

Milestone 3

CP2106

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Proposed Level of Achievement:

Apollo 11

Motivation

As a skincare enthusiast I have always faced a problem with using a product only to realise it is **incompatible** with my skin type or with some of the products I am currently using. There are many instances where certain chemicals in the ingredients clash with others which can cause side effects like skin irritation. It has reached a point where I can only trust a product through word-of-mouth. Only when the product has been proved to be effective and safe to use by a trusted source, then I am willing to try it.

Additionally, **terrible skin conditions and bad acne may cause some people to be unconfident and shy**. Thus we hope that youths can have **better access to skin care information to learn essential information** on how to protect their skin.

I have asked many around me if this has been an issue everyone is facing or has experienced. This then motivated me to create a **common platform for many skincare enthusiasts** like myself to **find information which can be hard to attain elsewhere**, and to discuss the suitability of common product combinations.

Aim

Our goal for this project is to **promote information sharing between skincare enthusiasts**. It is our wish that **more information is readily available** for people interested in this topic. Enabling the public to **make a more informed decision** when using new facial products. Therefore, we propose this application to assist people in achieving the **best personalized skincare routine** for themselves.

User Stories

Must have features

- As a well-groomed person, I can utilise the application to determine if my current skincare routine is effective and where are the places for improvement. With the **skincare diary**, I will be able to do this.
- As someone who is conflicted about whether to purchase that skincare product or not, I can use the application to discuss with other skincare enthusiasts about the product before making up my mind. Using the **forum**, I will be able to do this.
- As is the case with any application, I will want to be able to personalise my profile. I would like to be able to change my username and my profile picture to express myself to others on the application. With the **edit profile** function I can do this.

Good to have features

- As a person who is clueless about what skincare products to use, I can use the application to find out what products suit my skin by using the application's **search function** for various products and find out more details about the product's suitability.

Deployment

APK download link:

<https://drive.google.com/file/d/1P9hzkrg4-uuc8HyeywzbdbVKVEnqRyl/view?usp=sharing>

Instructions: Drag and drop APK into Android emulator / Install APK on android phone

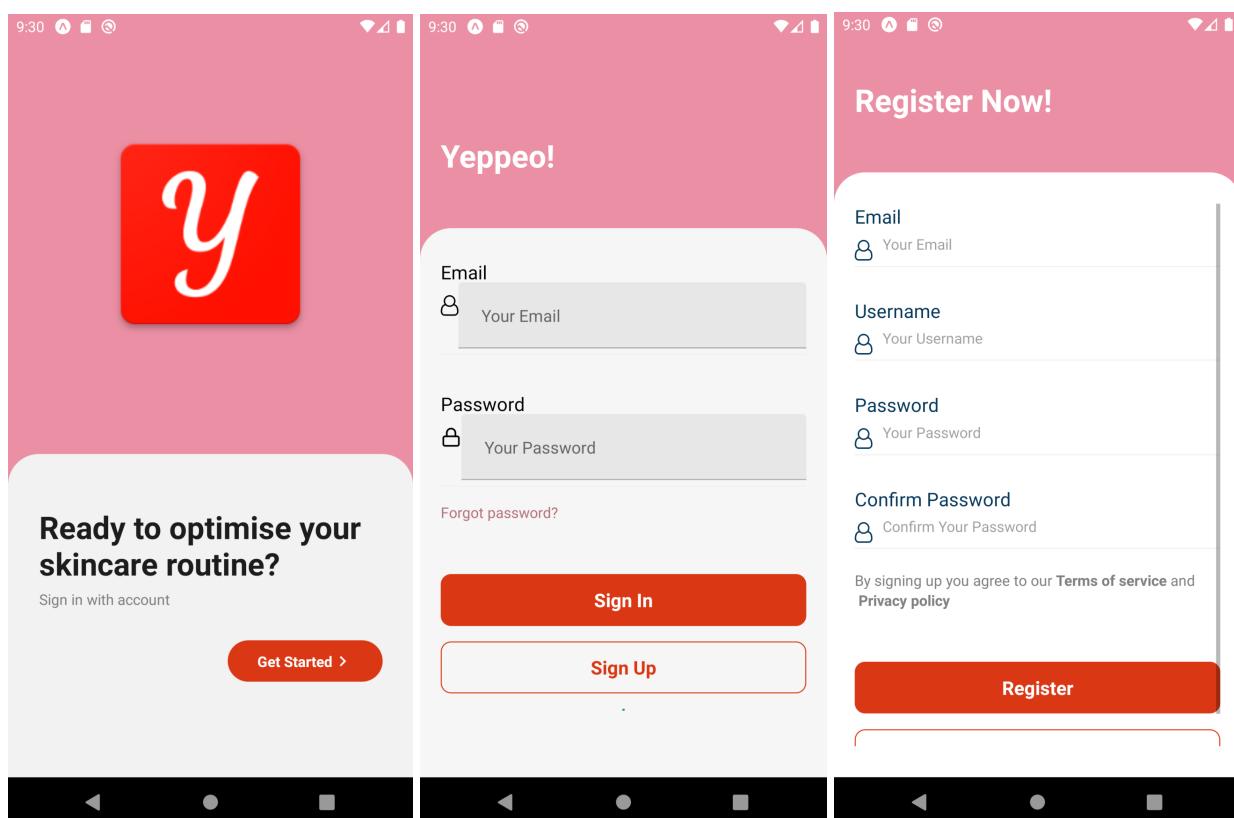
Features and Timeline

Timeline

Date	Features
31st May	Login/Registration function
28th June	Search function for skincare products <ul style="list-style-type: none"> • Create a skincare database so that users can search for the products interested Uploading/Taking of picture <ul style="list-style-type: none"> • Keep track of their skincare progress Forum <ul style="list-style-type: none"> • Users can start discussions where others can vote and comment.
26th July	Beautify the various screens Extend the Search database

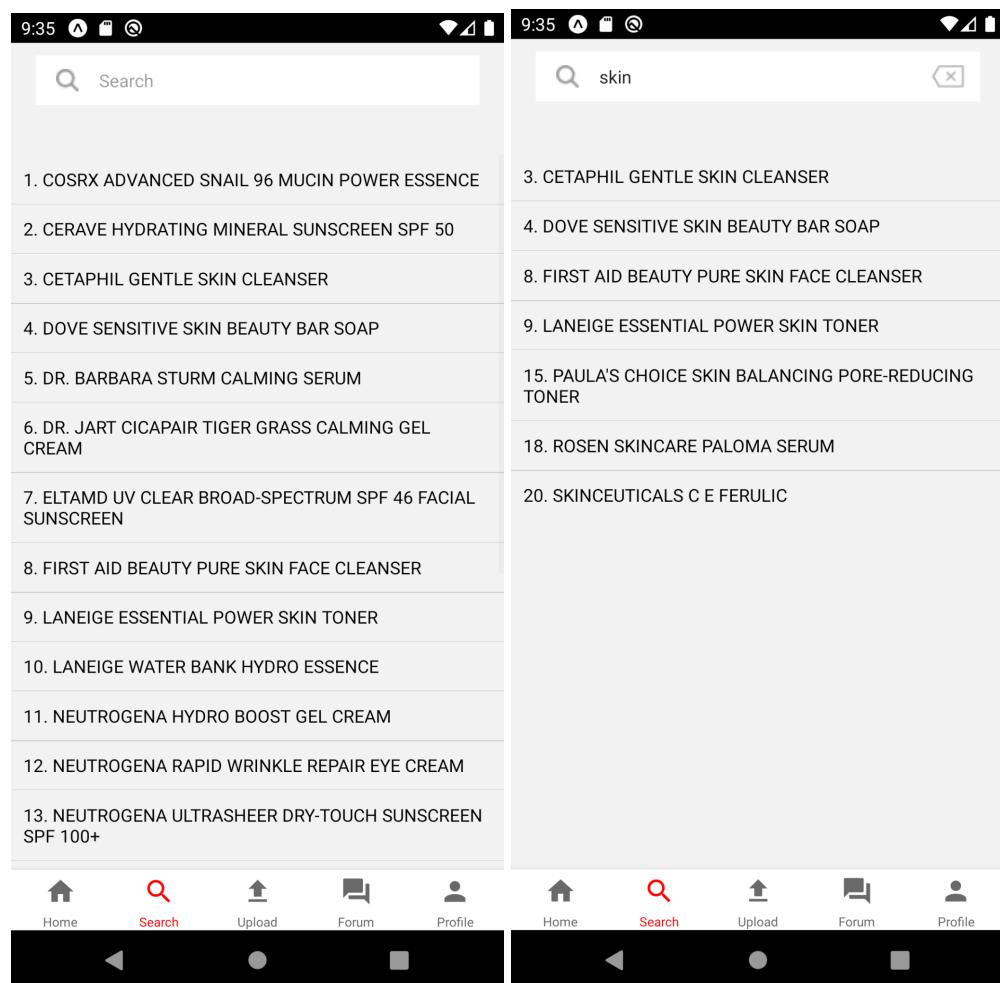
Login/Registration

- New users will be greeted with a **friendly user interface** with animations, and a colour theme specific to our mobile application. **Existing users will be able to log into the application** with their email and password. When a user registers with us, the **new user will be automatically signed in and can start using the application**.



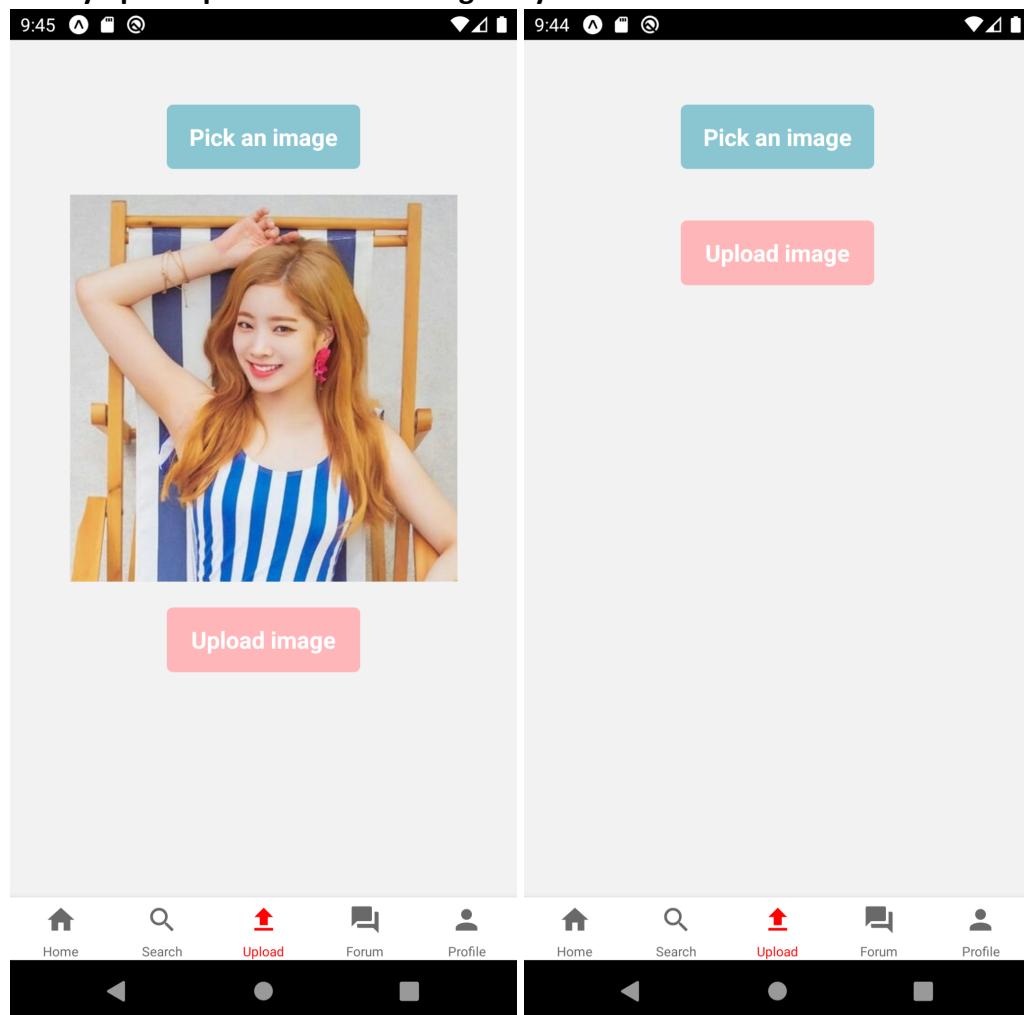
Search

- Users will be able to **search for various skincare products** which exist in the application's database.
- Proposed future changes to the database include a feature to allow **users to add products on their own**, which will be **verified by an admin before other users can view it**.
- As of milestone 3, we have only implemented a **search bar and created a small database of facial products in our backend**.
- Due to time constraints, we have not completed the ability for users to add their own products.



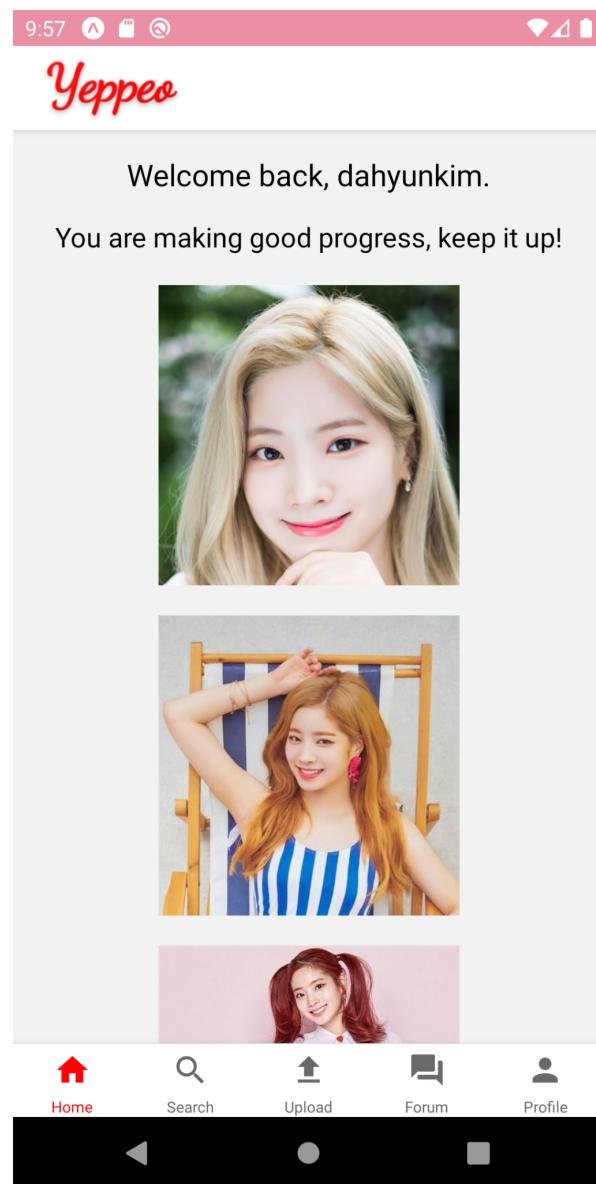
Uploading of pictures

- Users can **upload images of their face to the application** in order to **track their progress**.
- The **images will be updated in the Home page** where they can view how their skin condition has improved/worsened.
- The **pictures are accepted in any format readable by the android platform**.
- Due to time constraints, we have **not implemented the feature to delete images uploaded**.
- Furthermore, users are not able to use their camera to take a picture on the application and **can only upload pictures from their gallery**.



Home

- The home page is **designed as a picture diary** which **displays the user's pictures and is updated chronologically**.
- The **latest picture uploaded will be at the top** while the **older ones will be at the bottom**.
- This ensures that **users are able to keep track of their progress**.
- The diaries are kept linearly and scrollable so that users can see the progress of their faces.
- Due to time constraints, the timestamp feature was not implemented.

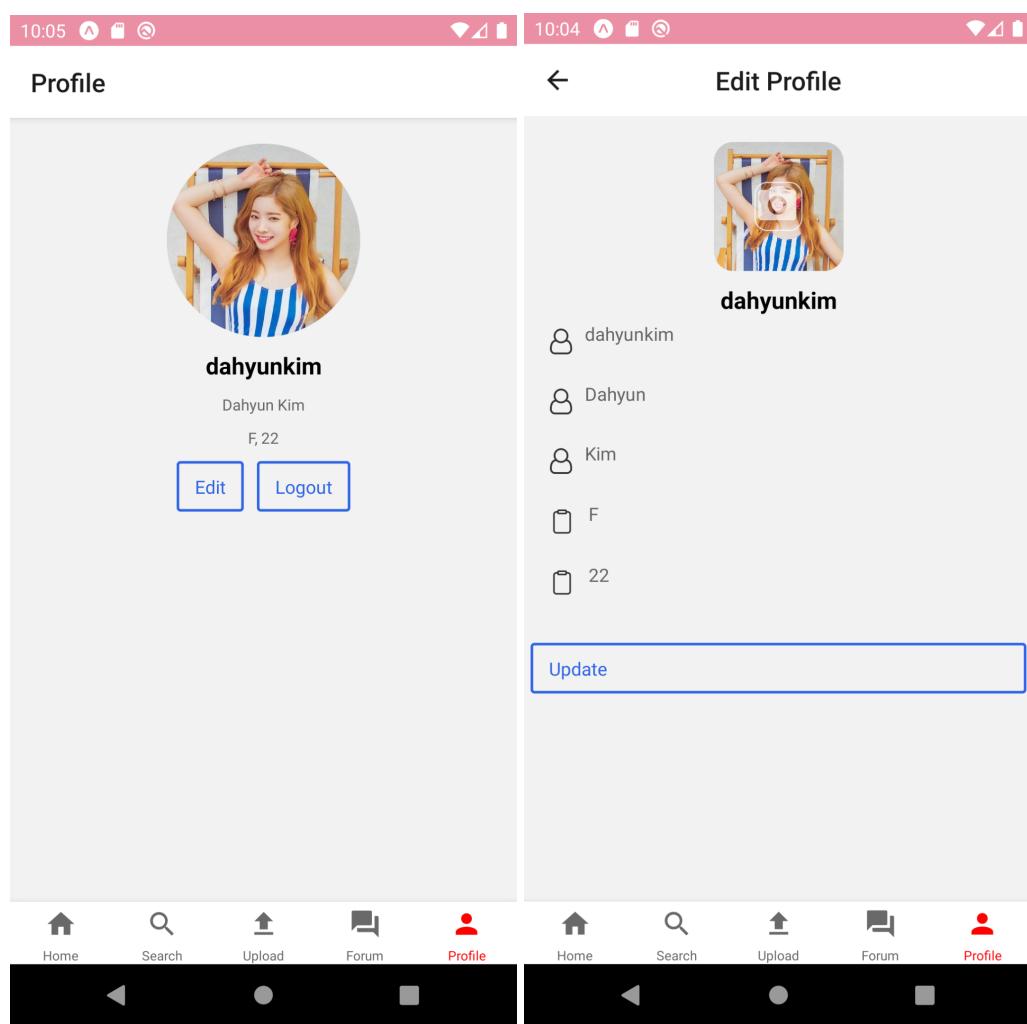


Profile page

- The profile page includes a **profile picture**, a **user bio** which includes the basic information of the user, an **edit button** and a **logout button**.
- Pressing the **logout button** will bring the user back to the **signin page** of the app.
-

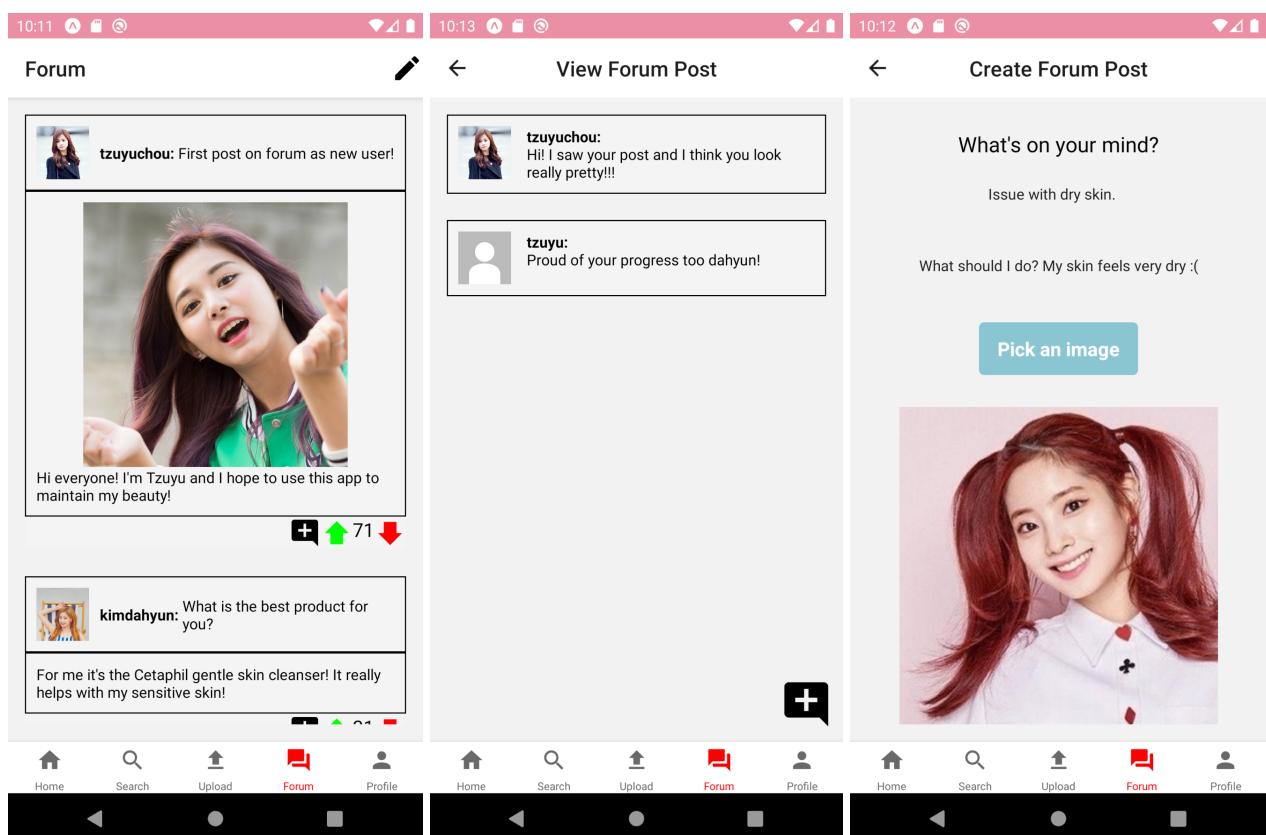
Edit profile page

- The edit profile page **allows the user to personalise their own account and how other users view them in the forum**.
- Clicking on the camera icon in the image container **allows users to upload an image for their profile picture**.



Forum

- Users can **submit a post or comment on posts made by other users.**
 - Posts can be made by **clicking on the pen icon** on the **top right of the forum screen.**
 - Posts can be expanded by **clicking on the black “+” icon** on the **left of the upvote button.**
 - Comments can be made by **clicking on the black “+” icon** on the **bottom right of a view post screen.**
- **Upvotes and downvotes will be tracked.**
- Currently, the **posts are filtered by the most recent at the top.** We plan to include filter posts options in the future.
- While making a post to the forum, **users can also upload an image** of their choice.
- With the ability to leave comments on forum posts, **professionals who use the application can assist users.**



Limitations faced

1. An extremely long time is needed for users to make a post on the forum

Upon submitting a post to the forum, the application will freeze as the data is being uploaded to Firestore. This degrades user experience as users would be left waiting for an extended period of time before they can continue using the application.

2. Time taken for the application to load a downvote or upvote is too long

Similar to the above, when a user upvotes/downvotes a post in the forum, the application will freeze.

3. Forum profile pictures and usernames are not dynamic

If a user changes their profile picture and username, the forum does not reflect the changes.

4. Users are able to vote multiple times on a single post

Users can click the green up-arrow to upvote a post or the red down-arrow to downvote a post. However, they can do this more than once on each post.

5. Users are not able to take a picture with their camera in the Upload Image screen

Currently, users can only pick an image from their gallery/files. Hence, they would have to take a picture using their phone's camera app first, before proceeding to upload an image.

6. Limited amount of writes/reads from Firebase

Document reads 50,000 per day

Document writes 20,000 per day

As we are using the free quota of cloud firestore, we have faced some restrictions. Initially, we wanted to create a forum which would update user's changes in real-time, however, we realised that this quickly consumed the free quota that we have from cloud firestore.

Hence, we would have to replace this real-time update feature.

7. Changes made to user's profile were not updated in the profile screen

When editing a user's profile information, any new uploaded profile picture would not be reflected in the profile page.

Solutions (Completed)

1. Faster load speeds achieved for posts made to forum and for voting features

We have added a “pull-to-refresh” gesture for the Forum screen. This way, we eliminate the risk of constant refreshes lagging the user's phone and application.

2. Profile page now reflects any changes made in Edit Profile page correctly

We have redesigned the logical structure of our databases in order to make sure that any changes made by the user will be stored and updated accurately.

Solutions (Proposed)

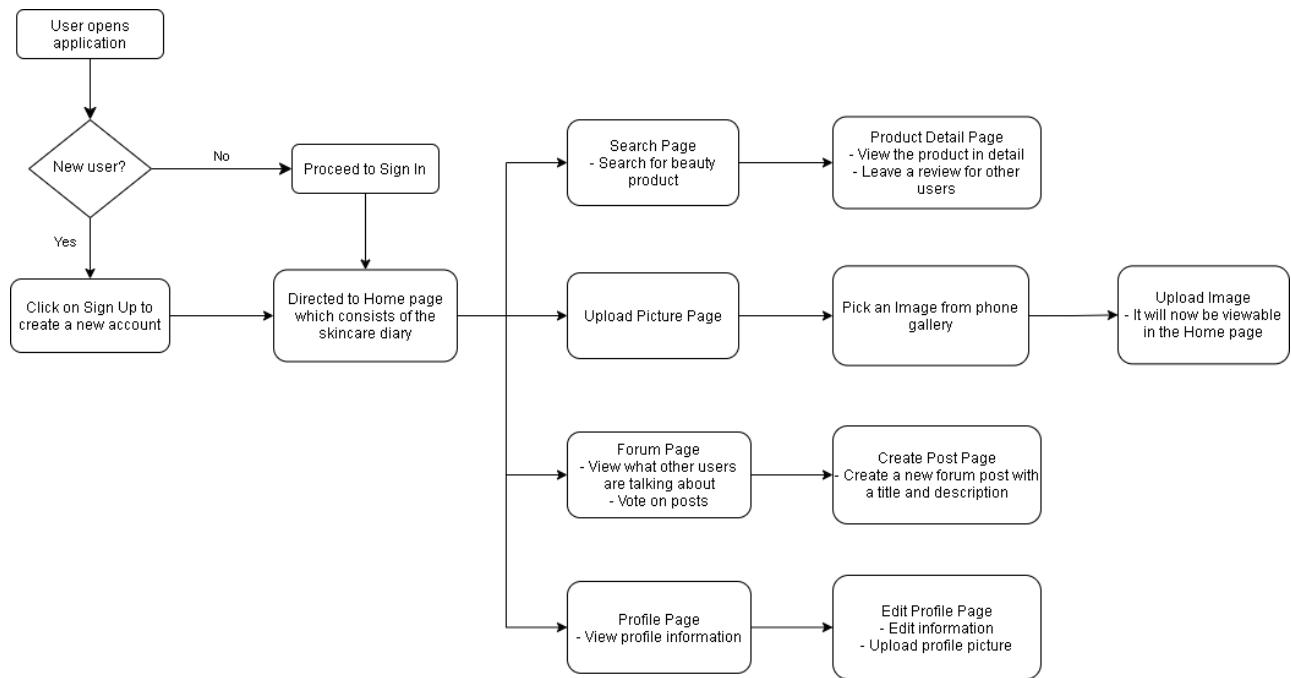
1. Add feature to open phone's camera

With this feature, user's will be able to snap a picture whilst using the application, improving user's experience as it will be more convenient to upload an image.

2. Review backend logic

In order to make the forum more dynamic, whereby user's profile pictures and usernames will be updated in real-time, we will have to

Overview of User functions



User Testing

survey link: <https://forms.gle/yfJoMqqgbJvicg6YA>

App Name: Yeppeo					
Date of Creation: 22/07/2021					
Login and Registration Features					
Test Case	Input	Expected Result	Actual Result	Verdict	Remarks(if any)
User signs up/ register with a new email that is not registered without any empty fields	Email: realemail@gmail.com Username: Testing Password: 123456 Confirm Password: 123456	Users will be directed straight to the homepage.	Users will be directed straight to the homepage.	PASS	Users will be prompted to upload his/her first image to get started!

User logins with an email that is registered	Email: realemail@gmail.com Password: 123456	Users will be directed straight to the homepage.	Users will be directed straight to the homepage.	PASS	Users will be greeted with "Welcome back, 'username'" at the homepage
Users sign up with empty fields	Email: *blank* Username: *blank* Password: *blank* Confirm Password: *blank*	Users will be prompted with an error that the email address is badly formatted.	Users will be prompted with an error that the email address is badly formatted.	PASS	
Users already have an account registered but has misclicked the register button	Users clicked register and clicked "Already have an account" button	Users will be brought back to the start screen to choose a login or register option	Users will be brought back to the start screen to choose a login or register option	PASS	
Users want to logout from the application	Users clicked the logout button from the profile page	Users will be brought back to the start screen to choose a login or register option.	Users will be brought back to the start screen to choose a login or register option.	PASS	
React Navigation Features					
Users navigate to the Home screen	Users click on Home button at the bottom of the application	Users will be directed to the Homepage of the app.	Users will be directed to the Homepage of the app.	PASS	
Users navigate to the Search screen	Users click on Search button at the bottom of the application	Users will be directed to the Search function of the app.	Users will be directed to the Search function of the app.	PASS	

Users navigate to the Upload screen	Users click on Upload button at the bottom of the application	Users will be directed to the Upload function of the app.	Users will be directed to the Upload function of the app.	PASS	
Users navigate to the Forum screen	Users click on Forum button at the bottom of the application	Users will be directed to the Forum of the app.	Users will be directed to the Forum of the app.	PASS	
Users navigate to the Profile screen	Users click on Profile button at the bottom of the application	Users will be directed to his/her Profile Page of the app.	Users will be directed to his/her Profile Page of the app.	PASS	
Users navigate to the Edit Profile screen	Users click on the Profile Page button followed by the Edit button	Users will be directed to his/her Edit Profile page	Users will be directed to his/her Edit Profile page	PASS	The edit profile page allows users to change the user information at any point
Search Function					
Users wants to search for certain product	Users click on the Search page button and inputs "NEU" in the text box	The search results will filter to the 3 "NEUTROGEN A" products from the database	The search results will filter to the 3 "NEUTROGEN A" products from the database	PASS	Filtered results will have an immediate response based on the input from the user

Users wants to search for certain product category	Users click on the Search page button and inputs "toner" in the text box	The search results will filter to the 4 "Toner" products from the database	The search results will filter to the 4 "Toner" products from the database	PASS	
Users wants to search for certain product which is not in the database	Users click on the Search page button and inputs "Clinique" in the text box	The search results will return an empty screen, showing that there is no such product in our database	The search results will return an empty screen, showing that there is no such product in our database	PASS	
Users want to see all the products that are in the database	Users click on the Search page button and scrolls through all the products that the app has in its backend	The result will show all the products' title that the application has	The result will show all the products' title that the application has	PASS	
Upload Image Function					
User wants to select an image for uploading	Users click on the Pick Image button and selects an image from their gallery	The selected image will be displayed below the Pick Image button.	The selected image will be displayed below the Pick Image button.	PASS	
User wants to upload their selected image	Users click on the Upload Image button	A progress bar will appear in place of the Upload Image button and show the user the uploading	A progress bar appears in place of the Upload Image button but does not show the user the	PARTIAL PASS	The uploading progress bar does not show the progress

		progress. Upon completion of the upload, the image will be removed from the current screen.	upload progress. Upon completion of the upload, the image is removed from the current screen.		properly, instead it jumps from 0 to 100% instantly.
User wants to upload their image by taking a picture with his/her phone	NIL	User should be able to access the phone's camera to take a picture	User does not have the option to take a picture using its phone's camera	FAIL	This feature was not added as uploading images can replace this function
Forum Page					
Users want to discuss the effectiveness of certain products with other users through the forum	Users clicked the pencil button on the top right of the forum page to create a new thread.	Users will be able to post on the forum with questions	Users will be able to post on the forum with questions	PASS	
Users want to start an effective forum page	After clicking the pencil button, users can pick an image of the product to upload. Users can also enter a title for the post and the text body for the post.	Users will start a forum thread with the image and texts input	Users will start a forum thread with the image and texts input	PASS	

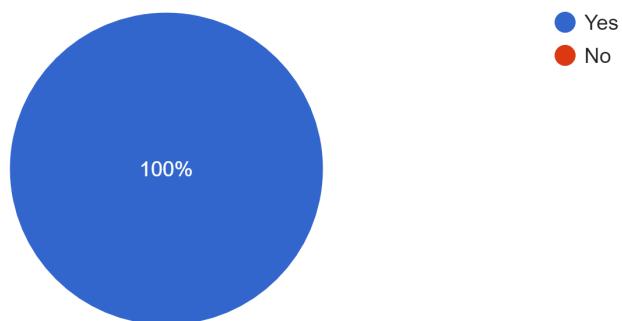
Users want to reply or comment on a thread created by other users	At the forum page, and at a specific thread post by other users, there is a “+” sign button indicating creation of a comment.	Users are able to comment on other users' threads.	Users are able to comment on other users' threads.	PASS	It may take some time to load, users are advised to pull down and refresh the page for less load time.
Users want to like or dislike a forum thread created by other users	All forum threads posted have a Green up arrow and Red down arrow to click. 1 green upwards arrow shows an upvote and 1 red downward arrow otherwise.	The number in between the 2 arrows reflects the number of up or down votes the threads have gotten.	The number in between the 2 arrows reflects the number of up or down votes the threads have gotten.	PASS	The number can go negative if there are more downvotes than upvotes.
Profile Page					
Users can view its own profile page which shows basic information of him/her	Clicks on the profile page button	Under the username, basic information of the user is written in the text	Under the username, basic information of the user is written in the text	PASS	
Users can edit his/her own basic information	At the profile page, click the “Edit” button and fill in the information needed such as “username”, “first name”, “last name”, “gender” and “age”.	After clicking update, the information will be reflected back into the profile page.	After clicking update, the information will be reflected back into the profile page.	PASS	

Users can change his/her profile picture which will be used in the forum.	At the profile page, click the "Edit" button and click the camera picture button at the top.	After uploading an image for the profile picture, it will be reflected back to the profile page. The new profile picture will be the one used when posting forums as well.	After uploading an image for the profile picture, it will be reflected back to the profile page. The new profile picture will be the one used when posting forums as well.	PASS	
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Survey Responses

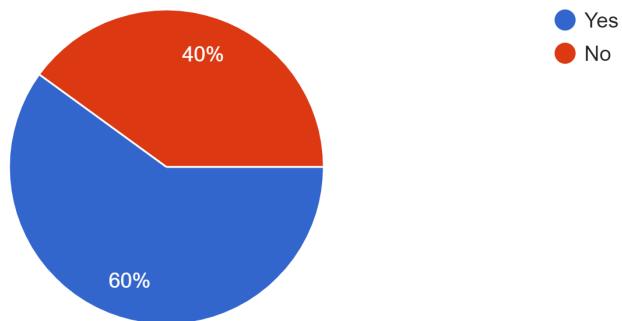
Would you like to participate in the Research? All data will be kept anonymous and will only be used for this project.

5 responses



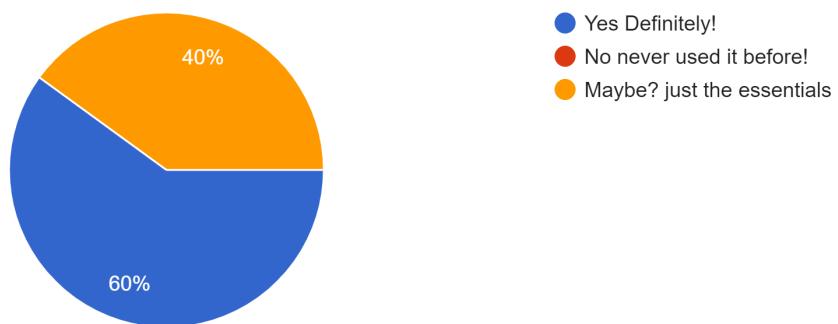
Are you using an Android phone?

5 responses



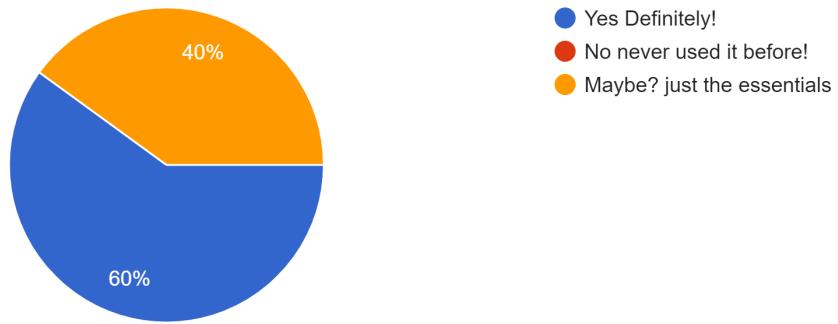
Are you a frequent skincare user?

5 responses



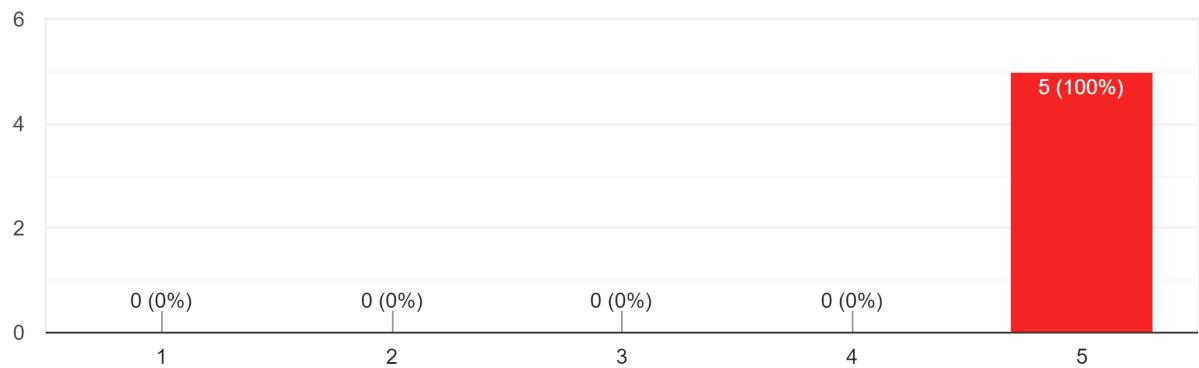
Are you a frequent skincare user?

5 responses



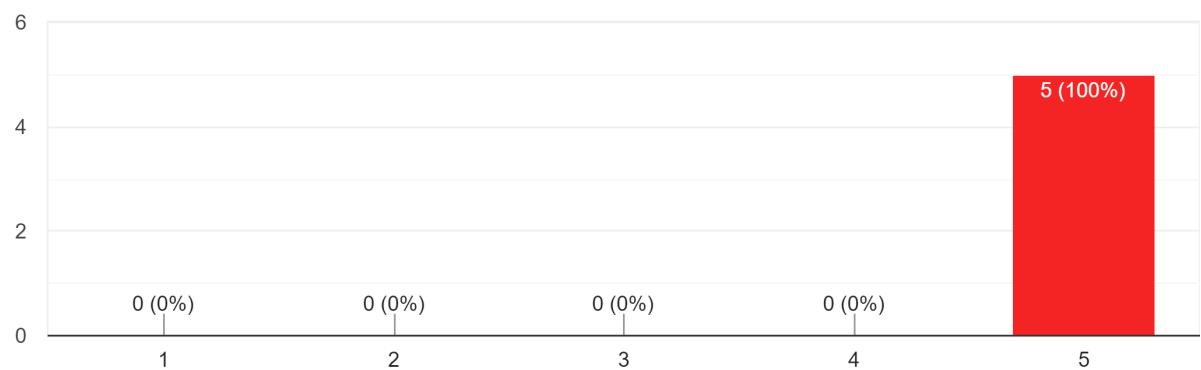
On a scale of 1 - 5 how will you rate the interface of the application?

5 responses



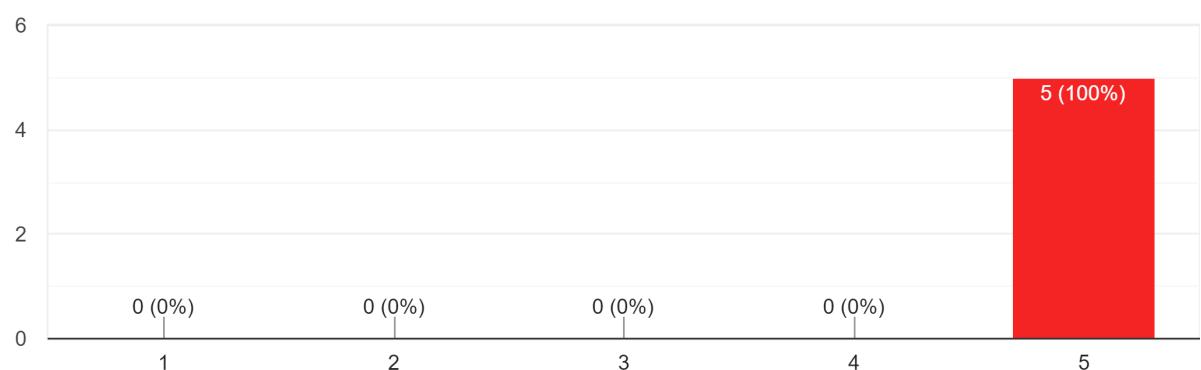
Skincare Diary function

5 responses



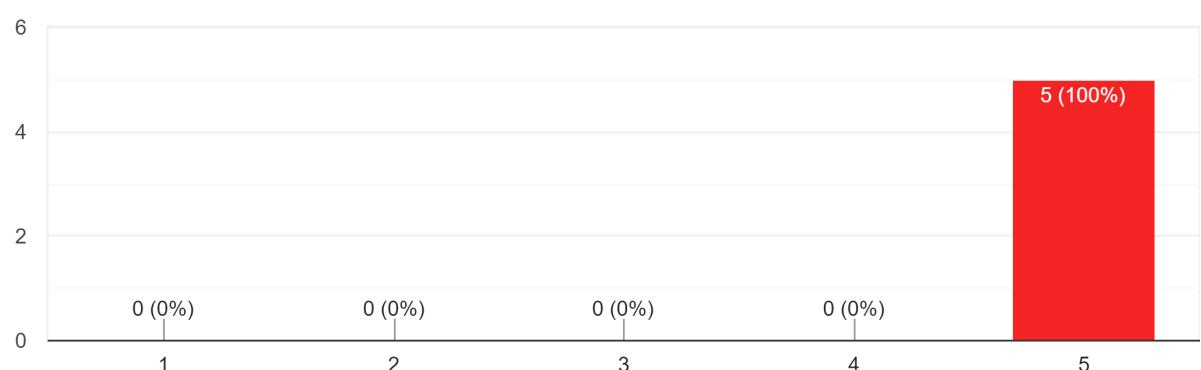
Search function for skincare products

5 responses



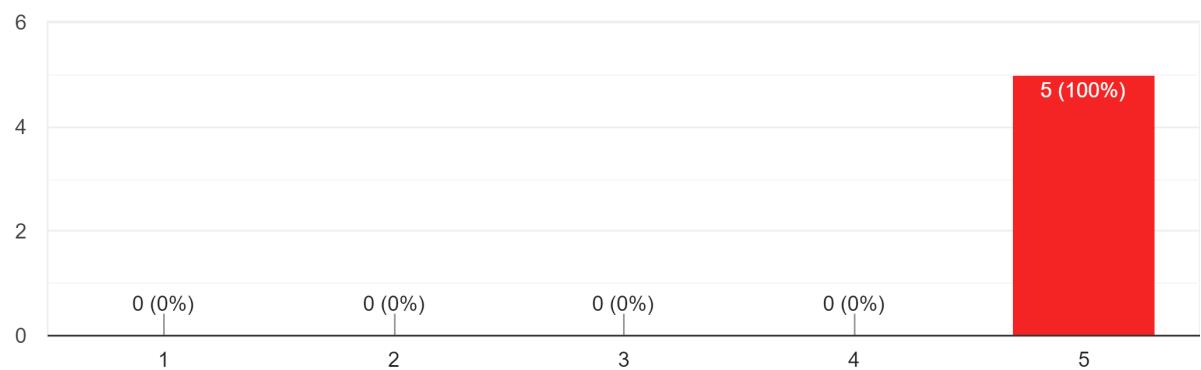
Upload Image function

5 responses



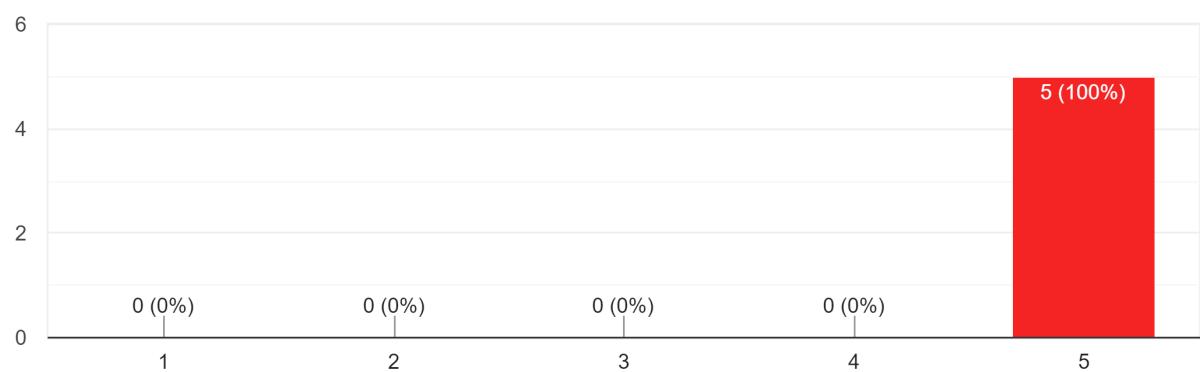
Forum function

5 responses



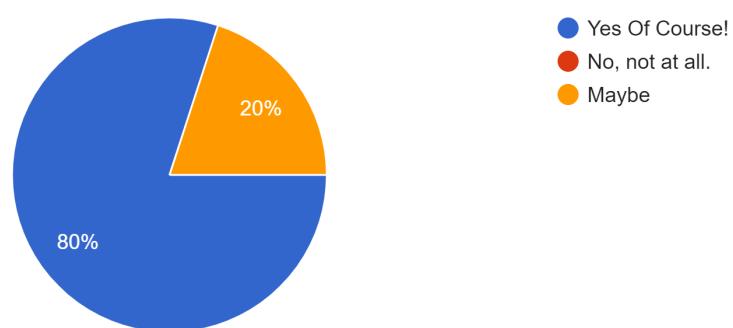
Profile Personalisation function

5 responses



Will you recommend this app to your friends?

5 responses



Tech Stack

- React Native
- JavaScript
- Firebase

Software Engineering Practices

1. Cloud-based source code management

We utilised **Github** as a tool to access a complete record of all our tasks and to keep track of all alterations made to the code. A **detailed summary is to be written before every push to the main branch** such that both developers will be in the know of what has been completed. This ensures that we **both understand what the other has added to the code, improving our communication.**

2. Continuous Integration

Our team carries out **merging of all our completed code several times a day**, with **testing to be done after every merge**. This ensures that changes made by both developers **do not have any conflict**.

3. Code Refactoring

Before pushing any completed code into the master branch on Github, each developer restructures the code. This practice has helped us immensely by making the **code more readable to the other developer**, as well as **picking out reusable design elements and code modules** for later development.

Project Log:

S/N	Task	Date	Radell Ng Jun Long (hrs)	Loy Yoke Yue (hrs)	Remarks
1	Team meeting + Initial planning	10/05/2021	10	10	1) Set out the features of the application 2) Worked on the poster and video pitch 3) Decided on tech stack to employ

2	Team meeting + Goal settings + Brainstorm app design	17/05/2021	10	10	<p>1) Set things to do: Templates Login page Signup page + Survey (do later)</p> <p>2) Homepage to display the user's routine, AM/PM.</p> <p>3) Design of the app - 5 horizontal buttons at the bottom of the screen (Home, Product Search, Upload, Forum, Profile). Dropdown menu for settings to be seen on the Profile page.</p>
3	Team meeting + Finding a solution for navigation between screens	24/05/2021	10	10	<p>1) set things to do: Create a router.js file which consists of all the navigation</p> <p>Navigation between sign in and sign out screen</p> <p>Touching up on profile & settings page.</p> <p>2) Start on Milestone submission</p>
4.	Programming	25/05/2021	5	5	1) Developing the various screens.
5.	Programming	26/05/2021	5	5	1) Added search bar 2) Improved profile page
6.	Programming	27/05/2021	5	5	1) Integrated Firebase into the project

7.	Programming	29/05/2021	5	5	1) Beautify the signup/signin pages.
8.	Programming + creation of database	03/06/2021	5	5	1) Started on profile page and edit profile page 2) Started on the forum page 3) Started creating databases on the backend.
9.	Programming	10/06/2021	10	10	1) Finished linking the update profile button to the profile page 2) Uploading of profile picture
10.	Programming + Backend setup	16/06/2021	5	5	1) Finished the upload screen 2) Linked the picture uploaded by the user 3) Beautify profile and edit-profile page.
11.	Programming	18/06/2021	10	10	1) Linked the user database to the forum. 2) Include the upvote and downvote to the forum posts.
12.	Team Meeting + to do lists check	22/06/2021	5	5	1) Checked on our progress and see if we are on track with our timeline 2) Help each other out with the difficulties faced by each other. 3) Discuss if core features are being implemented first.
13.	Programming + backend	25/06/2021	5	5	1) Able to retrieve pictures uploaded to the database 2) Include pictures into the homepage as

					part of the skincare diary.
14.	Programming + Milestone 2 submission	28/06/2021	10	10	<ul style="list-style-type: none"> 1) Ensure that application is runnable as an APK 2) Touch up the project log, README. 3) Created a new video and poster for milestone 2.
15.	Researching + Backend preparations	01/07/2021	10	10	<ul style="list-style-type: none"> 1) Researching on how to get some features of the app to run faster 2) Researching on how to get an efficient search function 3) Preparing the backend data for users, skincare data.
16.	Programming + Team meeting	06/07/2021	10	10	<ul style="list-style-type: none"> 1) Re-delegated task moving forward 2) Ensures that we are still on track with the timeline 3) Started working on the search function 4) Started working on a more efficient forum page
17.	Researching + Programming	12/07/2021	10	10	<ul style="list-style-type: none"> 1) Working on the search function, deciding if we should use a local directory or the online backend for a more efficient search

					2) Forum page is done 3) Started to improve on the Edit profile screen and ensure loading speed is decent.
18.	Backend + Programming	15/07/2021	10	10	1) Finished with the search function 2) Attempts to improve the search function 3) Improving the homepage with a greeting for the users.
19.	Documentation	22/07/2021	5	5	1) Continued with improving main features such as home, search and forum. 2) Started doing manual testing with documentation
20.	Programming + Milestone 3 submission	26/07/2021	10	10	1) Did a new video documenting the new search feature 2) Re-scoped the features decided to keep the homepage and search page status quo

Total Hours	Radell Ng Jun Long (hrs)	Loy Yoke Yue (hrs)
310	155	155