



Department of Information Technology and Communication

Diploma In Information Technology And Communication (Digital Technology)

1st Aid Teaching Apps

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Declaration

We hereby declare that the technical report entitled "**1ST AID TEACHING APPS**" is based on the results of the work under the guidance of **PUAN HARMILA BINTI TUKIMAN** and hope that this project has received due recognition. We also declare that it has not been advanced by other institutions.

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APPROVAL FOR SUBMISSION

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Abstract

Abstract Social relatedness, communication and play difficulties, as well as restricted interests and activities, are typically used to diagnose children with autism spectrum disorders (ASDs). As a result of their poor verbal and nonverbal communication abilities, interacting and talking with kids with ASDs is particularly challenging. Being unable to vocally convey their wants, children must instead utilise gestures or pointing to communicate their demands, making it extremely difficult to understand their needs. Parents and other caregivers must take extra care to promote their social engagement. As a result, an educational app for kids with ASDs was created to help them. The programme benefits both parents and children with ASDs by assisting them in social interaction and communication. This app is for autism children can learn about vocabulary more easy and very effective.

Appreciation

First of all, we would like to express our gratitude to God has blessed us with health and guidance to complete this project with perfect. We can execute this project perfectly. The result of this work is above help from various parties. Not only that, the group members also cooperate good in completing this project. On this occasion, we would also like to say a million thanks to Puan Harmila Binti Tukiman who is our supervisor because she guides a lot incomplete this project. He explained a lot about how to do it project. Although he is busy, he still has time to be with us provide a description of the project. Finally, I hope this project can be developed further in the future come.

1.1 Introduction

Autism spectrum disorder (ASD) is a developmental disability caused by differences in the brain. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines ASD as “persistent deficits in social communication and social interaction across multiple contexts” People with autism often have problems with social communication and interaction and restricted or repetitive behaviours or interests. People with autism may also have different ways of learning, moving, or paying attention. It is important to note that some people without ASD might also have these symptoms.(American Psychiatric Association [APA], 2013).

Symptoms are typically visible around age two but could be seen earlier. The symptoms are broken into three main categories: communication, emotional and social difficulties. People with ASD may also express less interest in social interactions. They also present with difficulty switching activities and staying organized. ASD patients have extreme difficulty with change and present restricted or repetitive behaviours that impair functioning. While there is not a cure for ASD there are many treatments that can help with symptoms. For example, individuals with ASD need various interventions depending on their symptoms and level of disorder severity (APA, 2013).

Parents may notice symptoms associated with how children interact socially, their responsiveness to stimulation, and their communication ability. Symptoms of autism include repetitive behaviours, limited interests, and problems with interaction. There is currently no one standard treatment for ASD given that its symptoms vary across individuals. However, research indicates that interactive media serious games (that is, games whose primary purpose is education and training), can be effective. This application is created while keeping the fundamental concepts in mind to help kids learn the basic skills needed daily.

There are many apps for children with autism on distribution platforms such as the Google Play Store and the AppStore, but not all of them have a positive impact on children with autism who are in desperate need of physical therapy. This project was created to bring the best possible results and help children with autism learn more about life.

1.2 Problem statement

A major problem for children with autism is a lack of motivation, especially when learning new tasks and adjusting to social and school settings. This will cause them to study many times to understand.

The second problem is that it is difficult for teachers to know the learning progress of children with autism. When the teacher is teaching them, the teacher has no way of knowing whether the autistic understands what they are teaching.

1.3 Objective

This app is primarily developed for children with autism, the objectives of this app are:

- To develop the app to help children with autism more easily repeat study.
- To identify learning level of children with autism.

1.4 Scope

1.4.1 User Scope

- Children with autism - This app is suitable for children with autism aged 4 until 9 years old.
- Guardian and teacher - Parents and teachers can use this app to improve the learning level of children with autism.

1.4.2 System Scope

- Through this app, it is easier to know the learning level of the child. We will use android studio to develop this app. This app is divided into 4 levels, which are level 1, level 2, level 3, and level 4. Of course, the higher the level, the more difficult it will be. Level 1 is mainly to help children learn pronunciation. Level 1 is also the simplest and most basic of all levels. Level 2 is for children to learn the size of English letters, level 3 is for children to recognize new words and level 4 is for children to learn to make sentences.

1.5 Project Significant

These are not just about improving children's learning, what children learn can be used in their social lives, such as their communication skills.

Improving their social skills is also a cure for autism. When children with autism's social skills are improved, they can better communicate and interact with others, so children with autism can integrate well into the lives of normal people.

Besides that, the app makes it easier for teachers at the training centre to supervise and educate children with autism. Teachers can use the app to understand their child's level of learning, so teachers can plan lessons that are right for their child.

1.6 Literature Review

Title	Proloquo2Go	Sushi Monster	Special Words	1st Aid Teaching Apps
Platform	Android	Android	Android	Android
In-App Purchases	Yes	No	No	No
Age Range	5+	9–11	3+	4 - 9
Difficult to navigate	Yes	No	No	No
Language teaching	Yes	No	Yes	Yes
Teaching matching words	No	No	Yes	Yes
Sentence teaching	Yes	No	No	Yes
Teaching "bunyi fonik"	No	No	No	Yes

1.7 Methodology

SYSTEM DEVELOPMENT METHODOLOGY

In our project, we selected the Agile Model in the Systems Development Life Cycle (SDLC) which gives a structured design from the beginning to the end of our project. Agile methodology is a practice that promotes continuous iteration of development, and it focuses on how to satisfy the users instead of emphasizing documentation and rigid procedures.

Agile methods mostly break the tasks into short sprints that take about 14 weeks to complete. It is an iterative model in which many tests are run as the project proceeds. Iteration involves planning, analysis, design, implementation, testing, and maintenance. Developers constantly seek customers' feedback and then modifications based on customers' feedback would be made to the current software. Using this methodology minimizes the overall risk that may occur during the development process.

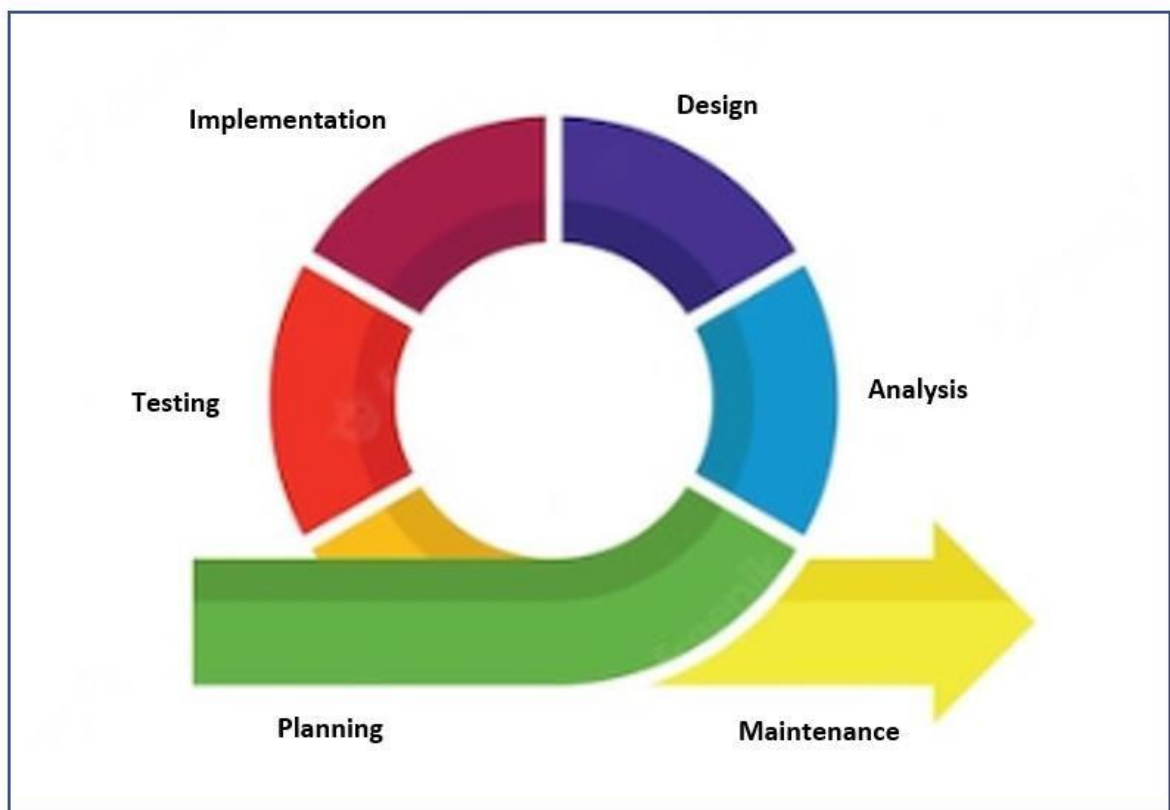


Figure 1: Agile Model

- Planning

In this phase, the meeting will be arranged with the team members. The purpose of the meeting is to discuss the idea of our project. After that, another meeting will be scheduled with the supervisor to ask for approval on the idea that is being chosen.

- Analysis

The method used in this project interviews at this phase. We will make an appointment with the owner, Ms. Roziahwati Binti Abdullah. We will interview her to learn about her problems. Then we analysis our interview questions and find objective that solve problems in our application.

- Design

At this phase, we will design our phototype by using figma. We design our app phototype according to the owner's requirements.

- Implementation

In this phase, we will start writing system code, we will use android studio for system development.

- Testing

In this phase, we will test our app. This phase aims to detect any errors that may occur or any lack of system functionality. We do Unit Test Plan (UTP), Integration Test Plan(ITP), and User Acceptance Testing(UAT) of our application. If something goes wrong, we will modify the system according to agile methods.

- Maintenance

In this phase, the system should be done without any error after testing. Then, we will deploy the system and a full report of this project will be submitted to supervisor.

1.8 Gantt Chart

No	Assignment	September			October				November				December		
		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
	Planning														
1	Identify what needs to be on the Project														
2	Identify problems														
3	Identify scop project														
	Analysis														
4	Make interview														
5	Make observations														
6	Make an analysis of the information														
	Design														
7	Sketching the interface design														
8	Identify the design														
9	Sketching a data entry design and data producer														
	Implementation														
10	Build coding to make app function														
11	Build application														
	Test														

12	- Unit Testing Plan - Integration Testing Plan - User Acceptance Testing														
13	Testing application to user														
	Maintenance														
14	Make maintenance in case of error														

2.0 Specification Requirement

2.1 Functional Requirement

- Students need to register an account before being able to log into the user account.
- Students have an account, but they can't remember their password. Therefore, they can click the Forgot Password Button.
- In Level 1 we can learning about List Of Vowel Letters.
- Quiz level will take the student to another page where the student is given option to choose a set of questions. Students can also view the score display if they finished answering the quiz.
- In this app has a phonic for students to listen to easily.

2.2 Not Functional Requirement

- Before the user accesses into the application we build, the user need to register first.
- The user name used can only be used once.
- Forgotten password verification function is built to prevent it from happening data hacking.

2.3 Hardware And Software Requirements

2.3.1 Hardware

Laptop Model	ASUSX510UQR
Brand	ASUS
Memory	8GB

2.3.2 Software

Microsoft Word

- Microsoft Word is a software used to make proposals and technical reports. The advantage of using Microsoft word is that you can explain fully and neatly about our project.

Android Studio

- The chipmunk version of Android Studio supports the java language. It is used for developpe applications for android. Advantages of using Android Studio is able to save time and easy to understand.

Firestore

- Firestore is a database that stores user data.The advantage of using firestore is being able to store all data in it. It is very easy to use by developers because of the usage which is very interactive.

Figma

- Figma is a vector drawing and animation software that is available on Windows, Mac, and Linux. It has been gaining popularity lately because of its user-friendly interface and its ability to export files as PNGs, JPGs, SVGs, or GIFs.

2.4 System Configuration

We choose play store to publish our application. We check in to in the play store and download the application we built into the play store. Once done, we download the application on google play developer and finally launch the android APK. Lecturers and students at Seberang Perai Polytechnic taking the Mobile Application Development course code DFP40093 can download the application that has been we finished building it in the play store.

2.5 Security Requirements/Exception Handling

Security needs are things that should be emphasized in a project application setup. This is to prevent something unwanted from happening such as user data hacking. Among the security uses we have pointed out weight is like a password forget function.

If users such as students have problems logging in to in their account because they forgot the password, they can choose to press "forgot password" button on their login page. They can change say them by putting their email, and the system will send permission to change the password in the user's email. Users need to agree first before changing the password to prevent data theft.

3.0 Final Design Results

The final design result consists of two parts namely to the design logic and physical design. Logical design describes a rough picture of the journey of our application, while the physical design explains about a comprehensive overview of each page about our application.

3.1 Logical Design

For the start of this application the user is given two options which is to register as lecturers or students. Upon completion of the user registration will go to the login according to their scope. Next to log in the lecturer if the user does not successful to log in lecturer, then it will be to the login face again for enter accurate information. If the user successfully enters the page, then the user will be able to see the user's menu. In the lecturer's user menu, There, will be notes and even upload assignments. Next, for student login if the user did not manage to log in the student, then it will be to the login face re-to enter accurate information. If the user successfully enters the page, then the user will be able to see the user's menu. In the menu the user has a note. Learning training that students can see two options that students can choose from which are quizzes and activities, background and personal lists that also have a note board and to-do list. Finally, both users i.e., lecturers and students can log out.

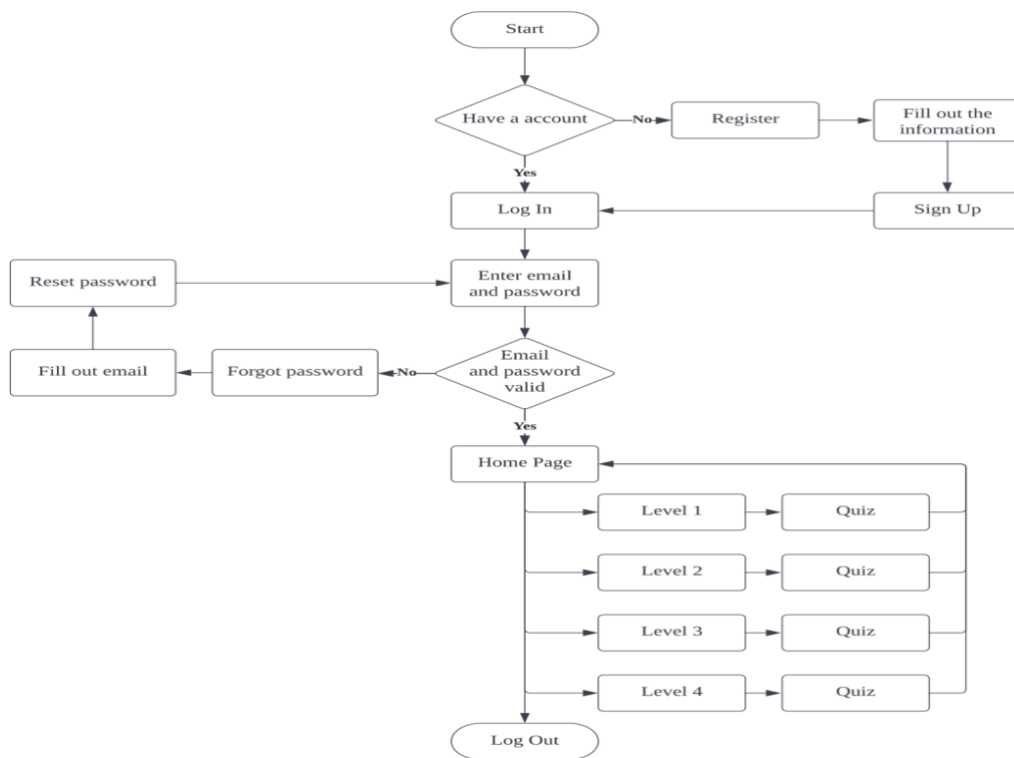

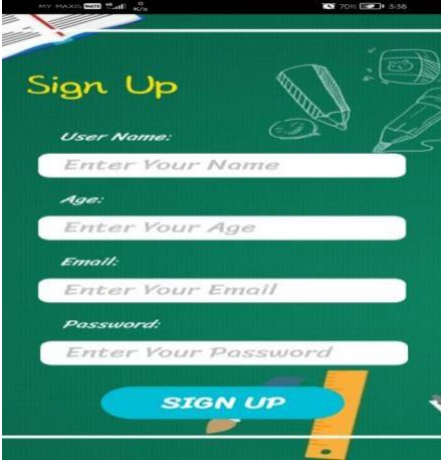


Diagram 3.1 Flowchart

3.2 Physical design

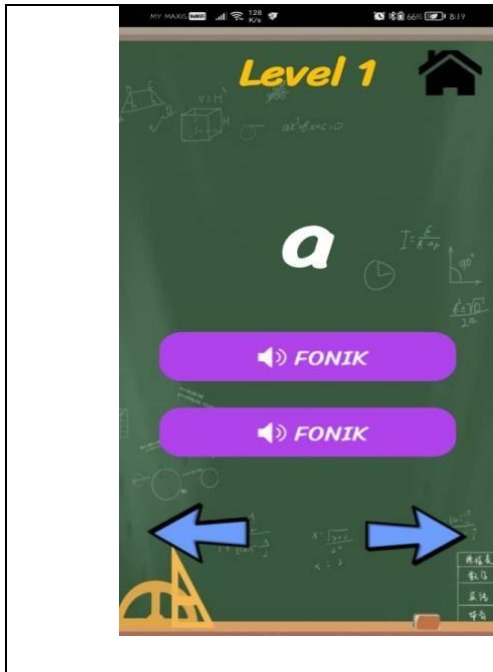
<u>Application</u>	<u>Description</u>
	<p>This is our Login Page. For those who do not have an account can register here.</p>
	<p>Then, we can see the sign up page to create a new account.</p>



I have an account, but I can't remember my password. Therefore, we can click the Forgot Password Button.



We can see Stage Of Learning after login. There have 4 levels to learning.



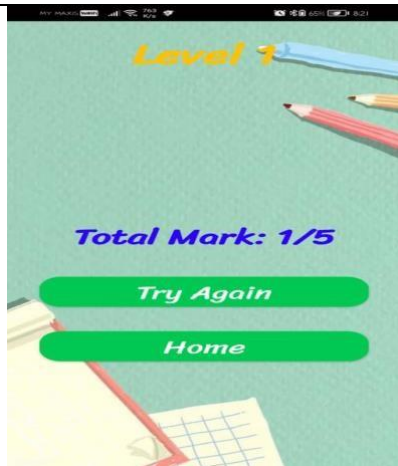
In Level 1 we can learning about List Of Vowel Letters.



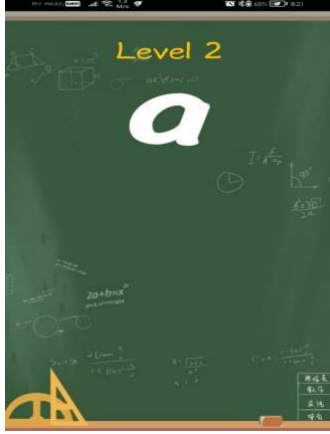
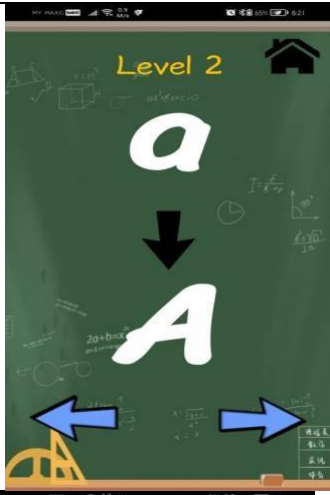
After we learn from level 1,we can continue to do quiz.



We should choose the correct answer.



Then we get the mark what we did.

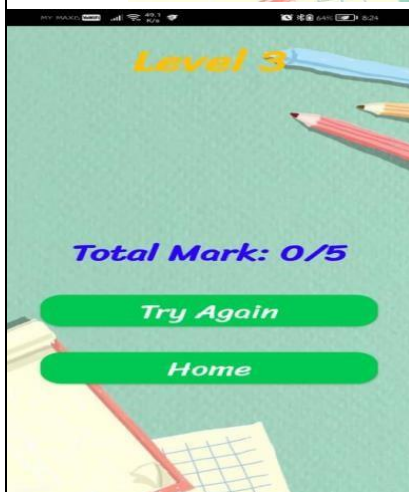
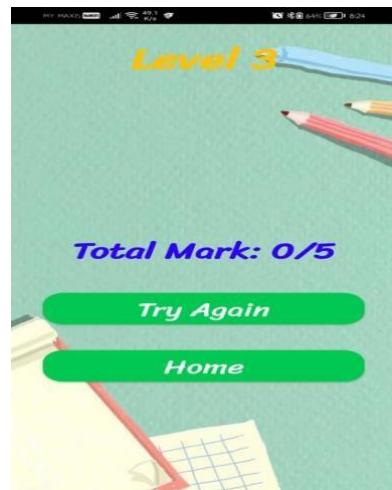


After that, we can move to Level 2. Level 2 is showing to students for choose the same alphabet to Capital Letters.



Students have to choose Correct Answer.





Then students can move to the quiz after what learned. Students have to choose the correct answer based by photo given.



For the level 4, students have to construct sentences.





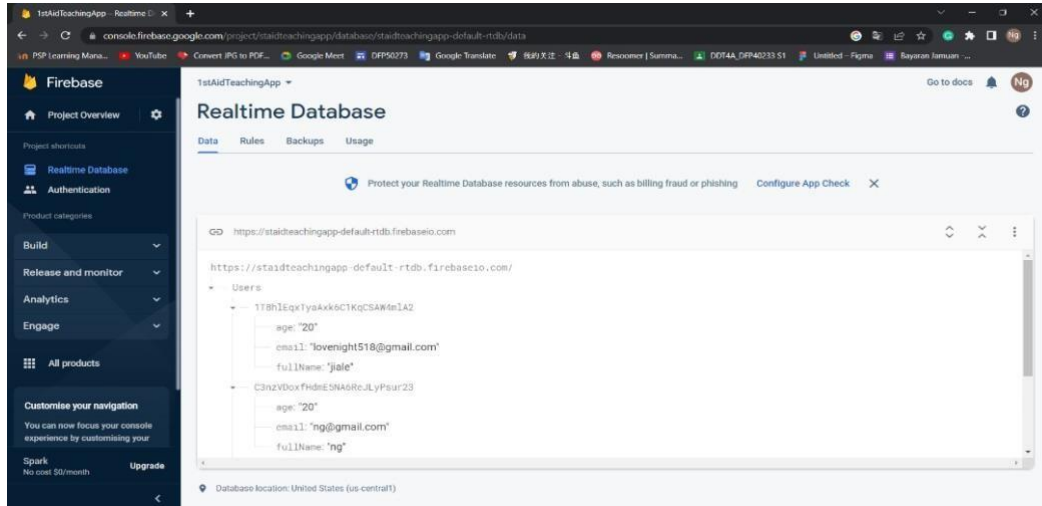
For the quiz students have to choose best answer.



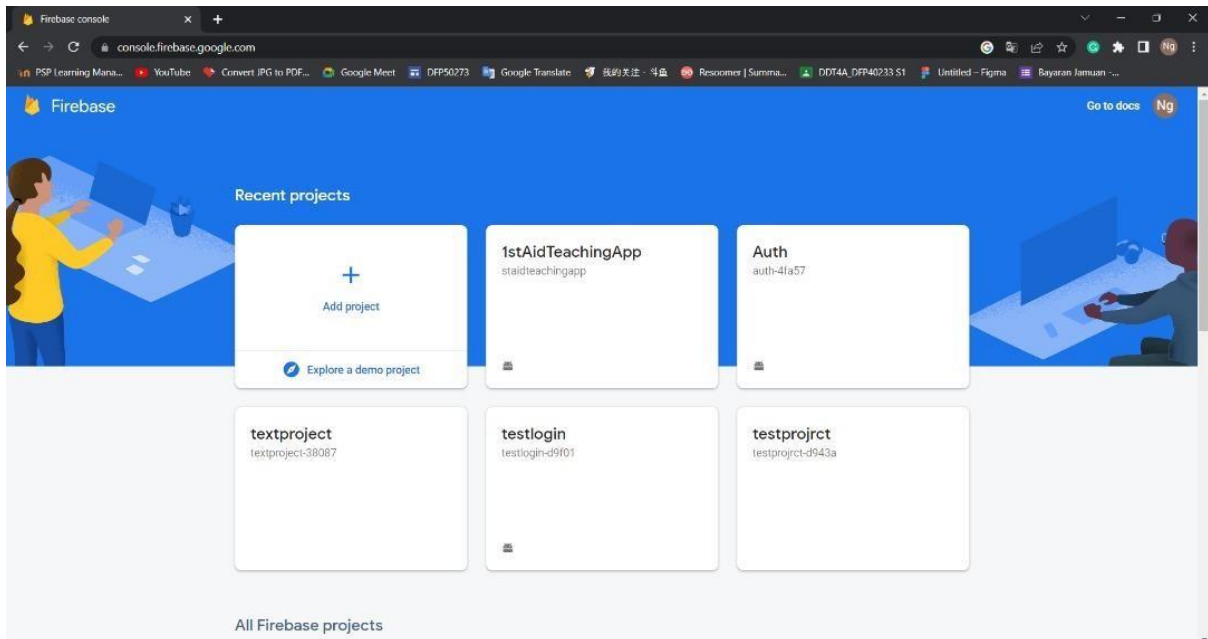
Then students will get the marks what they did in quiz.

4.4.Database Development

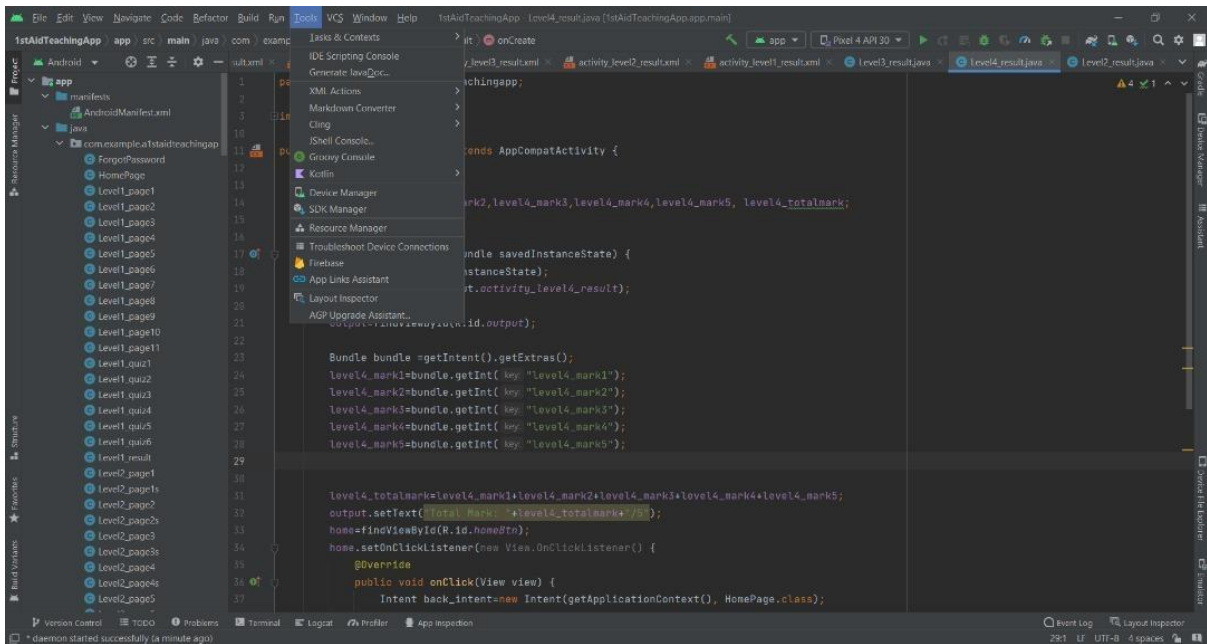
Admins use Firebase to store the database.



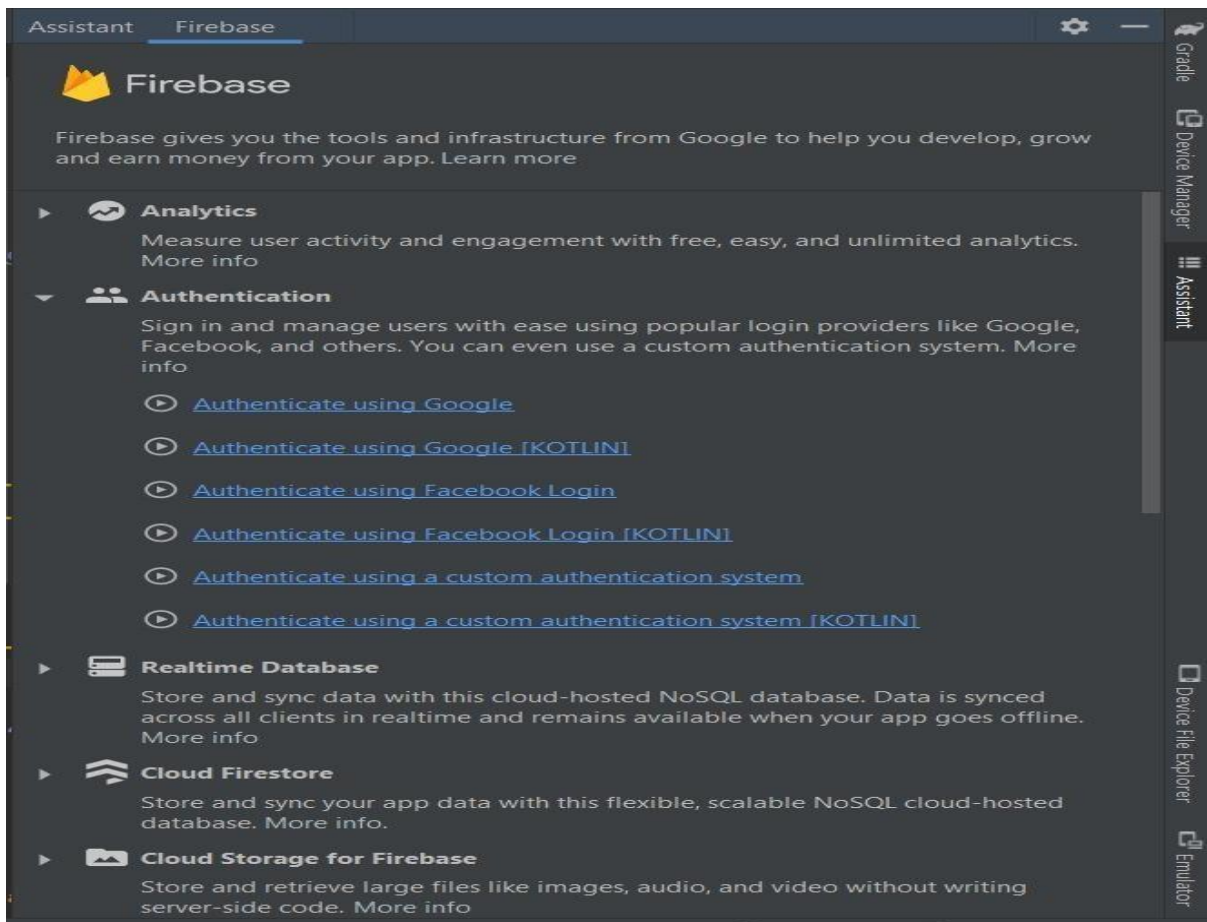
This is Our Database.



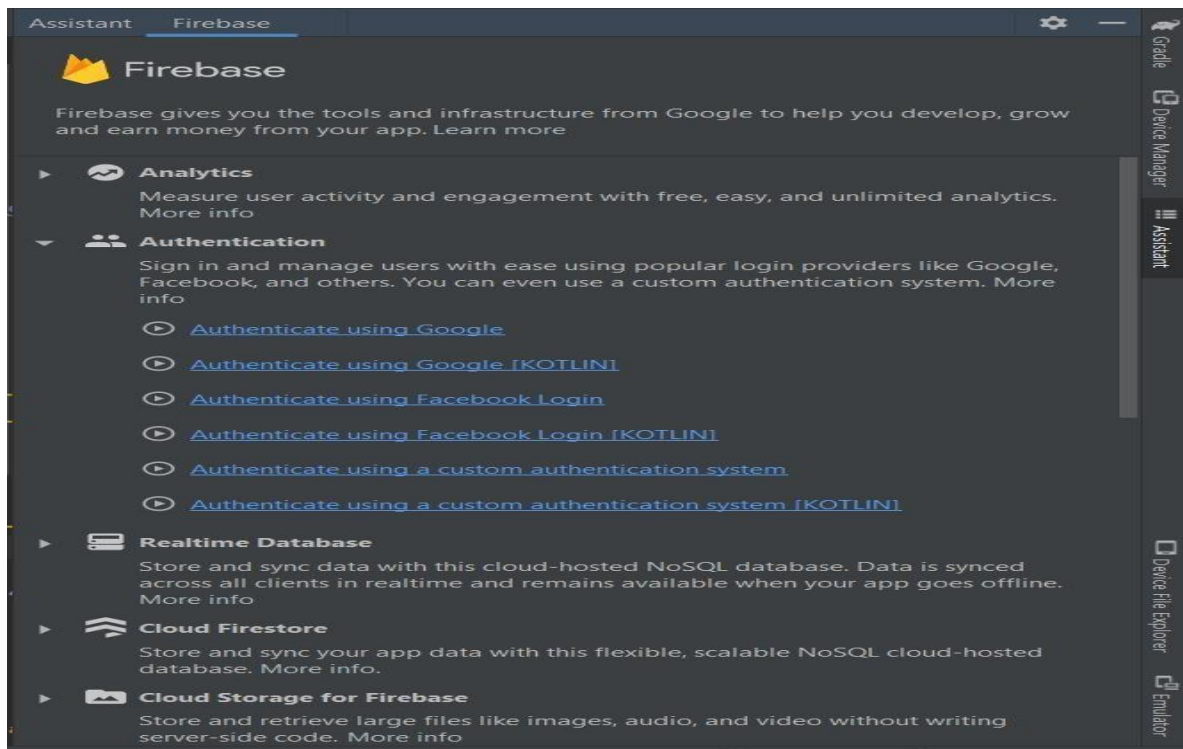
Then Click To Add Project.



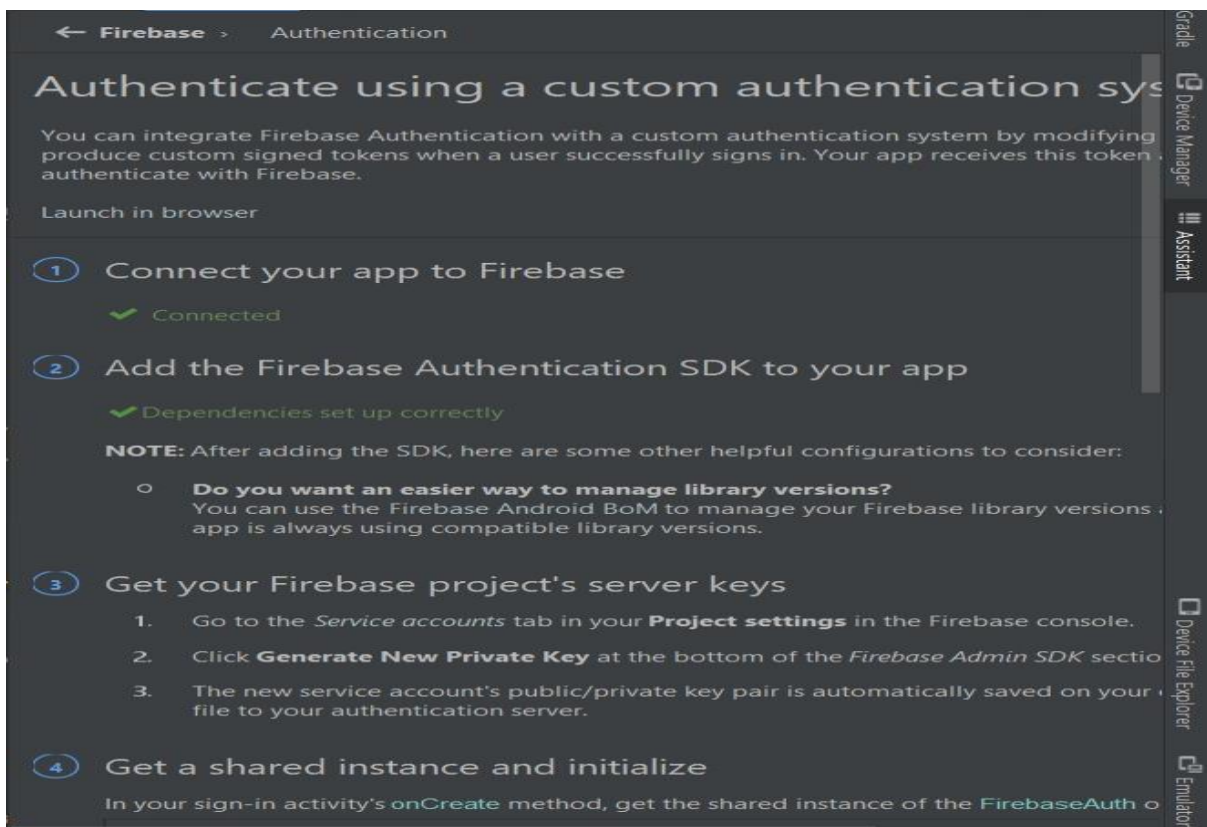
On Android We Need To Choose Firebase.



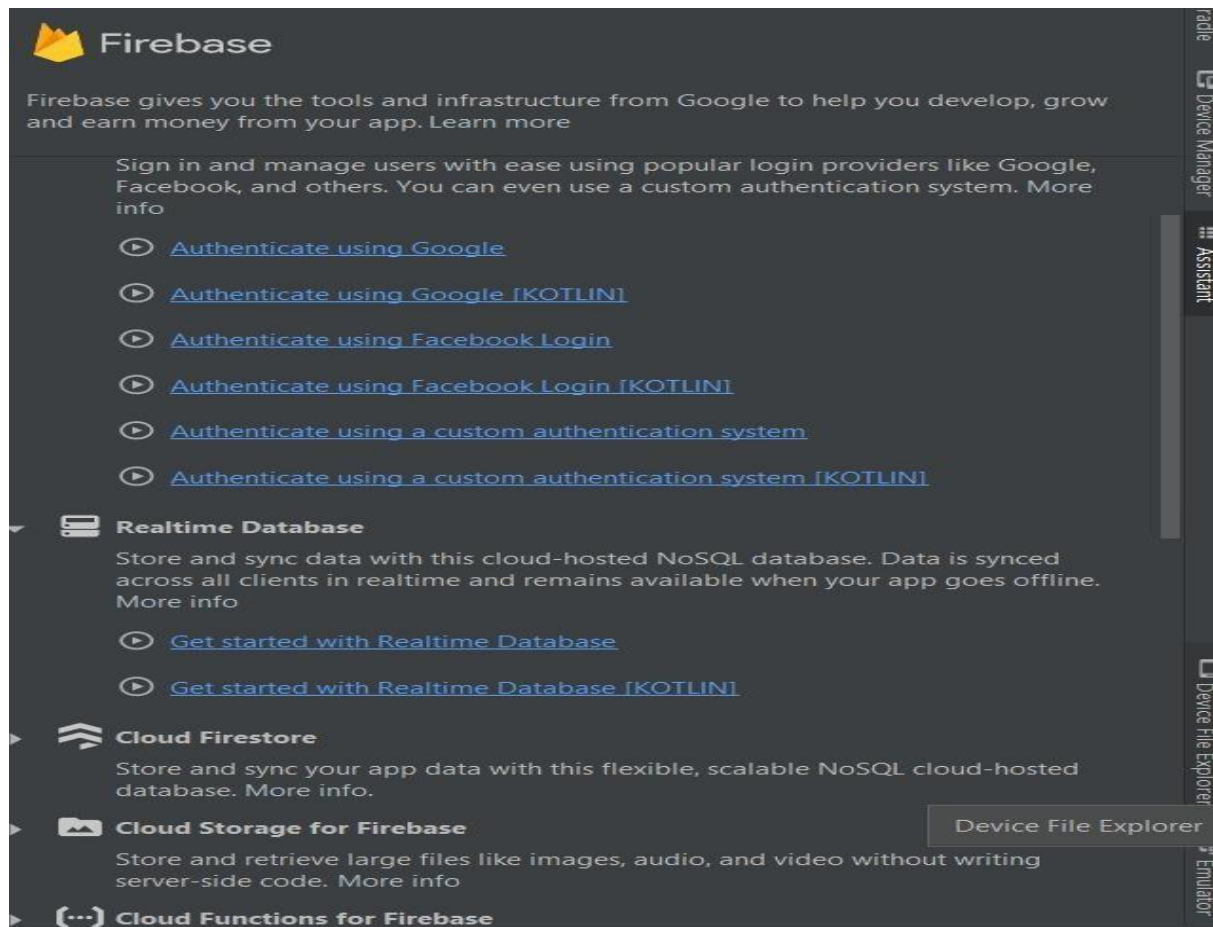
We have to Choose Authenticate.



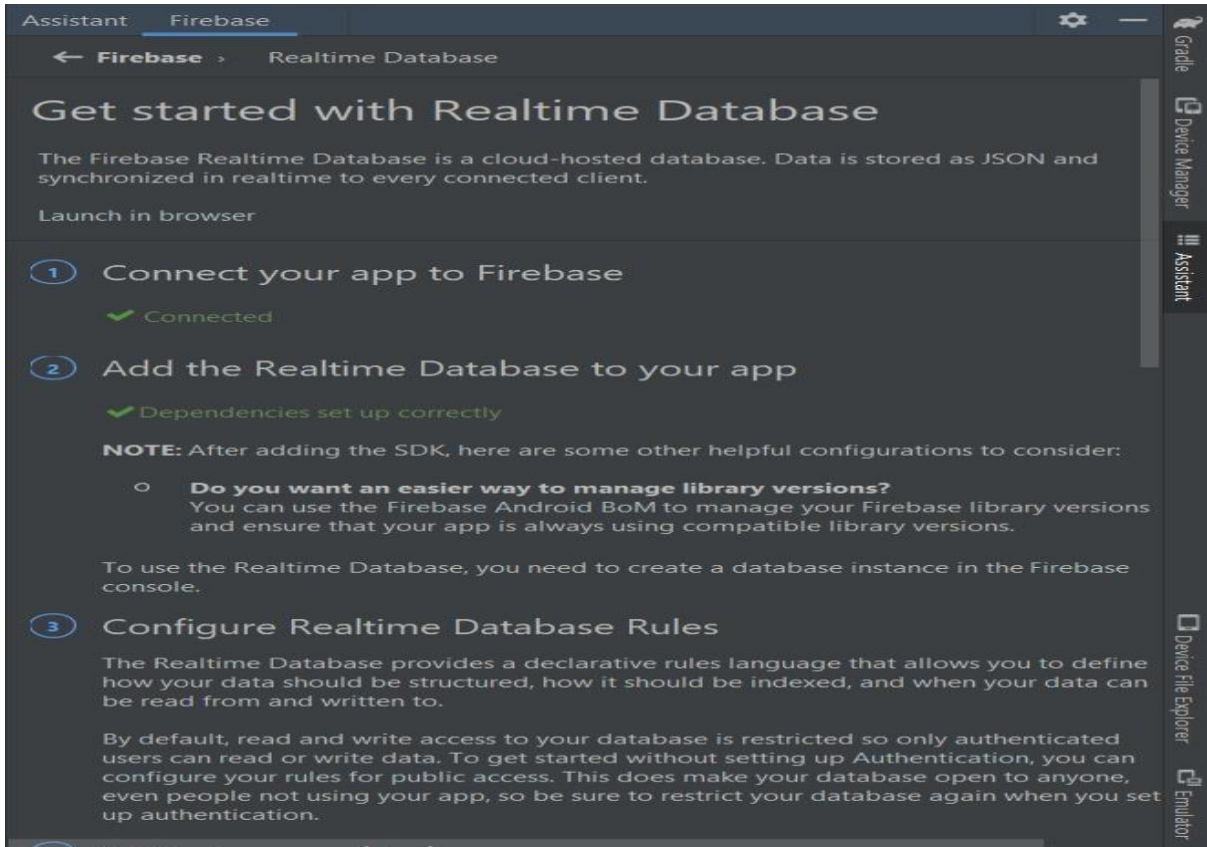
We have to choose authenticate using a custom authenticate system.



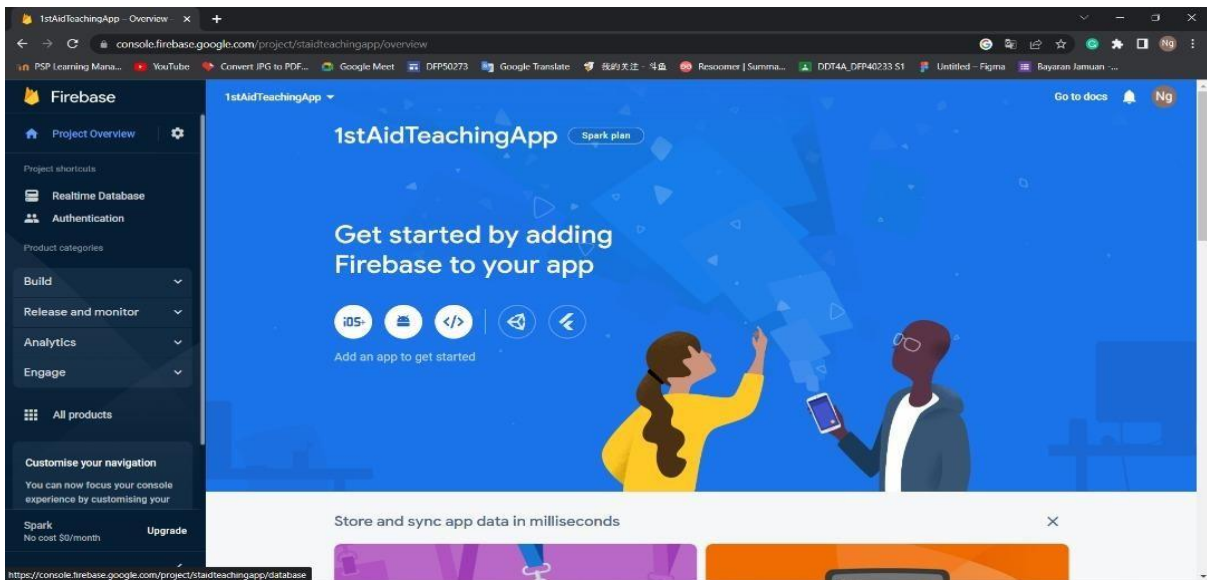
And click it to connect our app to firebase.



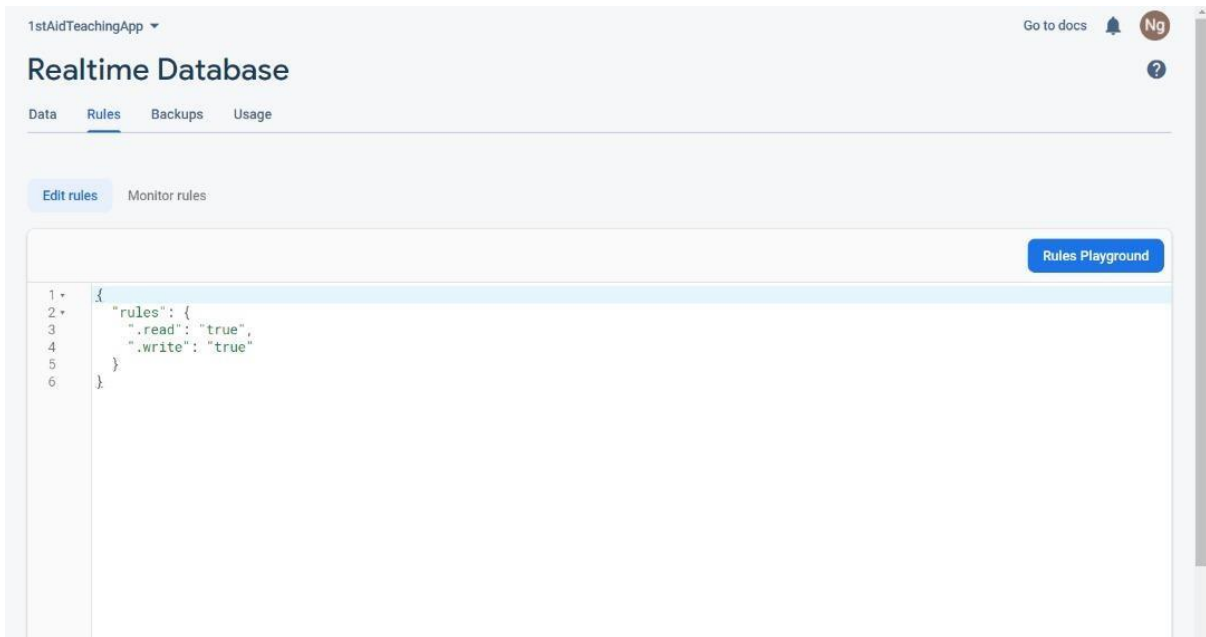
Click on realtime database and click the get started with realtime database.



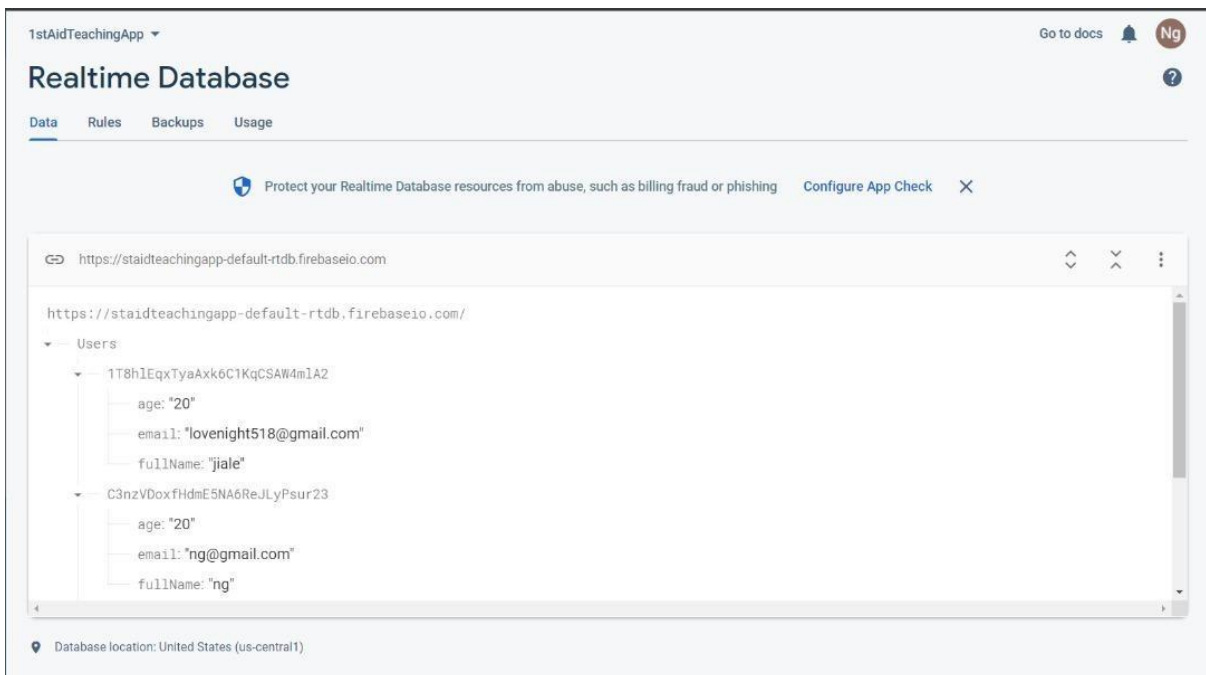
Add the realtime database to your app.



Then on firebase we have to choose realtime database.



On rule read and write change to true.



We register near the app, it will save the data near here, we can see the data near here.

3.2 Suggestion For Future Application

The Android Studio Learning application developed does not cover the whole proper functionality. Therefore, to allow this application to develop better and faster some ideas and suggestions have been made to help towards improving the development of this application. Here are some suggestions for develop our application:

- Create the ability of this application to upload additional notes for make it easier for lecturers to distribute supplementary notes to students.
- Further strengthen the login by making one user one word Users.
- Further improve menu functions and improve application interface navigation so that it is more interesting and interactive.
- Adding more graphics and educational games to this application can interest students

8.0 Reference

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<https://www.verywellmind.com/things-to-know-about-autism-in-children-5210415>

10.0 Cost Planning

For this project we had no spend any cost because we use the android studio for creating the application. Android Studio was fee of charge to download form internet.

No	Description	Price (RM)
1	Android Studio	0.0
	TOTAL:	0.0

11.0 Conclusion

In conclusion, more and more apps are being developed for children with autism, which is enough to prove that children with autism are concerned by many people, and they are all trying to control the disease. There is no way to treat this condition so far, we can control this condition through various therapies, and using application to learn is one of the good therapies.

This app is mainly developed for children with autism. In this age of technology, promoting an app is easier than traditional methods. With this app, kids can learn anytime, anywhere. Children with autism can use this app to improve their lifestyles. Although this app may not be suitable for all children with autism, as long as it can help some people, even just one person, the original intention of developing this app has been achieved.

11.0 Summary

Based on this Android Studio DFC40093Learning application, this application is specially built for android users and it is also only available on the Google Play Store. As a result, for IOS users, Microsoft and others cannot access the application this. Because we store student data in the database Firebase has a user limit. Not only that, This application requires internet to be accessed.