

Review Article

Task Multiplexer and its Application: A Review

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A B S T R A C T

So, our undertaking is largely a cloud-primarily based device that makes use of the Kanban approach of undertaking management. With this, users can visually arrange projects into boards, divide tasks into agencies, subdivide organizations into duties. Managing initiatives and groups can every now and then appears time-consuming. Fortunately, there are several unfastened challenge control answers to assist assignment leaders in dealing with their workflow. One of those solutions is Task Multiplexer, a cloud-based totally device that uses the Kanban approach of project control. Under the Kanban technique, all mission-related sports activities are displayed in a single panorama that is viewable to all contributors of the challenge institution. With Task Multiplexer, users can visually arrange tasks into boards, divide tasks into companies, subdivide agencies into responsibilities. Task Multiplexer's person-pleasant interface makes it ideal for a wide sort of customers, from people dealing with non-public responsibilities which consist of home renovations to organizations handling multiple big projects and companies. To meet customers' wishes, Task Multiplexer gives various tiers of carrier at extraordinary fee points.

As libraries keep to conform inside the offerings that they provide, librarians can be an increasing number of answerable for coping with huge tasks, planning and outreach, coordinating teams. While some tasks may be easily executed via an unmarried person, others may moreover contain a group and several shifting factors. In the latter case, a mission chief may be responsible for developing a mission plan, establishing a timeline, recruiting institution participants, assigning responsibilities, handling development, apprising sponsors and better control of the project's development.

Keywords: Tasks, Lists, Cards, Boards, Members, Kanban Method, Project Management, Cloud-Based Tool, Activities

Introduction

In today's era where everybody wants to work and live fast there is always a chance, we miss out some things. We are always in a hurry to get things that we often tend to forget some tasks. To organize task better and bring

everyone involved up to the pace, we are developing an app called Task Multiplexer which helps in managing tasks splendidly. It greatly enhances team coordination as everyone involved in project can see which tasks are being worked on, which are completed, which task is assigned to whom. It provides a feature where anyone can assign you a task swiftly. We have simplified the technique of chal-

challenge management and elevated the user friendliness of handling app so that person can hop in and get acquainted in remember of seconds. In an ideal scenario of managing activities handling so many tasks simultaneously become a nightmare for people whether they working professionals or students. As the world have now observed a complete online dimension for working and for studying as well. Handling tasks with ease is one of the scenarios that people think of. The second major activity comes when users choose between working late or working and managing time with the use. There is always a need of taking out a software with which tasks and multiple activities can be handled without any external pressure and the one which is having some common functionalities so that different tasks needing different methodologies can be handled with ease and within sorted time-period.



Figure 1. Feasibility Study

Technical Feasibility

When it comes to the technical aspects of the task it consists of:

- Kotlin
- Android Studio
- Firestore and Firebase

The advanced utility might be clean to use when compared to its equipment.

Economic Feasibility

The “Task Multiplexer” project is a free to use and particularly beneficial mission as far as the value of development is considered. No more charges had been incurred other than the software used whilst making the undertaking. Tools used are loose to get right of entry to and clean to learn.

Operational Feasibility

The challenge is operationally very viable as it’s far character-pleasant, the patron doesn’t require any information approximately the software program used or technical competencies for the usage of the utility itself. The project also makes it easy for the user to handle multiple tasks and any random point of time complexion.

Methodology

We are making a Task Multiplexer Application in which we are able to manage all our tasks in one place easily.

In this first a board is created which contains different types of tasks. All obligations may be divided into exclusive forms of playing cards in which we are able to have small subtasks.

We can add different members to a particular task so that he or she can also be able to work simultaneously, say working on a project. Our app will be connected to the cloud (Google Firebase) so that we can not only add login features like Sign Up/In with Google, Facebook or we can login with our personal email also. It will not only provide security and login efficiency but also with this we will be able to add members to the tasks. Members added can only work on that particular card.

It will use Google FireStore which is a cloud storage so that not only it will save our phone’s memory, but also if the user changes his/her device or try to access it on a desktop or pc, all the tasks can be easily available which also increases reliability and accessibility. Only thing is they have to login with their same login credentials. While creating a card, we can also add a due date so that the work according to their deadlines can be completed without any delay.



Figure 2

In these days fast paced lifestyles, we need to be at par in multitasking. And for multitasking, we have to keep a record of everything that we are doing and we have to do it in the particular time so that we can make use of our productivity at most. In our application, the user can not only add its task, but also can customize it, like creating a board which contains main tasks; and those tasks can contain different sub-tasks. They can change the order of tasks which have to be done first as sometimes priorities change. Each venture may be edited without problems and might delete non important or not in use obligations. Different label colours can be given to each sub task to differentiate them easily. Each card will have a due date time to meet the deadline of the work so that nothing can be detailed. We also can add contributors to the undertaking so that one-of-a-kind customers can work simultaneously without paying any more price or any 0.33-party quantity The addition and removal rights of members are secured and encrypted, authorized by the admin. Any changes which the user makes will automatically get stored on the cloud database and

the tasks will automatically be marked up as completed. The major functionality that the application carries out is the proficient adding of members simultaneously and each of the added users can add in their allotted tasks status and finally verified by the admin. And the optimized functioning of the backend database connectivity which is carried out using Firestore.

Pointable Entities

- The maximum useful capability that the application includes out is the including of participants freed from price and with none external procedure makes the operating delicate and smooth because the team control situation will be accomplished effectively
- There is no specified limit for the cards and the lists created by the admin and the users so the versatility and the dynamic lead of the application will be highlighted here, overcoming the problem of limited slots of cards offered by the existing systems
- The cards or the lists are mutable so the work flow is efficient for projects consisting of large number of members and for bigger projects as well

Hardware and Software Requirement

Hardware Requirements -

- Processor: Minimum 1 GHz, 64-bit
- Memory (RAM): Minimum 8 GB required
- Hard Disk: Minimum 250 GB required

Software Requirement

- Operating System: Windows 8 & above Software Development Kit: Java JDK 11 & above
- IDE- Android Studio
- Database- Firestore

Project Design

Existing System

In most of the existing approaches present at this day and age, the choice of the tasking positions within the main activity mainly depends upon the number of users working for that task. That is without considering the significant relationship between the quality constraint and the size of the module itself. Plus they are also poor at resisting various kinds of statistical analyses.

Drawbacks in existing system

- All the existing systems do not offer functionality when there is no connect access. If the user is travelling and have to board the airplane, user will not be able to access any information on alternative platforms. Multiple Cards/ tasks add-on functionality is not available in existing systems
- Handling of multiple cards is very inefficient and

system crashes due to poor task management It is suitable for smaller tasks. People who've smaller initiatives and groups can honestly gain from existing machine. However, it can be an issue if the team grows and the challenge turns into more complex in nature

- Alternative options provide very less usability

Proposed System

This project aims of providing a multifunction-free and easy to use android application to handle multiple tasks/ projects parallely. The developed application will be having physical as well as cloud support for anytime storage and access of data by the user. One primary issue of the utility is to divide responsibilities in separate areas and imparting each with separate name.



Figure 3

Application Features

- Manage your responsibilities with different members effortlessly
- Each Member has all of the forums he is assigned to
- Each Board has all the lists with challenge playing cards
- Cards may be moved up and down within the listing
- Easily update consumer settings - set name, image and contact. Easily update cards - set label colour, assign members and add due date
- Get notification from the app when somebody assigns you for board

UML Diagrams

Data Flow Diagram (Level-1)

- Data Flow Diagram (Level-2)
- Use-Case Diagram

Conclusion

As a free product, Task Multiplexer is a high-quality task management device that can assist customers with finishing duties on time. Task Multiplexer permits customers to speak with board contributors via the usage of the commenting characteristic and through assigning members to playing cards. The capacity to assign due dates and combine those due dates into a private calendar is especially beneficial. Furthermore, thru the use of labels and due date notifications, Task Multiplexer lets in customers to get a visible snapshot of challenge development. We suggest Task Multiplexer to people coping with small to medium-sized tasks and groups at the private and expert levels.

Keep anyone accountable and by no means need to ask “who’s doing that” by using including participants to cards for their tasks and duties. They’re smooth to set, difficult to overlook (with reminders), oh-so-fulfilling to mark as “achieved.” No greater digging thru endless electronic mail chains to discover attachments. Just drag and drop them onto a card so the proper documents stay with the proper responsibilities. Your best tool to overpower overwhelming asks. Break huge obligations into small ones, take a look at things off the listing, watch that reputate bar goes to a hundred% complete.

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