

# Final Project for Native Mobile Programming

Semester 1 (Odd Semester) AY 2022/2023

Make an application called "Daily Meme Digest" as a provider of daily intake of meme stock. Users can view memes created by other users and interact by giving likes and comments. This application can also create new memes with the templates provided.

## Requirements

- The project is done in groups of a maximum of 3 students.
- You can create API and databases on the ubaya.fun server, only in the account of one group member (preferably in the account of the group leader).

## Web Service API

Please make the PHP pages needed as an API for the application. The database can use the following structure and be adjusted if additional features are required.

### users Table

This table stores user data. The minimum data that needs to be stored is the user ID, username, first name, last name (can be empty), password, registration date, link to avatar image, and privacy setting. The privacy setting is used to hide the user's name.

### memes Table

This table stores user-generated meme data. The minimum data required is the meme ID, the URL of the image the meme is based on, the top text, the bottom text, the creator ID, and the number of likes.

A meme is made up of three parts: the URL of the meme image, the top text, and the bottom text. Look at the following example of memes.



## memes\_comments Table

This table holds comment data for a meme. The minimum data required is comment ID, meme ID, commenting user ID, comment content, and comment date.

## The application

The first time the application is opened (after being installed by the user), the **user state must not log in** to the application. Display the login screen like this.

Daily Meme Digest

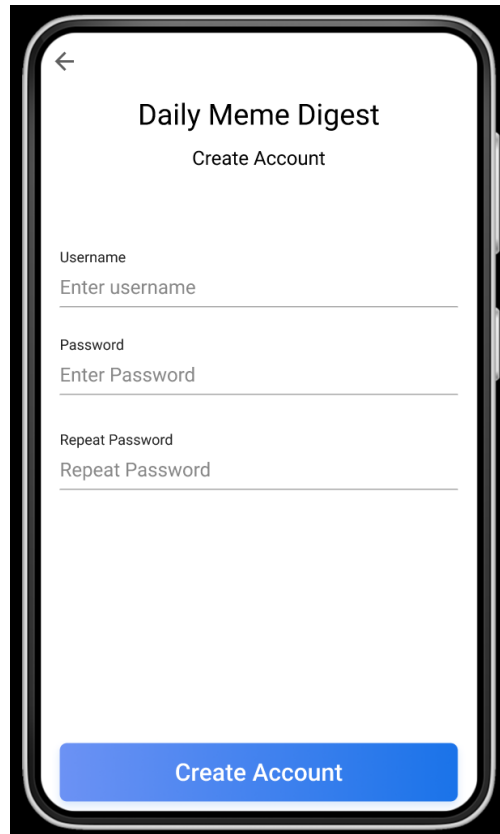
Username  
Enter username

Password  
Enter password

Create Account

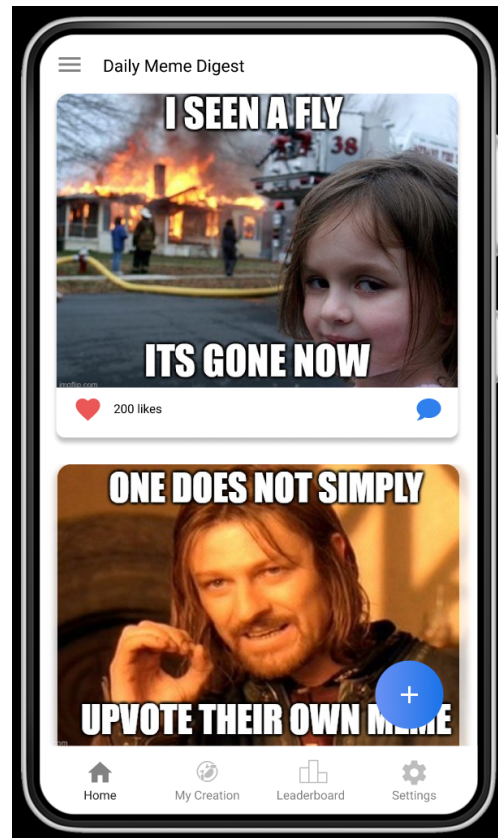
Sign In

If the user does not have an account, they can first **create an account** by clicking the **Create Account button**. Display the registration screen as follows



The image shows a mobile application registration screen. At the top left is a back arrow. The title 'Daily Meme Digest' is centered, followed by the subtitle 'Create Account'. Below this are three input fields: 'Username' with the placeholder 'Enter username', 'Password' with the placeholder 'Enter Password', and 'Repeat Password' with the placeholder 'Repeat Password'. Each field has a horizontal line for text entry. At the bottom is a blue button with the text 'Create Account'.

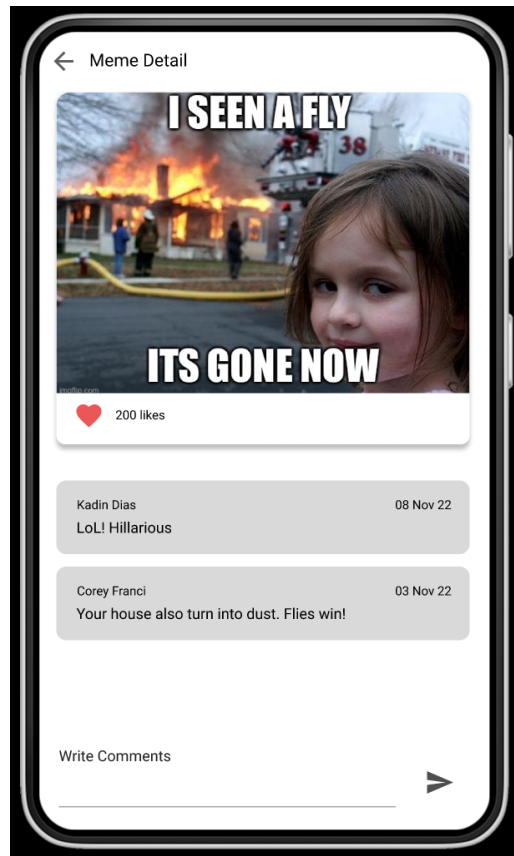
After the user creates an account, return the application to the login screen so that the user can immediately log in using their new account. If the login is successful, open the main screen as follows. The login screen **will never appear again until the user explicitly logs out** of the application.



This screen has four tabs: **Home**, **My Creations**, **Leaderboard**, and **Settings**. All four have their respective functions, which will be explained as follows.

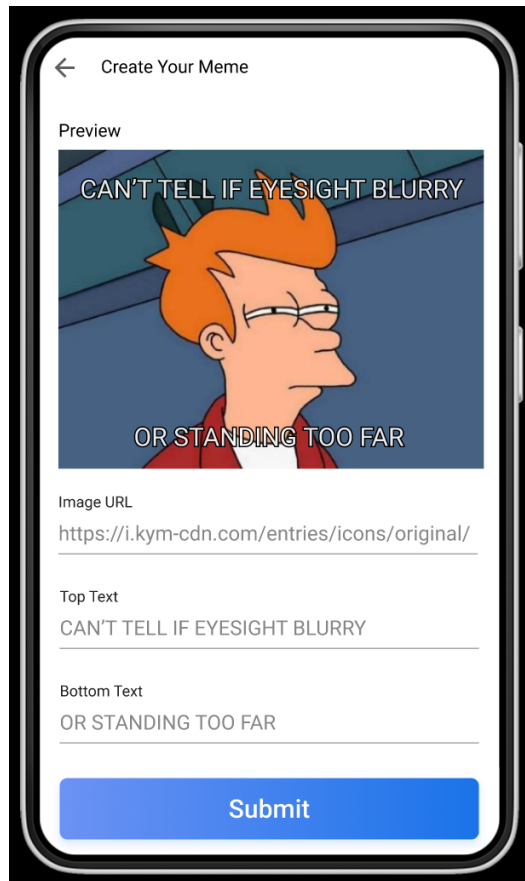
On the Home tab, **display all the memes created by all users using cards**. For simplicity, display them in descending order so the most recent memes will always appear first. Other sequences you can make yourself (can be an additional feature, see grading).

On the card, at the bottom of the meme, **display the like button (heart icon) in its initial state, colorless if the user has never liked the meme or red if the user liked the meme**. Don't forget to update the number of likes (including the value on the database) according to this button click (i.e., increase the value if the user likes it, decrease if the user cancels their like). Next to the like button, **display the number of likes the meme has**. On the right, **add a comment button** that can be clicked to display the meme detail screen, as shown below.



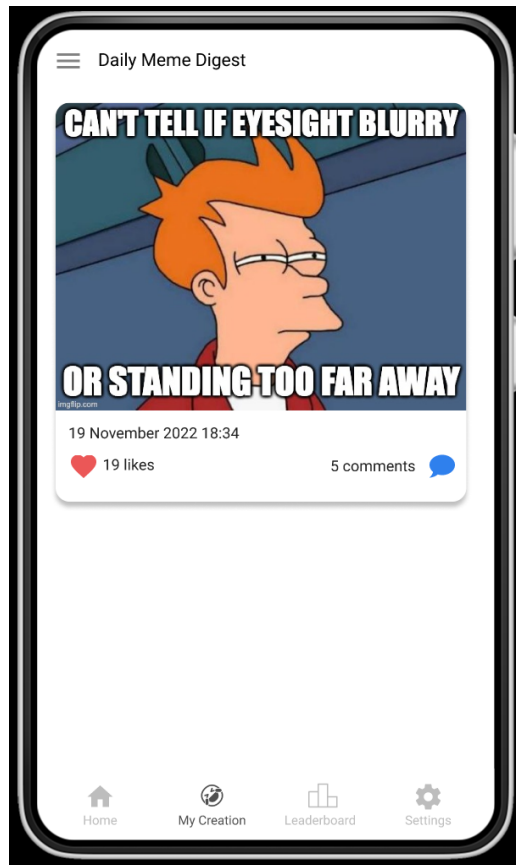
Show the meme in the form of a card similar to the card on the Home page, but this time remove the comment button. **All comments are displayed in list form, sorted from the latest** (you can determine the layout). For simplicity, all comments are *single threaded*: meaning comments can only comment on the meme, not as a reply to other comments. At the bottom of the screen, **add a text field to add a new comment**. If possible, this text field is always at the bottom of the screen so that the user doesn't have to scroll too far if there are a lot of comments.

Users can create new memes by pressing **the FAB + button on the Home page**. Display a meme creation screen like the following



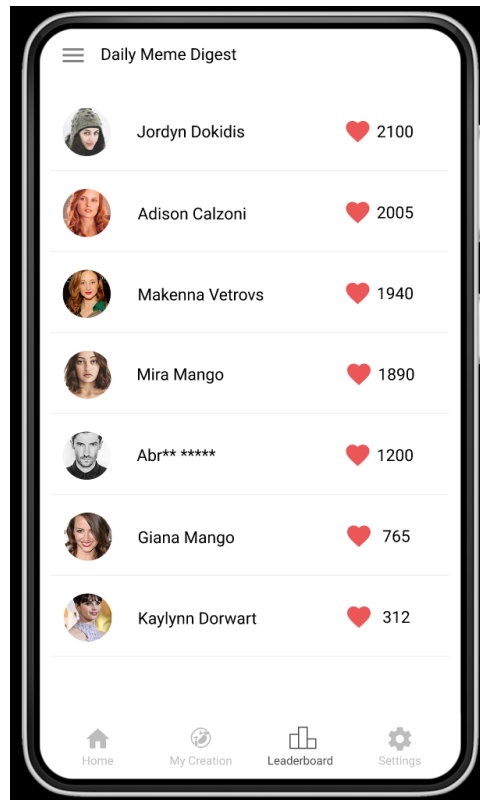
Bonus points are added if the **meme preview can change on the fly** when the user switches focus from one text field to another. If not possible, add a Preview My Meme button before the Submit button to preview the meme. If the Submit button is pressed, save it to the database and redirect the user to the My Creations tab.

The My Creations tab **lists all the meme creations that the user has made**. Example display:



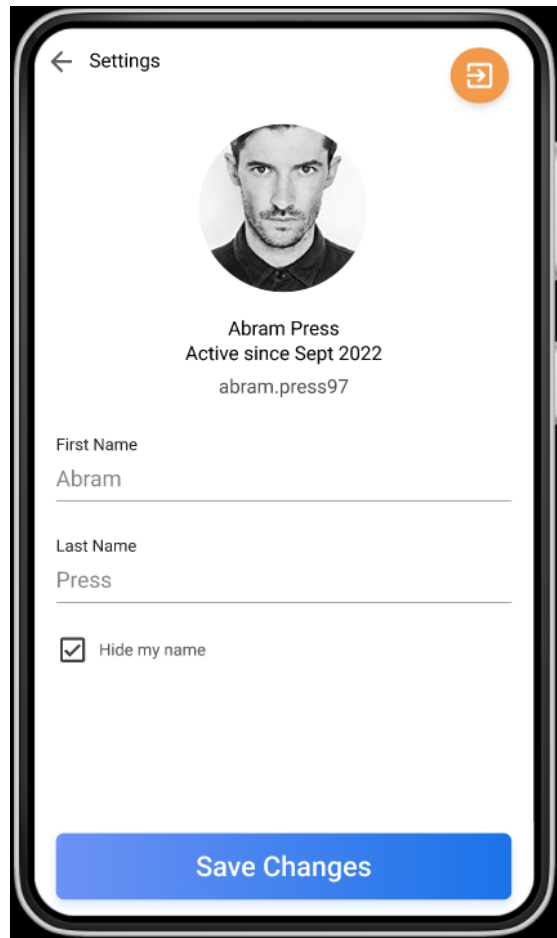
This meme card has the same behavior as on the Home page, but change the like button to just an icon (to prevent narcissistic users liking their own memes). Another addition is to **display the number of existing comments on the meme**. You can also display this comment count on the main page if you wish (so it can be seen which memes have the most engagement).

The Leaderboards tab displays users **sorted by the total number of likes received from all of that user's meme creations**. Display only in the form of a list, as follows:



If the user activates the privacy option (see the Settings tab), **display only the first three characters of the user's full name**, and **replace the rest with stars**. The number of stars represents the remaining characters not shown.

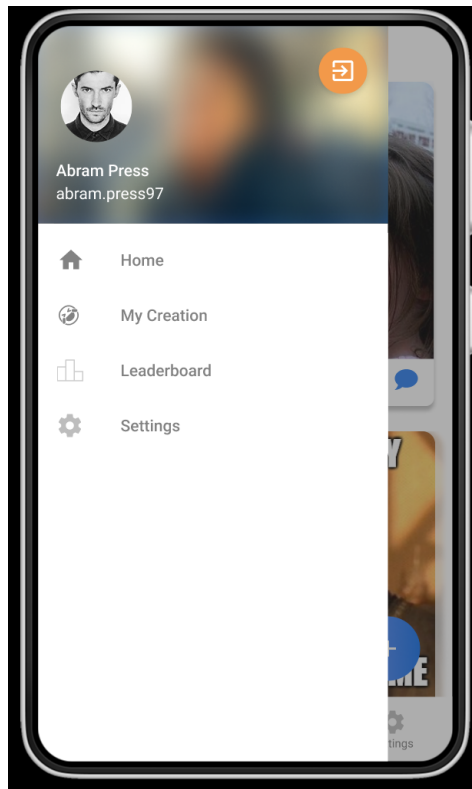




The Settings tab **displays the user's avatar** (which can be changed if the user **clicks on the avatar and displays a bottom sheet to let the user choose an image** from the gallery or camera).

The full name of the user, the words "Active since (month of registration)", username, two text fields for the first name and last name that has been **automatically filled with the name stored in the database**, and a **privacy check box to hide the name**. The last name may be left blank to facilitate users whose name is only one word. If the privacy option is turned on, then the user's full name will appear only in the first three characters. The rest are replaced with \* characters. Add a **Save Changes button to save changes**. In the upper right corner, there is a **FAB to exit the application**. If this button is clicked, it logs out and returns the user to the login screen.

Also create a **navigation drawer** on the start page (so this drawer should appear on all four tabs). Example of a navigation drawer display:



For the header, display the **user's avatar, full name, and username**. For the background image, randomly pick one of the memes and do a Gaussian blur. If not possible, just use one image that is the same for all users. Add a **FAB for logout in the top right corner of the header**. Just fill the drawer in the **same menu as the bottom navigation bar**.

## Scoring Details

Please refer to the table below to measure your score.

Elements	Details	Max. Score
Login & Logout	Login through rest API	10
Registrasi	Adding new user	5
Home	Display all memes in descending order	15
	Likes button works well and immediately updates the number of likes	5
Detail meme	Display required data (meme image, latest comments)	10
	Adding new comment	5

Meme creation	Preview	5
	Saved data	5
My Creations	Displays all memes created by currently logged in user	5
	Can open detail meme screen	5
Leaderboards	Display correct leaderboard data	5
Profile	Changes user avatar using Implicit Intent	5
	Save changes	5
Nav drawer	Display user data correctly	5
Miscellaneous	Additional features	10 (5 per feature)

Example of additional features:

- Memes filter in the home screen, i.e. order the memes based on most liked, most comments, most viewed, etc. To obtain full marks on this feature, at least you should create a minimum of these three filters.
- Meme preview can immediately display the changes
- User comments can also be liked by other users. Please check this feature on other platforms like Facebook, Twitter, Instagram, and other social media)
- If privacy is not enabled, avatars of users who like a meme are displayed next to or below the number of likes (see an example like on Instagram).
- Report Meme button if the meme is deemed inappropriate. A popup, bottom sheet, or new screen categorizes reports (e.g., offensive to SARA, contains nudity, etc.). If the number of reports reaches a certain number (e.g., ten reports; feel free to set a limit yourself), the meme is automatically “downsized” and no longer displayed on the Home page for all users.
- An added feature shows why the platform took down the meme on the My Creations screen for the meme creator. The system can make the card's appearance differently to indicate which meme is derived. This counts as a separate feature (you can get 10 points if complete makes up to this point).

## Additional Requirements

- The project must be done with the **native android platform** according to what is taught in the NMP class. If it is known that the project is done using techniques not taught in NMP and the student cannot explain it, then **NAS = 0**.
- The programming language used is **Kotlin** for the native android platform and **PHP** for web services. The student is not allowed to use other programming languages.

# Submission

- The project is done in **groups of three students. Permitted cross KP.**
- During the demo the lecturer will **test one of the group members.** The test results affect the value of the group.
- UAS NMP demo is **conducted online** on the day and time to be determined (TBA)
- This project is **worth 80% of the total NAS.** The remaining 20% is obtained from individual practice scores and homework in class.