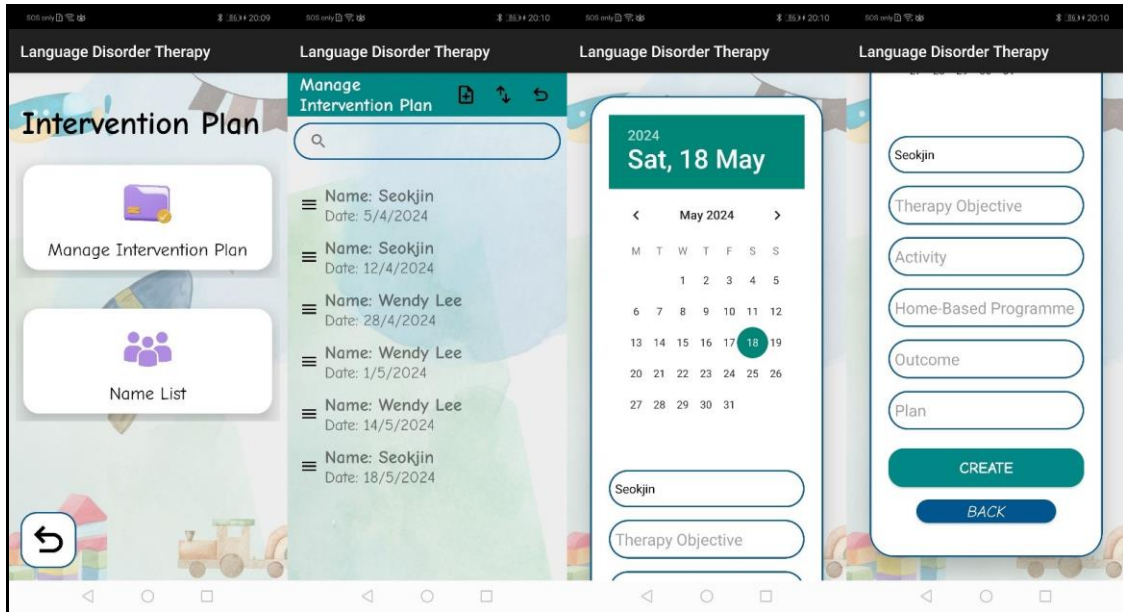


Fig. 10 Intervention module interface.

The assessment module interface is shown in Fig. 11. In this interface, there are two sub-modules for language therapists to manage the assessment result and the name list. The manage assessment result allows therapists to create, view, update, and delete. When a list view option is clicked, there are three button click events, and the switch case is used to execute different options, which are view, update, and delete. The view options will show the assessment details. The update dialog allows the therapist to update the content of the assessment. Last, the delete option enables the therapist to delete any assessment on the list view when the therapist deletes it, which means the specific preschoolers cannot receive it.

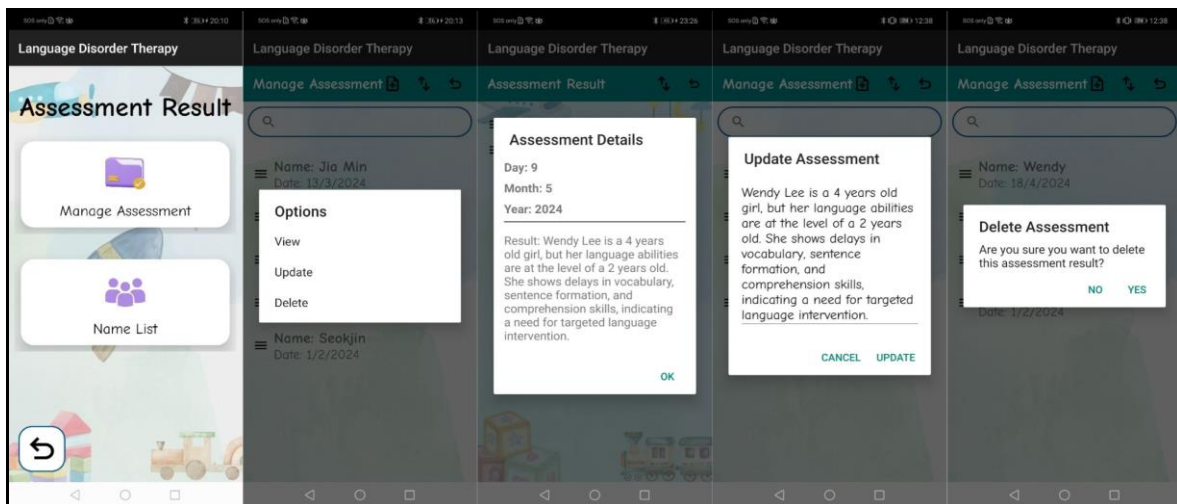


Fig. 11 Assessment module interface.

The report generation module interface is shown in Fig. 12. This interface also has two sub-modules for language therapists to choose from for intervention plans and assessments. At the left lower is the exit button. It can end this activity and go back to the previous activity. After the language therapist selects the report type, the interface will display all reports created by the language therapist in a list view. If the language therapist chooses to export the report, a dialog will appear, allowing the language therapist to enter the file name and click export. The language must fill in the file name, and there is a preview name below the file name. The report will download on the device as a PDF file.

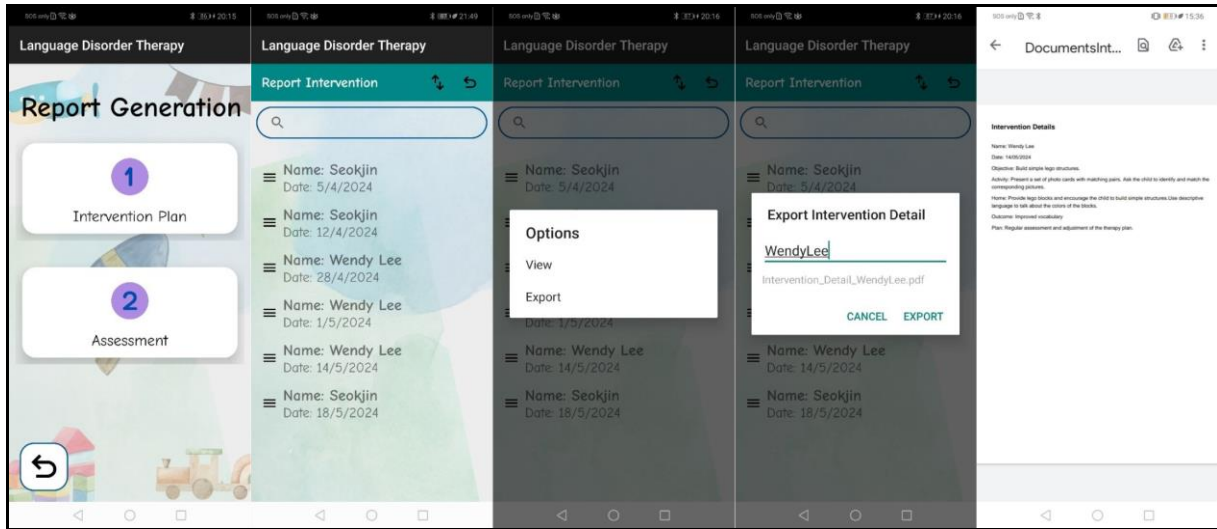


Fig. 12 Report generation module interface.

The profile interface is shown in Fig. 13. There are four sub-modules, which are personal details, password, contact us, and logout. The personal details display the current user name, phone number, and email address and allow users to edit the name and phone number. Next, the password allows the user to change a new password. The contact us displays the company name, location, contact number, and email address.

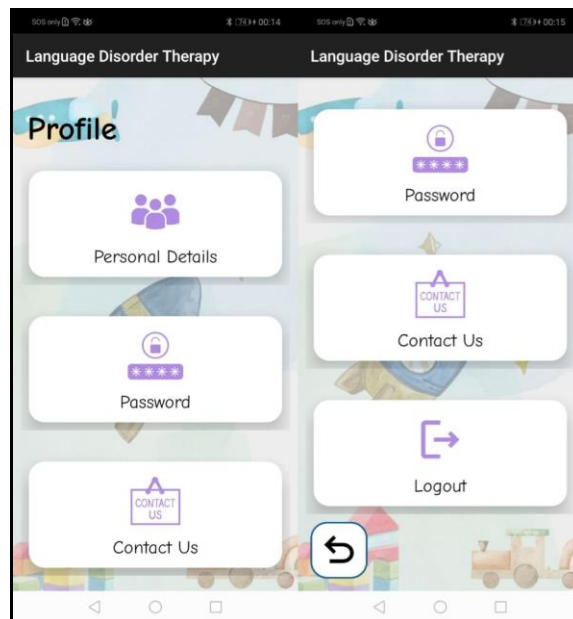


Fig. 13 Profile interface.

5.2 Beta Testing

This section uses beta testing to collect and analyse feedback on the Language Disorder Therapy application. Fig. 14 and Fig. 15 show the feedback of the system testing form. The language therapists at the case study site completed the questionnaire, which consists of Part A (a scale of 1 to 5) and Part B (yes or no). Moreover, a set questionnaire was created in Google Forms and shared with ten users to fill in later when users test the application. In Google Forms, there were two sections with ten questions, which are User Interface Design and Functionality. Two graph results of user interface design and functionality are provided in this section. Appendix C Section A shows the system testing form of language therapists. Appendix C Section B shows some graph results on user interface design. Appendix C Section C shows some graph results on functionality. Appendix D shows the therapy class with preschoolers.

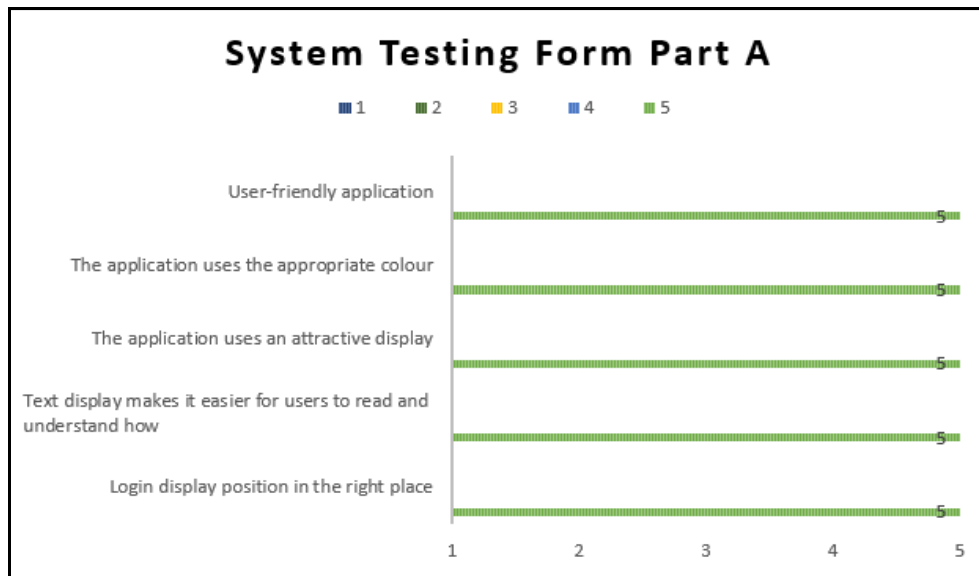


Fig. 14 Graph result of a part A.

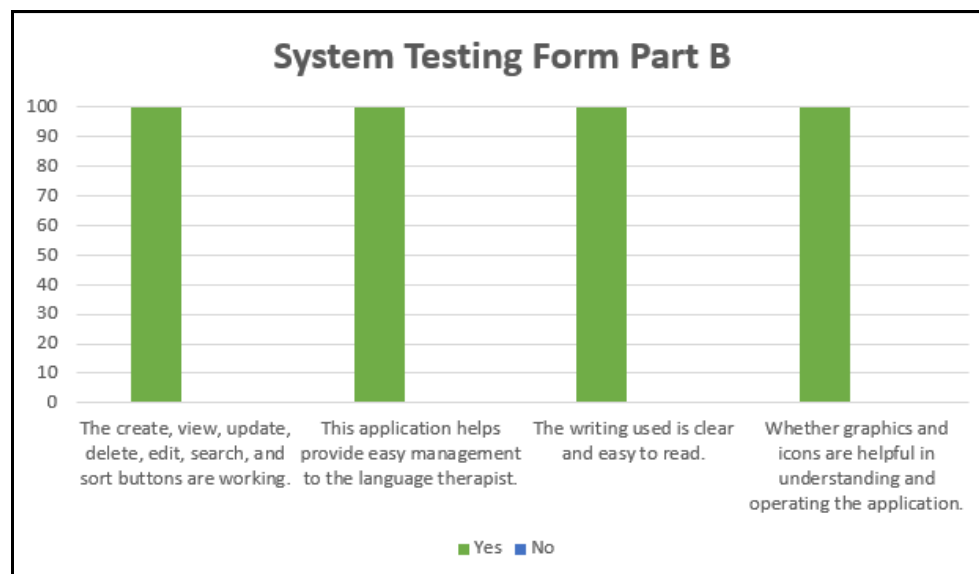


Fig. 15 Graph result of a part B.

The survey asked respondents to rate the user interface design and functionality. The overall user experience graph results are shown in Fig. 16. Three of ten rated it as "good," while seven rated it as "very good." The overall user experience graph results are shown in Fig. 17. Two out of ten responses rated it as "good," while eight rated it as "very good." Therefore, these results indicate that most participants were highly satisfied, indicating an excellent appreciation for the design, and most participants had a favourable experience and expressed high satisfaction.

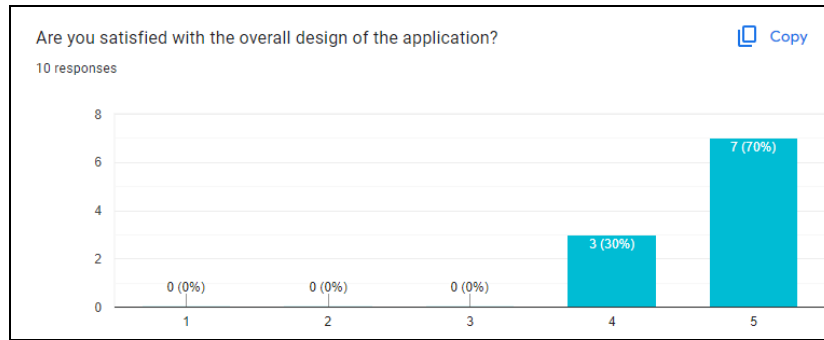


Fig. 16 Graph result of overall design.

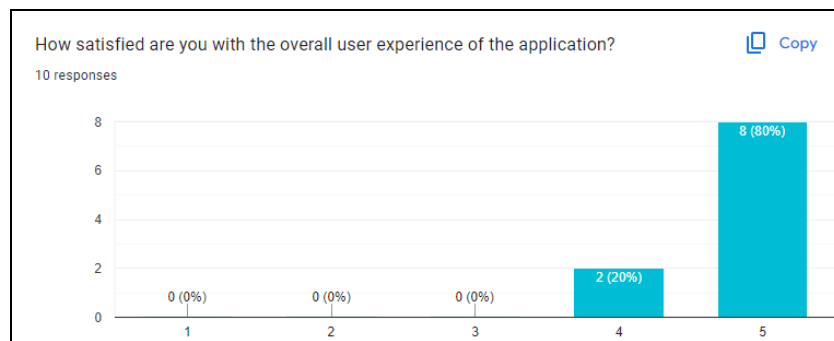


Fig. 17 Graph result of overall user experience.

6. Conclusion

The project is expected to be a feature-rich language disorders mobile application for preschoolers aged 3 to 5. The mobile application will help identify and intervene in language disorders in early childhood, assisting problems to be dealt with early in development, minimizing possible effects, and providing a better opportunity to develop standard language skills and enhance social skills. It can boost confidence and fight anxiety [12]. The mobile application features a personalized intervention plan a therapist delivers, targeting each preschooler's needs and weaknesses. This helps parents provide targeted support to facilitate preschooler's language development. The mobile application can improve convenience, supervision, and cooperation between therapists and parents. Overall, the application will serve as a bridge for collaboration between therapists and parents, helping them share a common focus on preschooler's language development.

Acknowledgement

The authors would like to thank the Faculty of Computer Science and Information Technology, Universiti Tun Hussein Onn Malaysia for its support.

Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

This journal requires that all authors take public responsibility for the content of the work submitted for review. The contributions of all authors must be described in the following manner:

*The authors confirm contribution to the paper as follows: **study conception and design:** Soh Ying Ying, Munirah Binti Mohd Yusof; **data collection:** Soh Ying Ying; **analysis and interpretation of results:** Soh Ying Ying, Munirah Binti Mohd Yusof; **draft manuscript preparation:** Soh Ying Ying. All authors reviewed the results and approved the final version of the manuscript.*

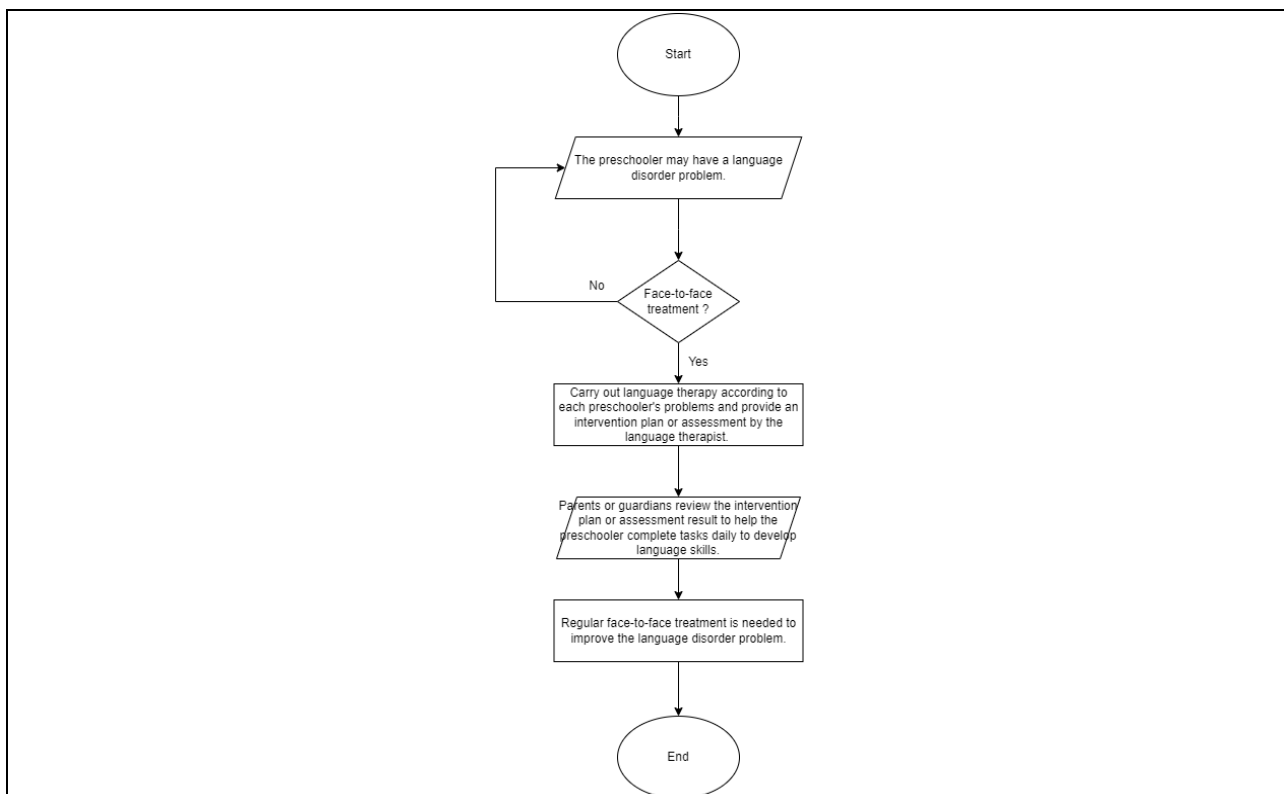
An author name can appear multiple times, and each author name must appear at least once. For single authors, use the following wording:

The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

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Appendix A: Flow Chart



Appendix B: Gantt Chart

ID	Task Name	Duration	Start	Finish
1	1.0 Requirement Analysis	17 days	Sun 10/8/23	Sun 10/29/23
2	Define Project Background	3 days	Sun 10/8/23	Tue 10/10/23
3	Define Project Problem	2 days	Wed 10/11/23	Thu 10/12/23
4	Define Project Objective and Scope	3 days	Sun 10/15/23	Tue 10/17/23
5	Define User Requirements Analysis	5 days	Tue 10/17/23	Mon 10/23/23
6	Submit Proposal	1 day	Tue 10/24/23	Tue 10/24/23
7	Define Software Requirement	4 days	Wed 10/25/23	Sun 10/29/23
8	2.0 Design	16 days	Mon 10/30/23	Sun 11/19/23
9	Determine Module Function	3 days	Mon 10/30/23	Wed 11/1/23
10	Design overall architecture	3 days	Wed 11/1/23	Fri 11/3/23
11	Unified Modeling Language (UML) Design	5 days	Sun 11/5/23	Thu 11/9/23
12	Entity Relationship Diagram (ERD) Design	5 days	Sun 11/12/23	Thu 11/16/23
13	Design User Interface	3 days	Thu 11/16/23	Sun 11/19/23
14	3.0 Development	99 days	Mon 11/20/23	Thu 4/4/24
15	Develop Front End Design	31 days	Mon 11/20/23	Mon 1/1/24
16	Develop Back End Design	49 days	Mon 1/1/24	Thu 3/7/24
17	Develop Database	20 days	Sun 3/10/24	Thu 4/4/24
18	4.0 Testing	6 days	Thu 4/4/24	Thu 4/11/24
19	Testing Mobile Application	3 days	Thu 4/4/24	Mon 4/8/24
20	Final Project Ready	1 day	Mon 4/8/24	Mon 4/8/24
21	Identify the Error	2 days	Tue 4/9/24	Wed 4/10/24
22	Determine Functional	1 day	Thu 4/11/24	Thu 4/11/24
23	5.0 Deployment	20 days	Sun 4/14/24	Thu 5/9/24
24	Ensure the deployed application is available	2 days	Sun 4/14/24	Mon 4/15/24
25	Ensure maintenance of the application	2 days	Mon 4/15/24	Tue 4/16/24
26	Draft Final Report of FY	18 days	Tue 4/16/24	Thu 5/9/24
27	6.0 Review / Maintenance	17 days	Sun 5/12/24	Sun 6/2/24
28	Feedback from User	7 days	Sun 5/12/24	Sun 5/19/24
29	Collect the evaluation	1 day	Mon 5/20/24	Mon 5/20/24
30	Provide Maintenance if needed	7 days	Mon 5/20/24	Tue 5/28/24
31	Submit All Report	3 days	Tue 5/28/24	Thu 5/30/24
32	Project Submitted	1 day	Sun 6/2/24	Sun 6/2/24

Appendix C: System Testing Form (Section A)



Universiti Tun Hussein Onn Malaysia

Universiti Tun Hussein Onn Malaysia, Parit Raja, Batu Pahat Johor.

Language Disorders Therapy Mobile Application for Preschoolers

Student Name : SOH YING YING
 Matric Number : D1210074

***Note: This System Testing Form is provided to get feedback from system users to find out the extent of the capabilities of the developed system. This form has 3parts: Part A, Part B and Part C. Please answer all the questions.*

Part A.
 Please mark (/) in the appropriate rating box.

1	Unsatisfactory
2	Satisfying
3	Moderately Good
4	Good
5	Very Good


No	Question	1	2	3	4	5
1	User-friendly application					/
2	The application uses the appropriate colour					/
3	The application uses an attractive display					/
4	Text display makes it easier for users to read and understand how to use the application					/
5	Login display position in the right place					/

Part B.
 Please mark (/) on Yes or No.

No	Question	Assessment	
		Yes	No
System Contents			
1	The create, view, update, delete, edit, search, and sort buttons are working.	/	
2	Presentation of interesting content	/	
3	Management of language therapy is sufficient, including the questionnaire, intervention plans, assessment results, and report generation.	/	
4	Whether the system includes management functions, such as signup and login	/	
User Friendly			
1	This application is easy to use	/	
2	The interface design is simple and beautiful, aligning with the aesthetics	/	
3	This application helps provide easy management to the language therapist	/	
4	New users can quickly get started using the application	/	
Text			
1	The writing used is clear and easy to read	/	
2	The writing used is appropriate	/	
3	The word used are easy to understand	/	
4	Whether the layout of the text is reasonable will help improve the reading experience	/	
Graphic			
1	The background is appropriate	/	
2	The colours used are appropriate	/	
3	Attractive interface design	/	
4	Whether graphics and icons are helpful in understanding and operating the application	/	
Overall System Assessment			
1	Does the system demonstrate good performance metrics, such as fast loading?	/	
2	Does the overall system functionality meet expectations?	/	
3	Does the system provide sufficient security and data protection measures?	/	
4	Have usability tests been conducted to evaluate the overall user experience?	/	

Part C.
 Please provide any comments or feedback regarding your experience with the system.

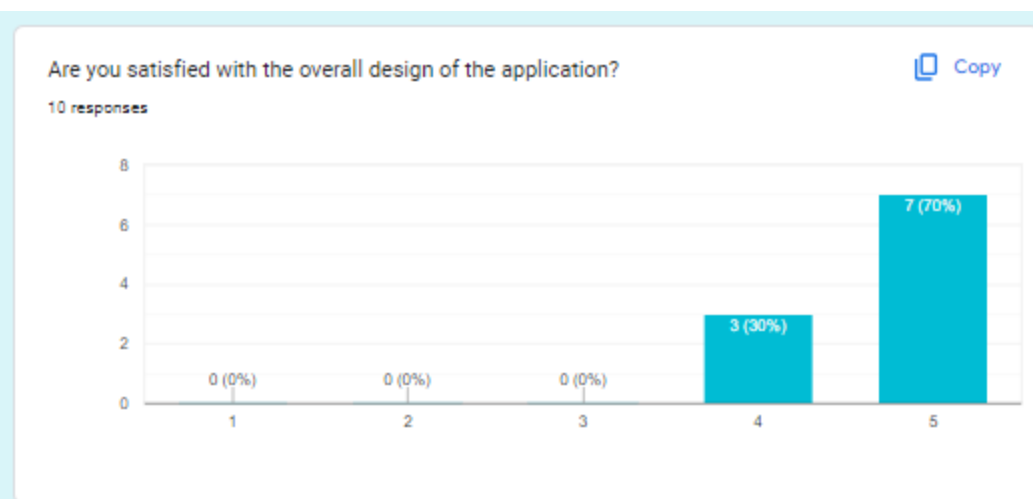
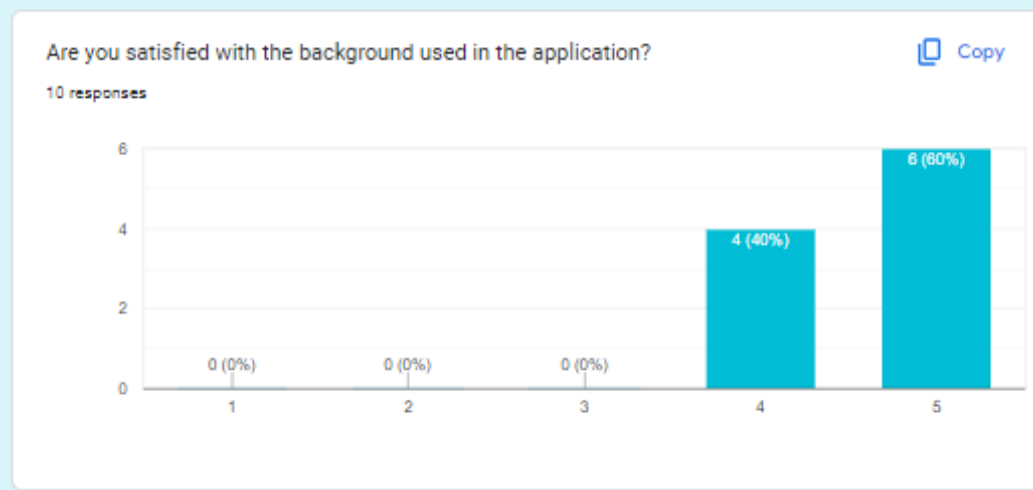
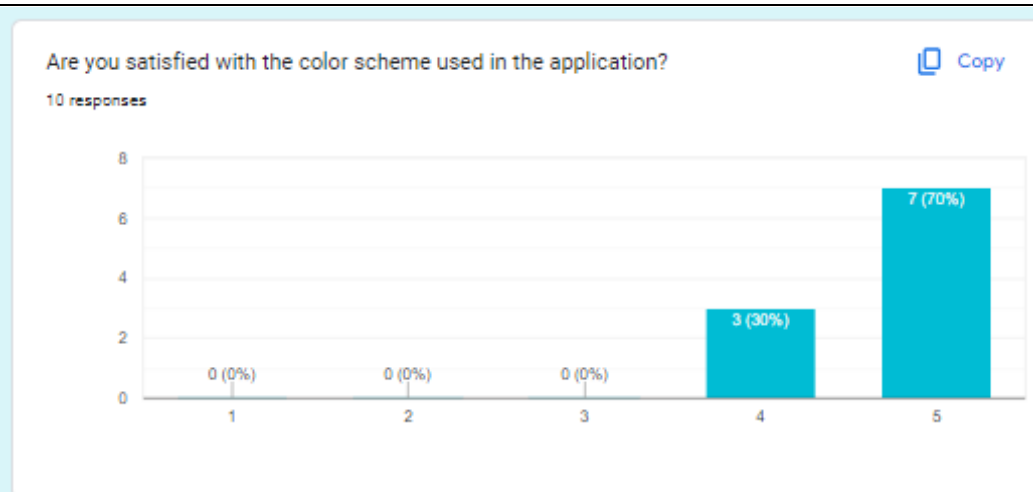
Comment: _____

Sign:  Cop: _____

Date: 23/5/2024

ELITE SPEECH THERAPY
 (JRI 0038998-40)
 34, JALAN KUNDANG,
 TAMAN BUKIT PASIR,
 83000 BATU PAHAT, JOHOR.

Appendix C: User Interface Design (Section B)

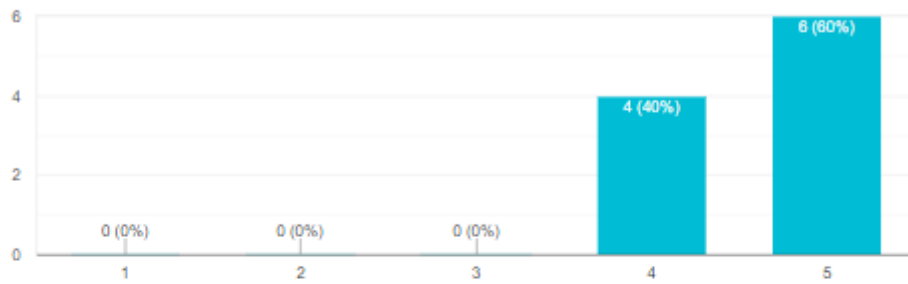


Appendix C: Functionality (Section C)

Are the buttons within the application working correctly and as expected?

 Copy

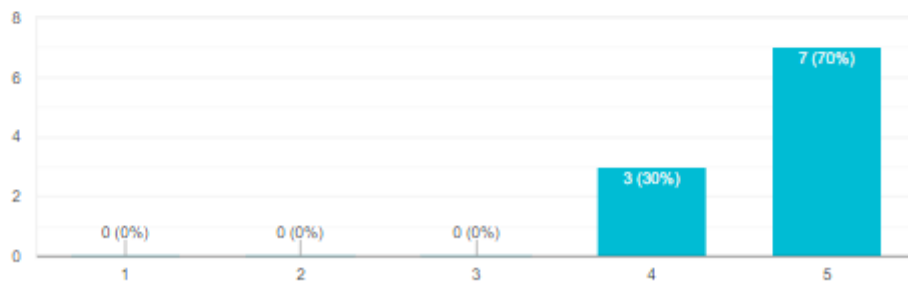
10 responses



Are interactive elements (e.g., questionnaire, edit profile) functioning properly?

 Copy

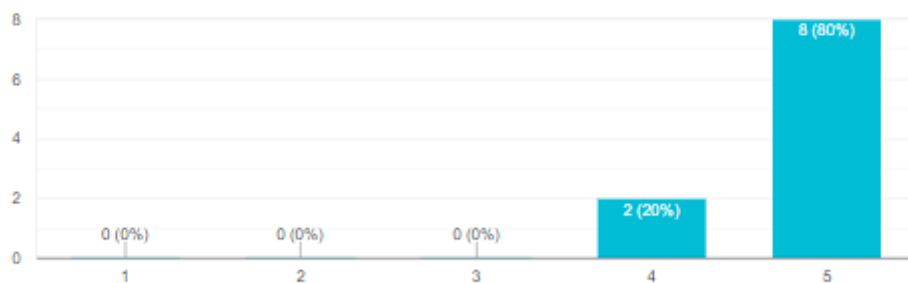
10 responses



How satisfied are you with the overall user experience of the application?

 Copy

10 responses



Appendix D: Therapy Class

