Introduction

Different people from different places often go for a vacation. I will be creating an application for them who travel and store their memories. I will have included everything that is required to build this app. Once, (Pinola, 2021) said, a paper notebook and pen are fine for journaling, but apps often more. They give you more context on what you've accomplished and where you might want to go. They also let you include photos from your phone or posts from your social media feeds to make the journaling experience more rewarding. Add in reminders and the ability to search your journal entries, and digital journaling is almost a no-brainer.

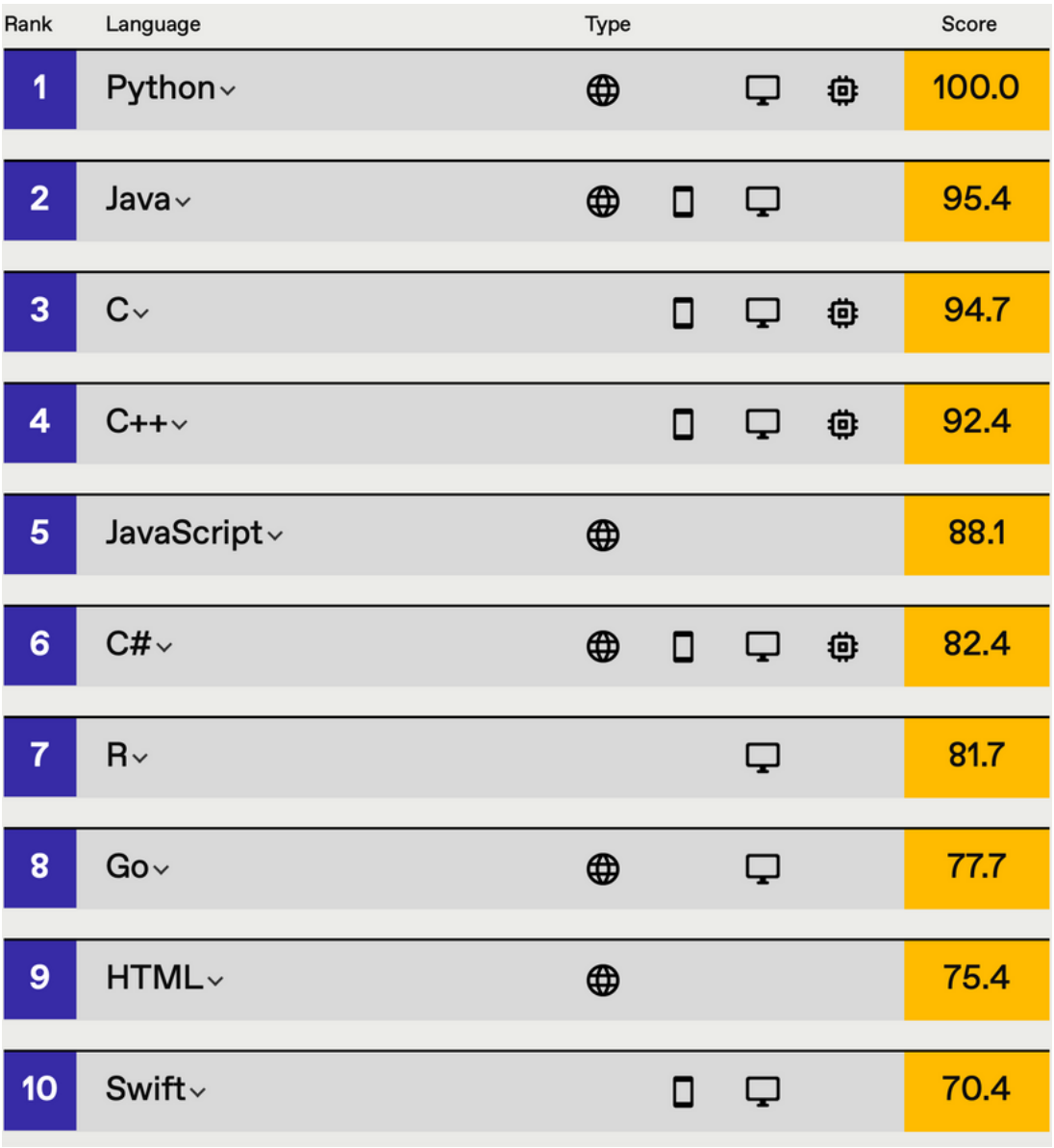
In this part, I will be talking about the analysis and evaluation that includes the various methods and approaches to native app development. Also, the brief description about designs implemented in my application. Test and test results are also shown in this report.

Mostly, I have used tables to understand the work easy and quick.

System Requirements

	Microsoft Windows	**Mac**	**Linux**
OS version	Microsoft Windows 8/10 (64-bit)	MacOS 10.14 (Mojave or higher)	Any 64-bit Linux distribution that supports Gnome, KDE, or UNITYDE; or later
RAM	8 GB or more		
Free digital storage	8 GB of available disk space minimum		
Minimum screen resolution	1280 x 800 minimum resolution		

Programming language



Rank	Language	Type	Score
1	Python		100.0
2	Java		95.4
3	C		94.7
4	C++		92.4
5	JavaScript		88.1
6	C#		82.4
7	R		81.7
8	Go		77.7
9	HTML		75.4
10	Swift		70.4

Source: https://twitter.com/kirkdborne/status/1433289189894860800

(Borne, 2021)

Here are the different programming languages which can be used for different platforms. For mobile app development there are quiet few languages such as Java, C, C++, C#, Swift and so on. Therefore, I have used java programming language for my app.

Approaches to mobile app design and development

Application development is complex. To build applications that reach all users, developers must deal with many different applications, SDKs, development tools, screen sizes and form features, and the state of the art in a constant state of flux. And if that were not enough, there are several

different ways to build a cell phone application that development teams need to address before starting any new mobile attempt. (Oladele, 2021)

	NATIVE	**HYBRID**	**WEB**
COST	Highest of all three choices	Similar to pure web costs, but extra skills required	Lowest cost due to single codebase and common skillset
CODE REUSABILITY	Code for one platform only works for that specific platform	Most hybrid tools will enable portability of a single code base	Browser combability and performance are the only concerns
DEVICE ACCESS	Platform SDK enables access to all device APIs	Many devices' APIs closed to web apps can be accessed, depending on the tool	Only a few devices APIs like geolocation can be accessed
UI CONSISTENCY	It comes with familiar, original UI components	UI frameworks can achieve a fairly native look	UI frameworks can achieve a fairly native look
DISTRIBUTION	App stores provide marketing benefits	App stores provide marketing benefits	No restrictions to launch, but there are no app store benefits
PERFORMANCE	Native code has direct access to platform functionality	For complex apps, the abstraction layers often prevent native-like performance	Performance is based on browser and network connection
MONETIZATION	More monetization opportunities, but stores take a percentage	More monetization opportunities, but stores take a percentage	No store commissions or setup cost, but there are few monetization methods.

	Rapid Mobile App Development: RMAD

COST	Little investment ratio to ROI
CODE REUSABILITY	It involves the usage of specific code-free or low-code development tools
UI CONSISTENCY	UI frameworks can achieve a fairly native look
DISTRIBUTION	App stores provide marketing benefits
PERFORMANCE	Low-code/no-code development. It cuts off the need for database coding
MONETIZATION	Less monetization

(Oladele, 2021) (Unknown, 2016)

Android, IOS and Windows Mobile development

When choosing between Android, iOS or Windows mobile development, software engineers are often puzzled. Both systems, despite having architectural similarities still have different development and maintenance approaches. (ego-cms, n.d.)

Here are some key differences between them:

	Android	**iOS**	**Windows**
Language	Java	Objective-C	C#, Visual Basic, C or C++
Development Tool	Eclipse or IntelliJ IDEA	XCode (only on MAC)	Visual Studio (Only on windows)
Application	Apk	Ipa	Cab/XAP/APPX
Development Cost	Free	Tools are free but need publisher account	Visual Studio cost
Publisher account needed?	No	Yes	No
App Publisher	Google Play, Amazon Store,	Apple Store	Windows Store

	Samsung Store, etc		
Publisher account cost	25$ onetime payment for Google Play	$99 per year	$19 per year
Verification process	When app goes to trending	Every time app is published or updated	Every time app is published or updated
Time taken for the app to be visible in app store after publishing	2 hours	2 weeks	2 weeks

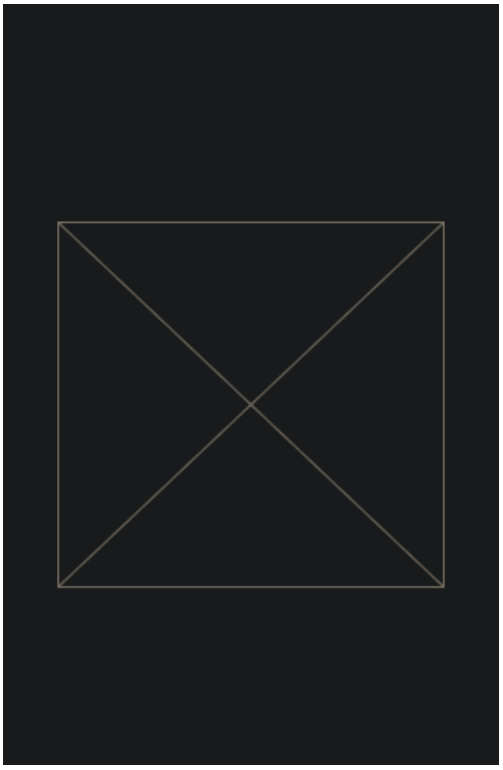
Design

Design section is the most important and interesting part of the project. As the design shows how well you managed to show the look and function of the app. User experience/interaction is the important section to look after.

Here, the wireframe design and layout details/screenshot will be given below:

1. **Splash Screen:**

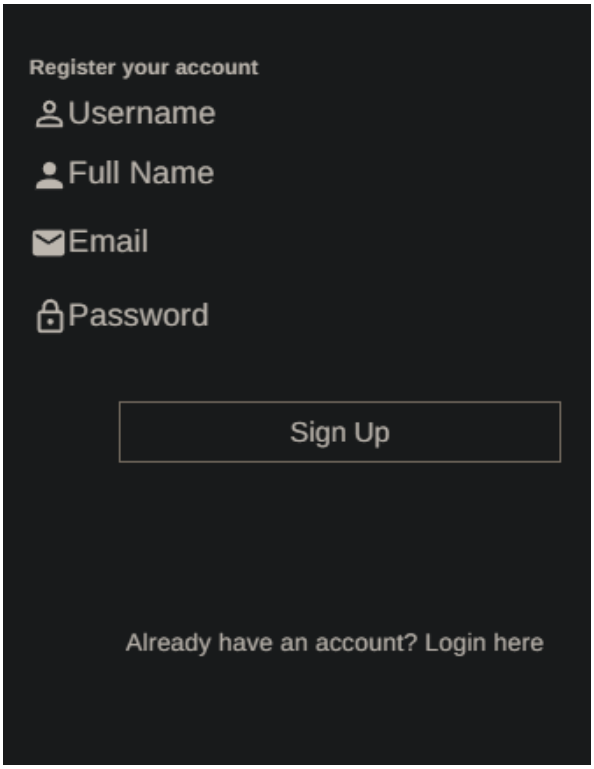
It is a screen that is visible for 2 or 3 sec.



2. **Startup page**

Choose whether to login or sign up.

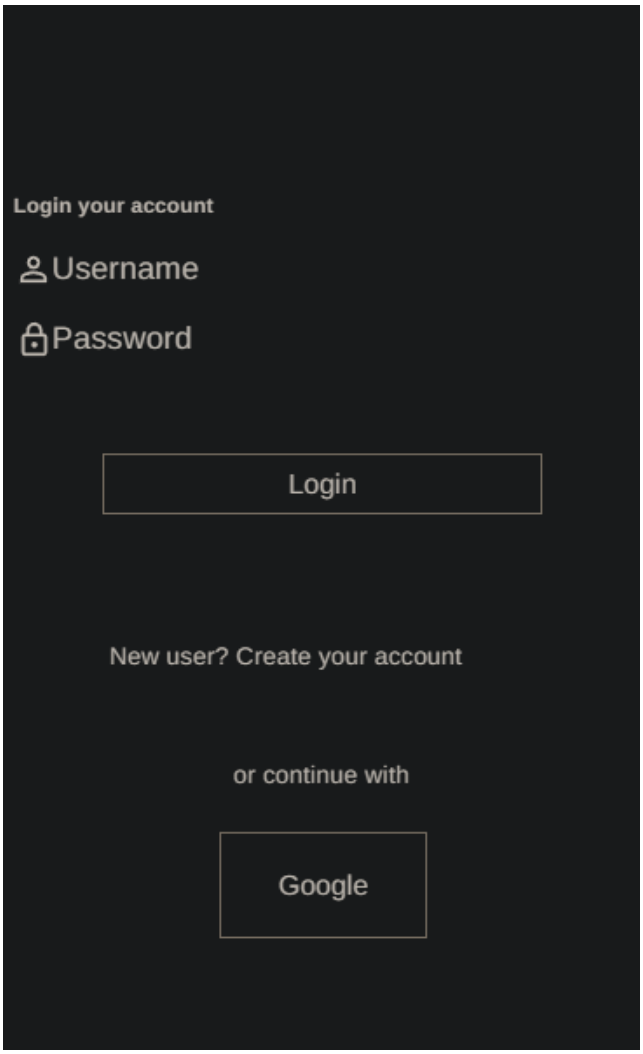
3. **Signup Page**



Sign up your account using the given details

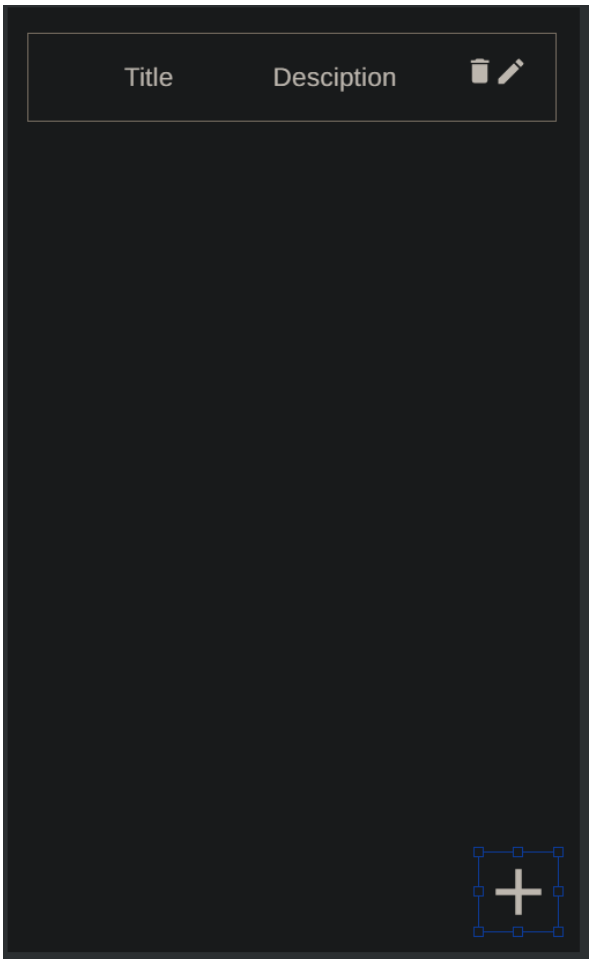
4. **Login Page**

Login In to your account using the same username and password you entered while register.



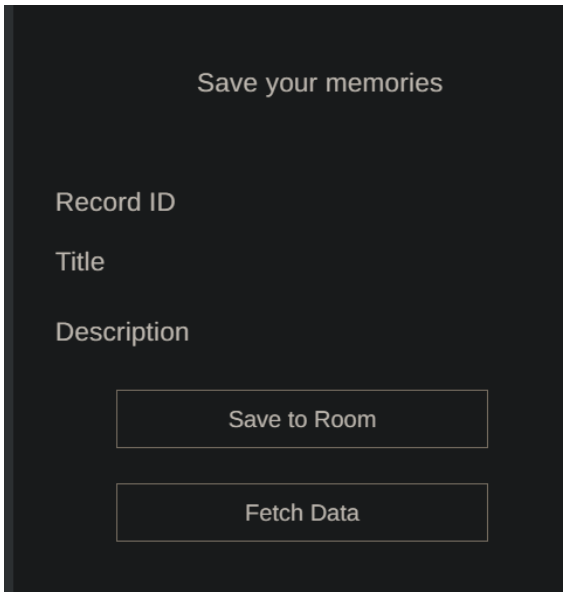
5. **Dashboard Page**

Here, the title and description are seen in the dashboard. Similarly, we can see the delete and edit icon on right side of it where we can delete and update the datas.

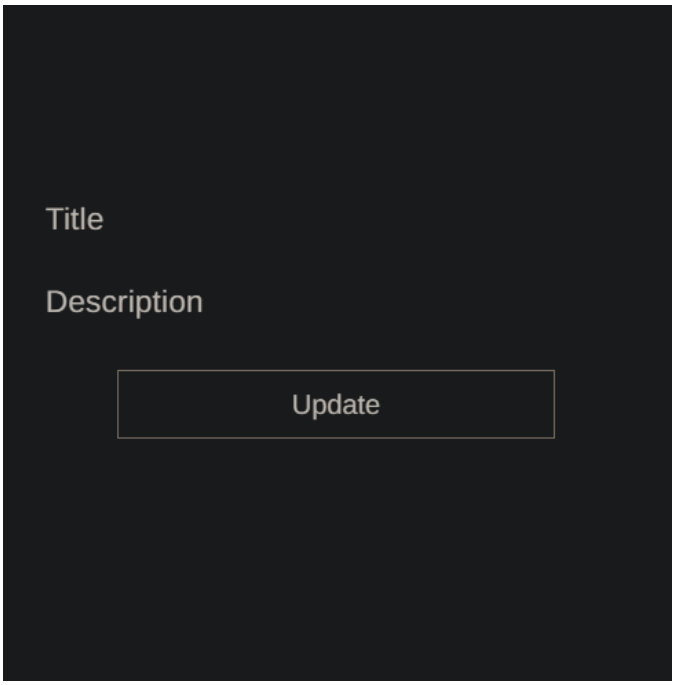


6. **Add journal page**

This is an page where you are going to add the journals.



7. **Update Page**



Functionality

Main purpose of this application is to keep your travel memories in your mobile phone forever. More people will use the app if there are many different features like adding date, time, photos, location, weather situation, etc. Login and register are there surer.

In my app, there are some of the features like login, registering new user, adding your memories into the app.

Firstly, after you open the app, you will see the splash screen which will display for 2 or 3 sec. Secondly, you will navigate to the page where you will choose to Sign Up or Login.

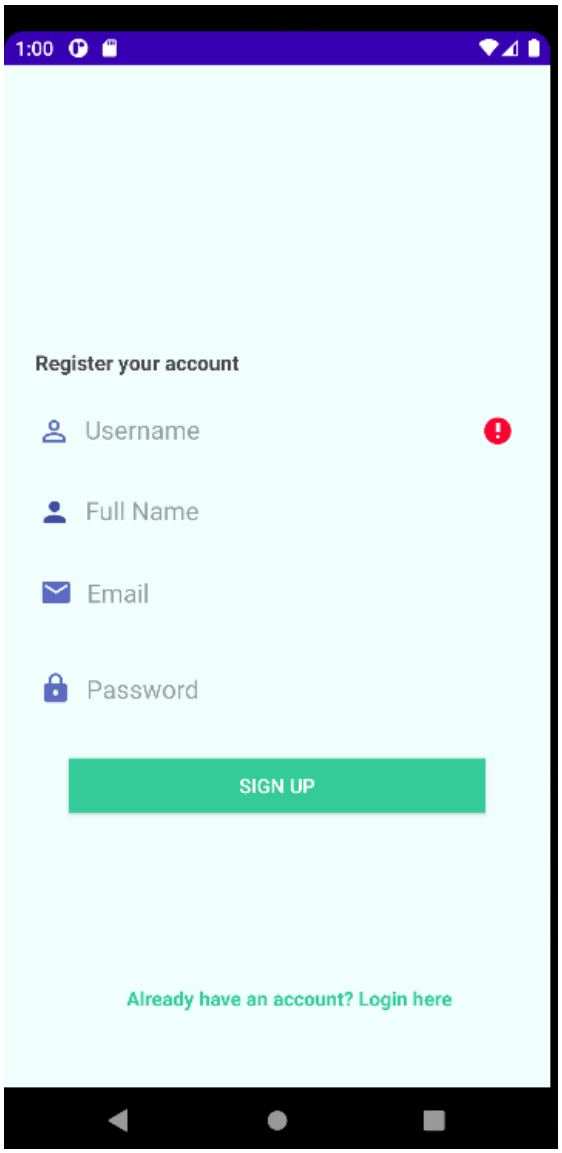
On Sign Up page, you can see four inputs, Username, Full Name, Email and Password, but you are required to input Username and Password. As, they are required to Login to your account. There are different validations on this page such as duplicate Username where the user cannot give username which is already taken by others. Similarly, if the user gives empty data, he/she will see an error message and cannot let him/her to entry.

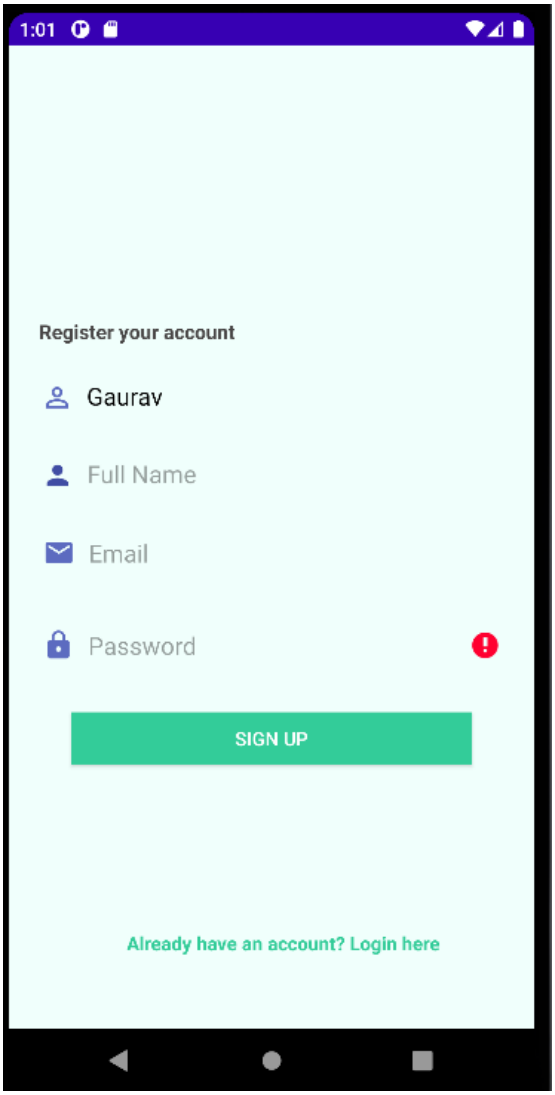
On Login page, the same username and password should be given and you can login. There is also some validation as it was in **SignUp** page. If the username or password is incorrect, app doesn't let them to enter. If the user gives empty data, he/she will see an error message and cannot let him/her to Login.

On Dashboard page, you will see all your journal data which can be edited and deleted.

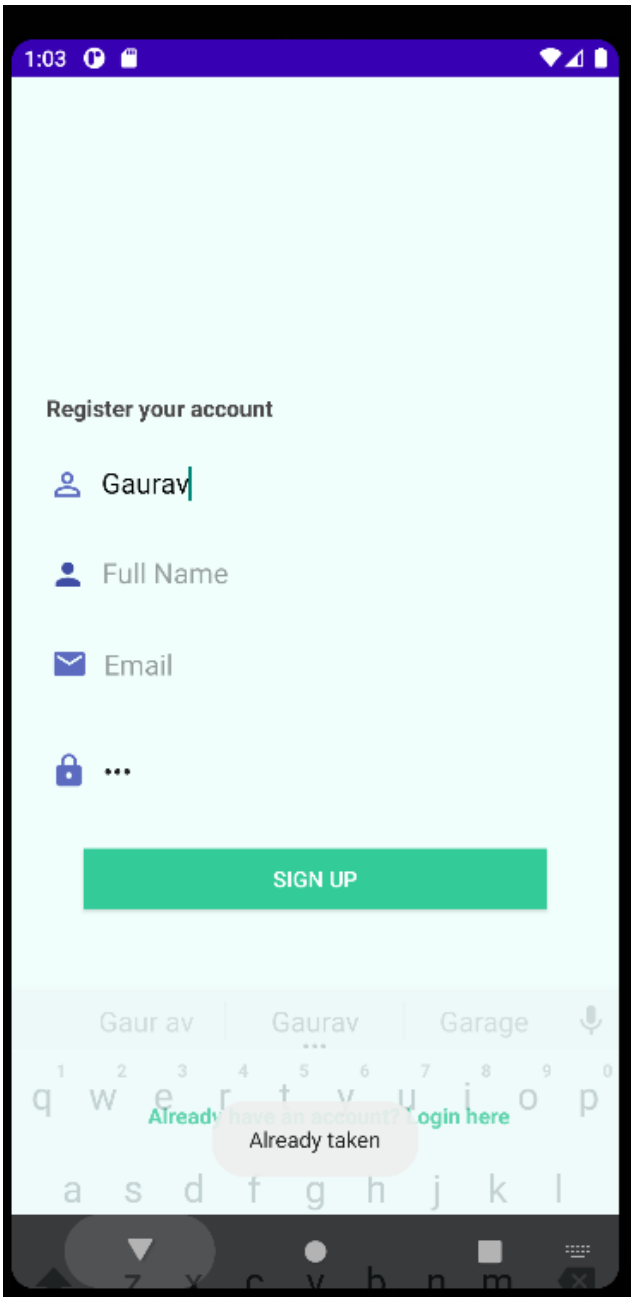
Test Strategy and Test Results

Here, I tried to register with no any inputs that are required. There is an error on right side of the Username and Password.

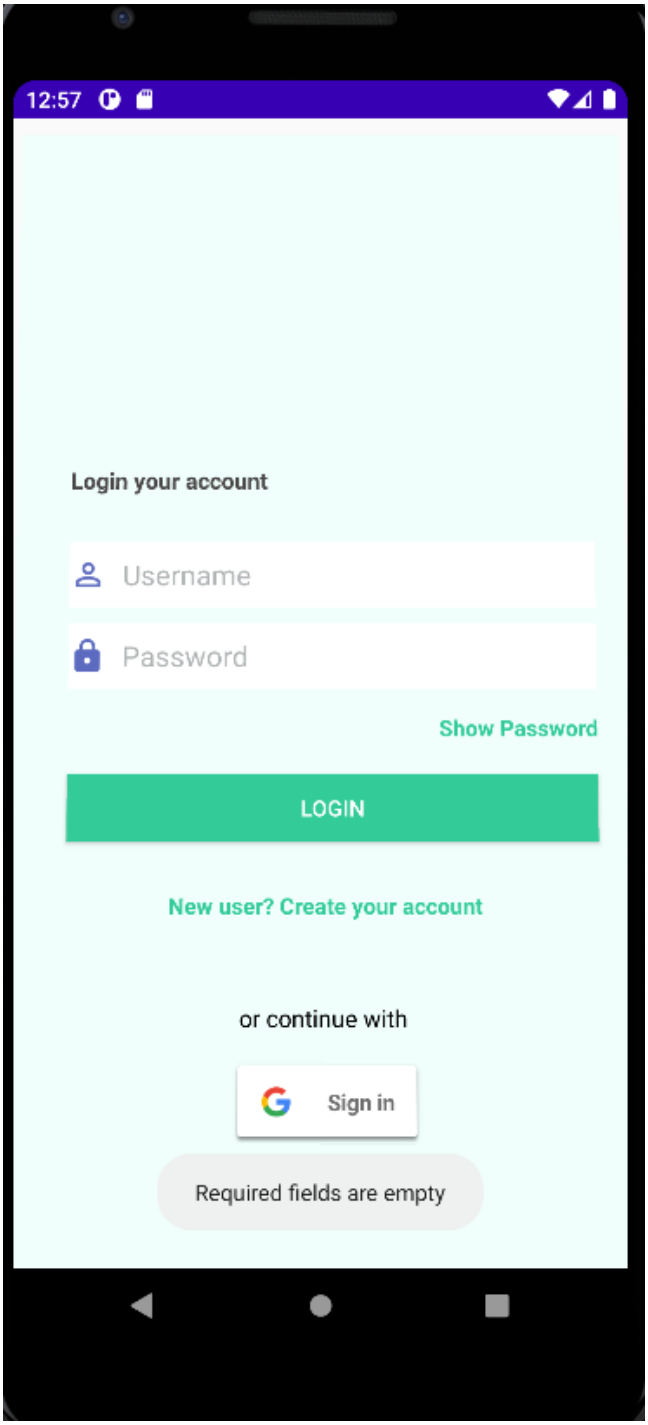




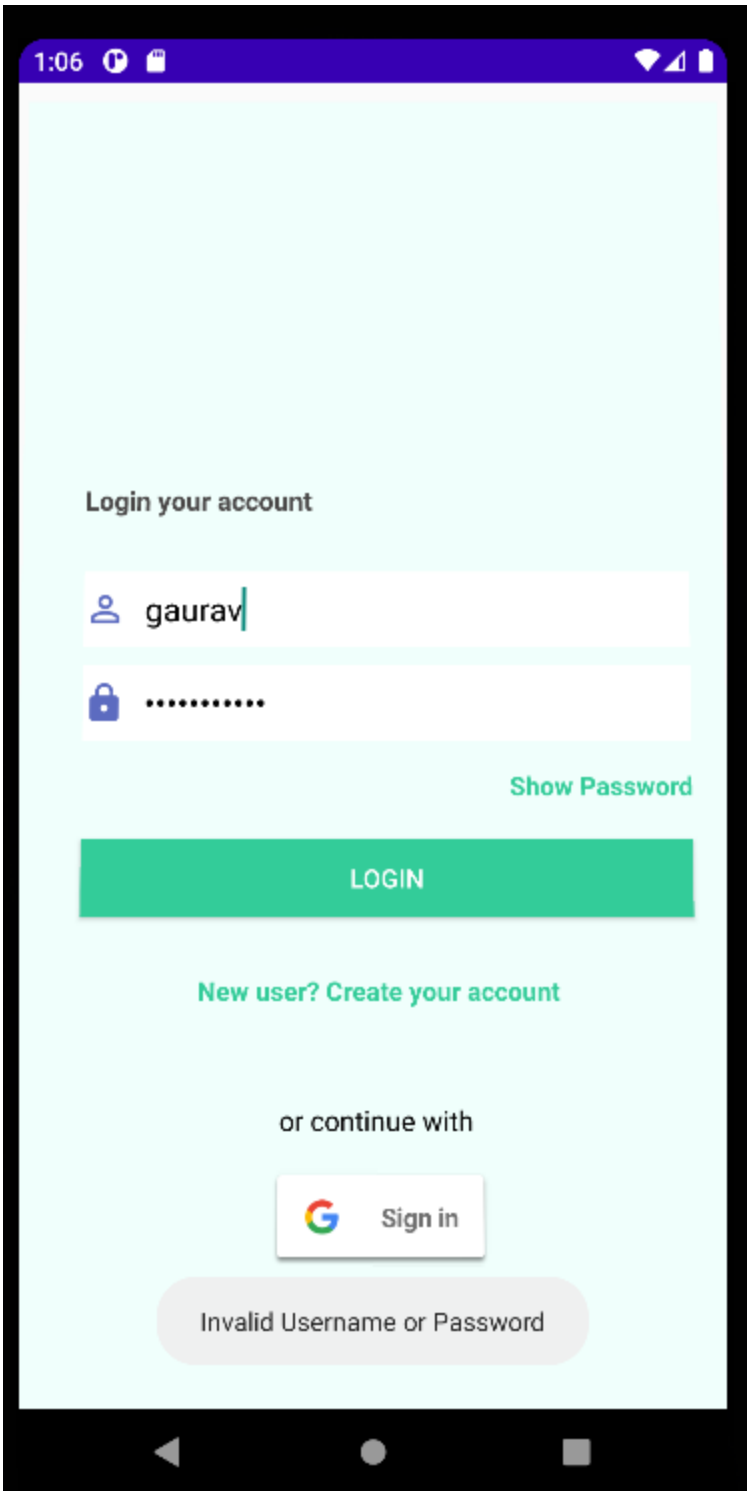
In the following photo, you can see the pop-up message “Already taken”, it is because I have already created one account called ‘Gaurav’. It won’t let me to enter same username.



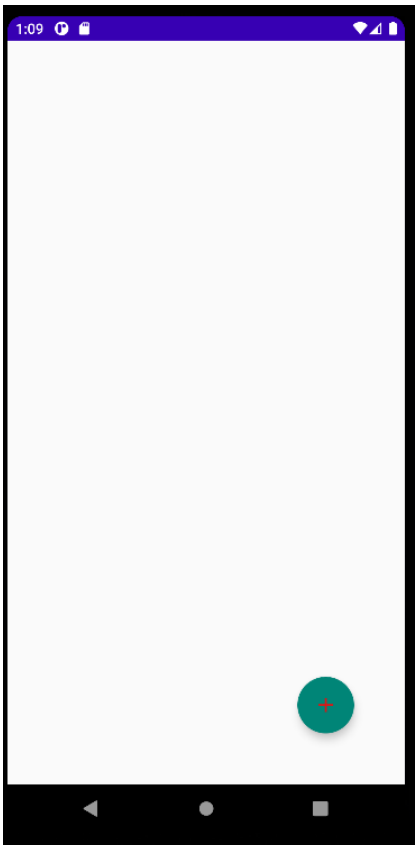
Here, I Login without entering the required data and popup message occurred saying:



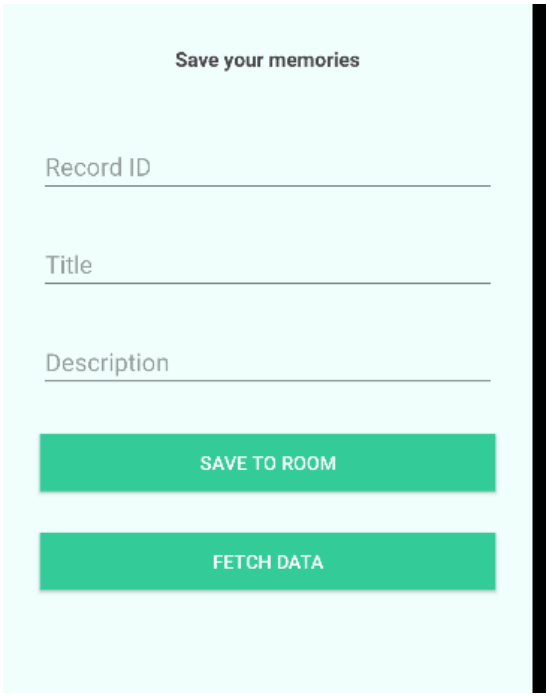
In the picture given below, I entered a random password and the app says “Invalid Username or password” and wont let me to login.



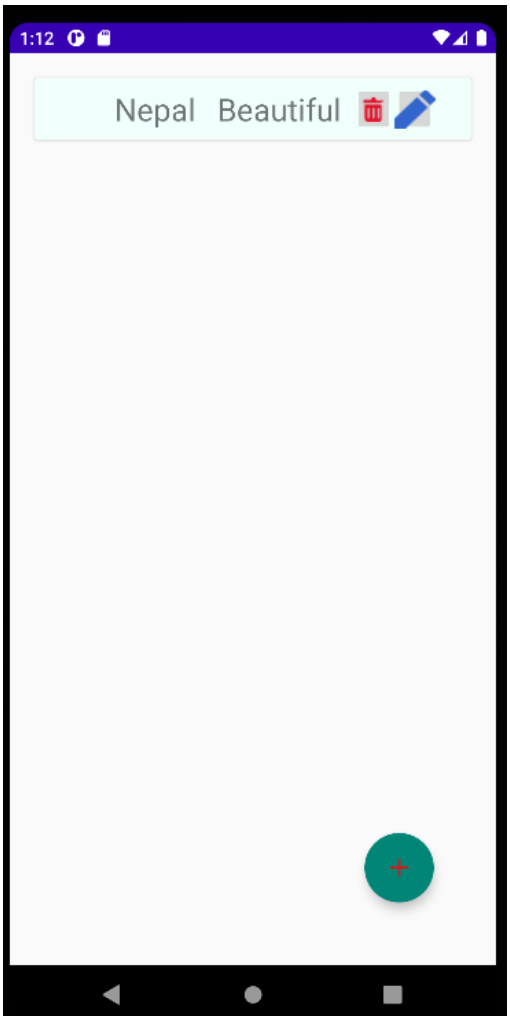
After you login with right credentials, you will the following picture given below:



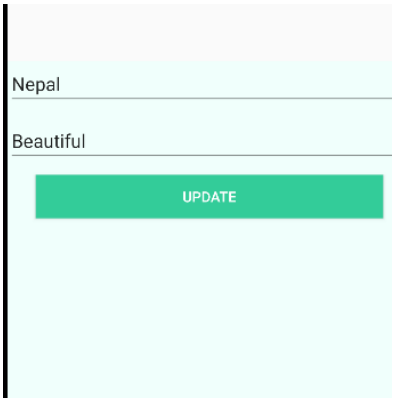
When you click the '+' icon you will navigate to the entry page where you can enter the journal data as shown in following picture:



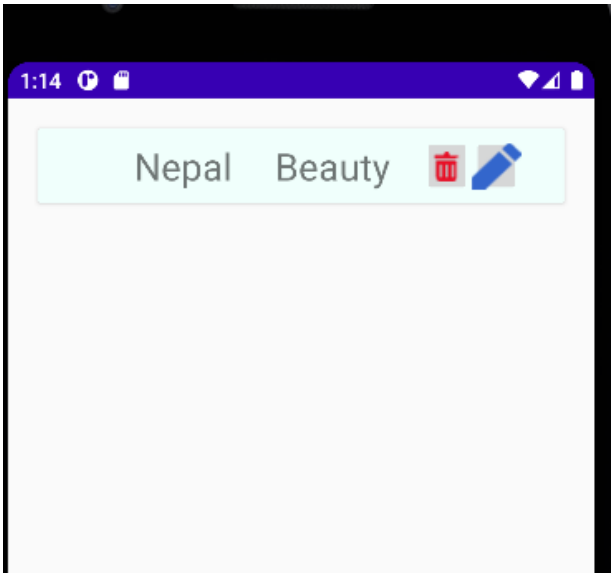
When you provide the information, your data will be saved and you can fetch data to see the dashboard again. You can see the saved data as give below.



When you click the update or pencil icon, you can see the update page and edit your information.



Data updated in the dashboard.



Lastly, when you press the delete icon, the respective data is deleted.