TaskCO: Android App For Task Management

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***Abstract* – With the increasing impact of mobile phones on our daily lives, we rely on the smallest things on our mobiles using various applications. Applications have become a daily routine in our lives. Attractive interfaces often ignite the spark to inculcate such good habits. In this hustle-bustle life, it is necessary to keep track of your day-to-day deadlines, commitments, and progress. This is where the task management app plays an important role. This paper contains the main motive for creating this app and its technologies and features to make it better and user-friendly. It also includes the thought process behind every feature which was thoughtfully curated and designed for the user. To make the app intriguing a splash screen is added to make the user feel pleasant as soon as the app is opened. In addition, various features like segregated folders, light and dark modes, one-time login and signup, an attractive interface, and notifications, make this app very engaging to the user.**

Keywords – Flutter, SQLite, Local storage, IDE, Shared preferences, GitHub, Dart

I. INTRODUCTION

Being a student and having daily assignments and project deadlines almost every day becomes difficult to catch up and manage the time given with regular homework. When we have multiple tasks allotted at different times it is difficult to jog through the memory at the end of the day and remember all those tasks, hence, a task manager app is perfect for the user who has multiple tasks to do while keeping the time management aspect constantly running on the mind.

TaskCo, a task coordinator application is the user's virtual coordinator who reminds the user of all the tasks he/she has to complete within the specified time frame. This app is made with a very appealing and interesting interface for the user so they are motivated and not procrastinating which leads to a lot of backlogs and hazy deadline submissions.

II. LITERATURE SURVEY AND TECHNOLOGY STACK

A. Literature Survey

To get a fair idea of the existing technology prototypes related to the task management app, thorough research and analysis was conducted. Research papers give us a fair idea about what all technologies have been used for a particular topic, how things have advanced and how people have adapted to changes. It is a very good and informative way to learn about the technologies and their application in the real world in brief, all in one document. The paper [1] provides an idea about the existing android apps that were based on remote tasks simplification. They merged the two technologies:PyAutoGUI and Firebase. This android app includes the functions of both technologies' functions, enhancing efficiency and user interaction. Moreover, this app was developed using integrated Development Systems (IDEs) with lots of public reviews and suggestions. According to the research we conducted there are not many options available for successful IDE mobile applications. So, this paper gave us thorough knowledge about that factor. It also helped us review our app and make notable changes in our UI and backend.

Also, some apps are developed in such a way that the frequently used applications are simplified and upgraded as manageable and disciplined. Often, we get up late, in that case, the alarm app helps us. We sometimes forget to drink water while under loads of work, the water-drinking apps help us. We sometimes need to note down quick points, and we use the notes app [2]. The notes app helped us to get a clear vision of the core structure and reasoning behind our app. This paper helped us with our design and public appeal factor development. As an instance, a simple music player is provided to illustrate the basic working processes of Android application components. This gives us a clear idea of why an android application is needed [3]. This paper states the clear and sole purpose of the application without making the user confused. Also, mobile apps can be a challenging task taking into account the constantly evolving cultures [5]. Since Android is an open and free operating system based on Linux, it creates a lot of space and opportunities for users [4]. Android applications are available for every possible manual task these days, proving their constant importance in this rat race. After researching all these papers, we achieved clarity on what was the purpose of our app, how to make it user-friendly, how to make it efficient, how to make it engaging to the user, and how to satisfy all the user requirements.

After taking many notes from all our research papers, we came up with the final idea of TaskCo.
TaskCo is such an app that is a combination of alarm and notes in a very engaging way. TaskCo has different folders for every category, for example:

- Studies
- Exercise
- Diet
- Movie
- Vacation
- Medical check-ups etc.

B. Technology stack

While developing an APP, we need to develop backend and frontend interfaces. For the frontend interface, the technology used is "Flutter". Flutter is an open-source UI software development kit. It is easy to learn and apply. Kotlin can also be used, however, the "Flutter" technology was preferred over "Kotlin ". Flutter has comparatively more features and animations than Kotlin which makes the use of

the technology better. It has a local storage option known as “SQFlite" which helps in storing data in the same technology (as in Fig. 1). For the backend, the technology used in “SQlite ". SQlite has a very user-friendly interface and is easy to understand and use. Flutter has a better UI which makes it easy to understand and adapt to the app. It also has a provision for shared preferences for Sign In/Sign out.

Also Integrated “Development environment (IDE)” was used, which is “VsCode”. Vscode is a compiler that is easy to use and supports most languages. Its interface is attractive and divided into sections which makes it user-friendly.

Fig. 1 SQlite is the backend technology used in Flutter

III. METHODOLOGY

While browsing through various existing task manager prototypes, it was observed that the interface was not very appealing and was a bit plain and regular. Wanting to make an interesting yet appealing app, we also made notes that the tasks were all assigned generally to the calendar which would be confusing at times considering the different categories of tasks or priorities of tasks. Hence, coming up with a UI that is attractive and will engage the user, as shown in Fig. 2, while segregating all the categories in different folders, for example, the health folder, Studies folder, Events folder, etc. In addition to it, we also have added the notifications feature which reminds you of your upcoming or pending tasks.

Fig. 2 Interactive UI

This is the flash screen that appears when we turn on the app first

The main target audience is students and education field professionals. The main reason for it was due to the pandemic, where the whole world had gone online. Students get homework and assignments while regular submissions and exams come up. This task manager app helps them maintain their schedule and make sure they avoid backlogs and are always up to date. The teachers can also keep track of all the assignments received and the attendance records of children. Also, they can make a folder for students who are weak in a particular subject and help them out. Also, we have linked the Google classroom and MS teams to the app for the convenience of the students and the teachers. While keeping all these prospects in mind we proceeded with making the “TaskCo” task manager app.

The first thing incorporated in the app was dark and light modes so that based on that the color palette could be decided for each mode, as shown in Fig. 3a and b. A button was added to the top left corner of the app. Instead of adding the whole calendar, it was decided to add a scrollable calendar on the screen so that it doesn’t look tedious and the user is not intimidated by the other tasks and is focused on the current task instead of focusing on the next task beforehand. Then we linked a task to a particular date that was added by the user or assigned by the user to a particular date.

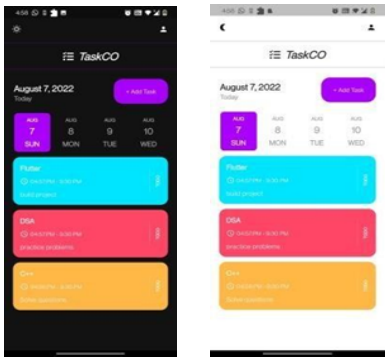

Fig. 3 (a) Dark and (b) Light mode

The two modes of the app dark and light mode are shown above

Next, proceed with working on the time slice and the date format for the assignment of the tasks. An option was given for choosing the color of the tile. On the other hand, a short description was added along with the title of the task, because due to our hectic life schedules we tend to forget what we are exactly supposed to do. For example: In the exercise folder if the user writes the task of yoga, but does not specify which all yoga poses he has to do, how much time he has to do and all of that minute yet important details. Can be easily missed.

A provision was added to keep things neat and maintained properly where the task can be deleted if the user wants to. Also, the completed tasks can be marked as completed and will eventually disappear from the screen, giving a sense of satisfaction that the user completed all the tasks and is not lacking in any task. However, this will also help the user to keep its task manager app well-organized adding a sense of self- discipline. In addition, it will also avoid the interface from looking messy.

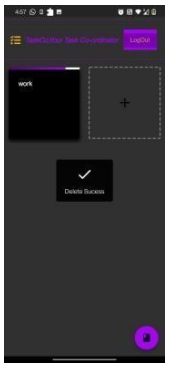

Fig. 4 Deleting a Task

The next step was to create a folder. We created a folder and also added an option to delete it if the user wants to, as shown above in Fig. 4. When a new folder is created, a title is given to it. The color of the folder can be chosen by the user according to their preference. The first issue encountered while creating the folders was that the folder contents were merging resulting in all the tasks assigned to a particular folder. So, every time a new folder is created, as shown below in Fig. 5 all the contents of the existing folders were added to it by default. To come through this, a unique folder id was assigned to every new folder. Once a task is assigned by the user to a particular folder, the folder id of that folder will be called and the task will be saved under it. This resolved our problem and gave us an organized folder for every category.

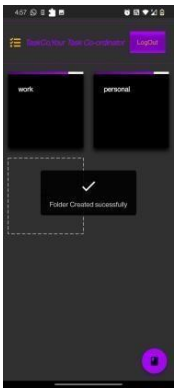

Fig. 5 Creating a folder

Moved to the core part of the app, which was the notifications. Once the time of a particular task arrives a notification will be sent to the user. To add a cherry on top the feature of connecting the google meet and MS teams to the application was added so that the student or the teacher could quickly join the meeting once they receive the notification from the app regarding any meeting.

Lastly, the user Sign In/Sign Out and log-in/Logout feature, as shown in Fig. 6a and b were added. Once the user enters their details, they will be stored and later fetched from it and pasted into the about section. This will help the user save time from entering redundant data such as name, email-id, phone number, etc. The user will be logged in to the app until he/she manually logs out. We could include this feature with the help of shared preference, a feature provided by the flutter application. For using this app, the basic requirement is a smartphone.

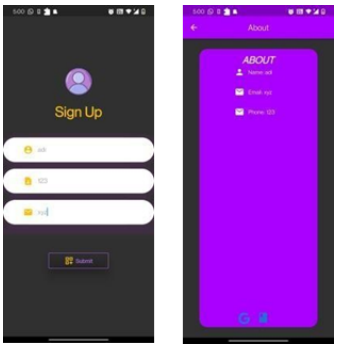

Fig. 6 (a)Sign In Sign out Page (b) About page The above image shows the sign-up and about page

I. RESULTS

To make a task management application it is very important to incorporate unique and fascinating features which will keep the users attracted and engaged.

The key features of our app are:

- Separate folders for every category of work (for example studies, project deadlines, events, etc.)
- Light and dark mode
- Attractive color pallet
- App notifications
- Easy to use
- Quick to Login/Sign-In
- Captivating interface

This app provides various features which help to manage various tasks. It helps us keep track of upcoming and pending tasks. For every category of the task, the user can create a different folder and manage their tasks accordingly. After finishing the task, it is easy to delete the task to avoid further confusion. According to the user's preference, the dark or light mode can be applied to the app. The notifications will pop up once a task nears. The attractive color pallet engages the user and motivates them to complete all the tasks on time.
The interface of the app is attractive, also the features such as folders and reminders are quite impressive. To check out the functionality of the app a small survey was conducted among 50 users. They used the App and gave reviews/feedback on how they think the app works or what could be improved. The parameters used for the effectiveness of the App are based on the user interface, Core functionality, connectivity, attractiveness and uniqueness of the application, notification, and other functionality. Users have been given points on a scale of 1-5, Users were satisfied with the app, however, they mentioned the notifications which won't appear on the phone when the app is closed. Table. 1 and Fig. 7 show the assessment analysis of the survey conducted. As for the connectivity, data is fetched from the login page to the about section and connected to educational apps like Microsoft teams and Google meet.

User interface	Core Functionality	Connectivity	Attractiveness and uniqueness of the application	Notification and other functionality
4.5/5	4/5	3.5/5	4.5/5	3.5/5

Table. 1: Assessment by users (1- Poor, 2-Average, 3- Good, 4- Very Good, 5-Excellent)

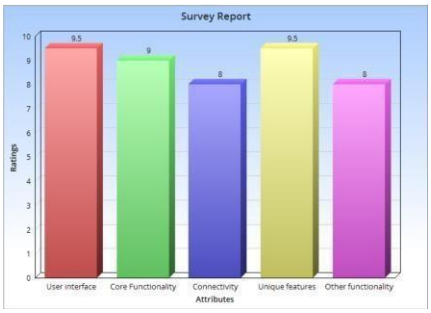

Fig. 7 Bar Graph

Above is the graph of the Survey Table

For the future scope, working on adding notifications to the app even when it is not currently running on the user's phone is being continued. Another feature to add is that a total percentage of total tasks will be shown which are completed against how many tasks were assigned or to be done on that particular day.

I. CONCLUSION

This project concludes that the root objective behind building this app has been solved. The app has a great response from the average taken by the trials on it. It satisfies the basic need of every person and keeps us in the loop of our work avoiding us to stray away from it. The user interface is good and attractive which engages people and the later features such as login and sign-in sign-out also intrigue people. The shared preferences feature also makes it appealing and adds an edge to the app. After a little more improvisation this app is ready to be deployed.

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