

An Efficient Paperless Meeting Management and Appointment System Using Adequate Android Application

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Abstract: The scheduling and running of meetings is a challenge for every organization. The suggested system intends to create and implement a paperless appointment and meeting management system for corporate appointment systems, such as hospitals, universities, and corporate offices, manages meetings without paper. Via this software, all of the staff members and directors can schedule meetings with one another. No physical approach is required to schedule the meeting. This app allows any employee at a corporate office to schedule their own appointment. This program has two login methods. One of these is the admin login, when the system administrator sets up a user account for the admin. The term "An Admin" used in this application refers to the Directors and other senior executives of a corporate office. Via this app, an administrator may carry out a few specialized tasks like setting up a reminder for his daily or any other day's meeting or checking the availability of other administrators to arrange a meeting. can check the sending requests that they themselves have issued to other admins or users as well as the pending requests that other admins or users have sent. The results of this study also provide answers to problems that could arise throughout the manual meeting management and appointment procedure. To draw people and store their information in a secure database, many companies utilize QR codes. The solution's further development will make it possible to manage the system on the Android platform.

Keywords: Meeting Management, Appoinment System, Paperless, Smart, Android Application

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I. INTRODUCTION

A chief usually runs a meeting, and at the conclusion, minutes—records of the group's discussions—are produced. General meetings and special or exceptional meetings are the two types of meetings that fall within the corporate law. For these meetings to be legally valid, a quorum—a certain minimum number of members—must be present. The number of votes that the parties with assenting and dissenting opinions can mobilize determines the outcome [1]. Meeting time setup, monitoring for free time, sending and pending requests, lunch time setup, meeting time and date blocking system, and conference room booking system are significant aspects of this study. Users of this software can quickly arrange their meeting times and dates with one another. The totality of all service attributes that have an impact on users is measured by the service level. The level of service qualitatively evaluates the impact of variables like time, distance, and cost, which when combined with other variables, establish the kind of service that a specific facility offers to the user under the specified circumstances [2]. Conventional appointment systems are unable to shorten wait times. The likelihood of making a scheduling error with others is higher [3]. Also, it can be exceedingly challenging to find a person's free time for a meeting. To find out the desired person's availability, one needs first go to them. People avoid using this conventional system in today's environment. So, people require digital systems to reduce their time so that they can devote their precious time to more productive activities.

This study's major goal is to shorten the time it takes to schedule a meeting with a person. We've established the following goals for an appealing Android application: excellent usability, functionality, and user friendliness.

1. To set a reminder for the scheduled meeting time.
2. To confirm the authorities' usual free time before scheduling a meeting.
3. To keep track of profile data.
4. To continue sending and waiting for requests from and to other people.
5. To make booking one easier and faster.

6. To preserve digital records and meeting documentation
7. To convert a system to digital.
8. Maintaining user data on a platform and using it for different purposes.
9. To make the system secure and reliable
10. To make sure that installation and operation are user-friendly.

II. LITERATURE REVIEW

The usual technique for scheduling meetings and appointments nowadays is terrible and not time-oriented. Furthermore, by automating the scheduling process, an appointment app lowers human error. While the app just sets open time slots and delivers reminders, users enter their details. To name a few, GoToMeeting [4], Microsoft Live Meeting [5], Cisco WebEx [6], Adobe Connect Pro [7], Elluminate Live [8], etc. are among the commercial options that are now on the market. All of the aforementioned factors introduce different feature and service types, most notably in terms of how a fat or thin client architecture is implemented. One of the key ingredients for the new application's success will be the design of an innovative user interface that will give users a quick and easy way to enter and use the diverse information about meetings.

III. METHODOLOGY

A. Planning

The success of the overall strategic plan is significantly influenced by the implementation strategy. More importantly, however, sharing your strategic plan with all of your personnel and having them follow along with it can give your workforce a sense of ownership over the long-term direction of the business. Implementation plans of this study is shown in Fig. 1.

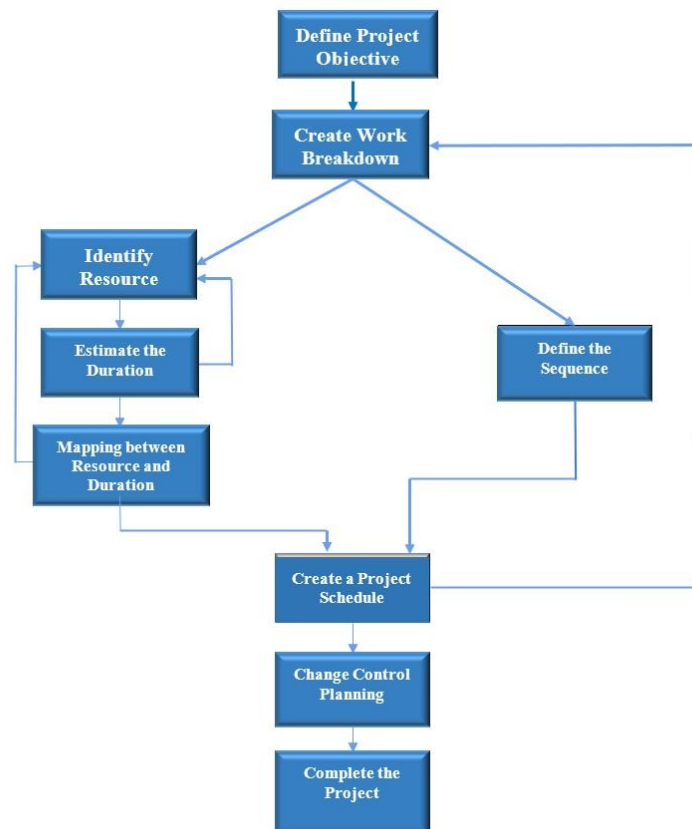


Fig 1. Overall Planning of this Study

The project's main component, resources, will help to develop a high-quality system that will meet the needs of the business. So, throughout the development phase, where the resources originate from becomes a crucial concern. Planning for resources is therefore crucial. Places for resources that are simple to develop will be assigned in this strategy. The resource allocation for this work is displayed in Table 1.

SL	TASK NAME	DURATION(Days)	Resource Name
1	Introduction	2	Analyst
2	Initial Study	3	Analyst
3	Literature Review	6	Analyst
4	Methodology	6	Analyst
5	Planning	4	Analyst, User
6	Feasibility Study	4	Analyst, Developer
7	Design Phase	4	Analyst, Developer
8	Deployment Phase	5	Analyst, Tester
9	Testing	1	Developer, Tester, User
10	Implementation	20	Analyst, Developer, User
11	Conclusion	1	Analyst

B. Operational Architecture

This program has two login methods. One of these is the admin login, when the system administrator sets up a user account for the admin. Operational architecture of this work is depicted in Fig. 2. Via this app, an administrator may carry out a few specialized tasks like setting up a reminder for his daily or any other day's meeting or checking the availability of other administrators to arrange a meeting. can check the sending requests that they themselves have issued to other admins or users as well as the pending requests that other admins or users have sent. The administrator can schedule his lunch hour so that anyone can send a request at that period. Administrators have quick access to a list of users and can make meeting requests. A great alternative is to send a group meeting request to the selected users. Another fantastic method for reserving a conference room for a group meeting is for the administrator to check the list of rooms already reserved by others and then reserve one that is open.

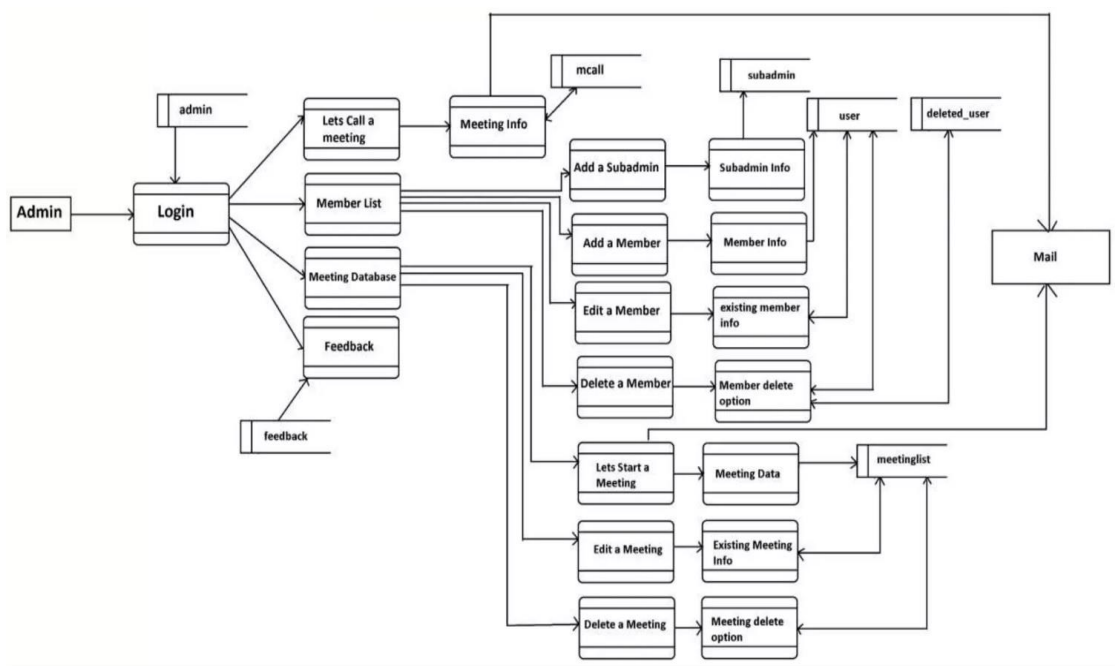


Fig 2. Overall Operational Architecture

By selecting his account option, Admin can get a complete list of his scheduled meetings and modify his account details from there. A user can view the names and photographs of all the admins on the main page. The user can view the administrators' detailed information by clicking on the photos, as well as his own daily meeting schedule underneath the list of administrators. When administrators or authorities are available for a meeting, users cannot check their free time. The chosen person can receive requests from users. Like the admin, the user can check his sent and pending requests. By selecting the "about us" link, they can view information about their office.

C. Design Module (E-R Diagram)

An ER diagram illustrates the connections between entity sets. An entity set is a collection of related entities, each of which may have properties. By demonstrating the relationship between tables and their attributes, DBMS defines an entity as a table or an attribute of a table in a database. The ER diagram displays a database's whole logical structure. The ER diagram of this study represent in Fig. 3.

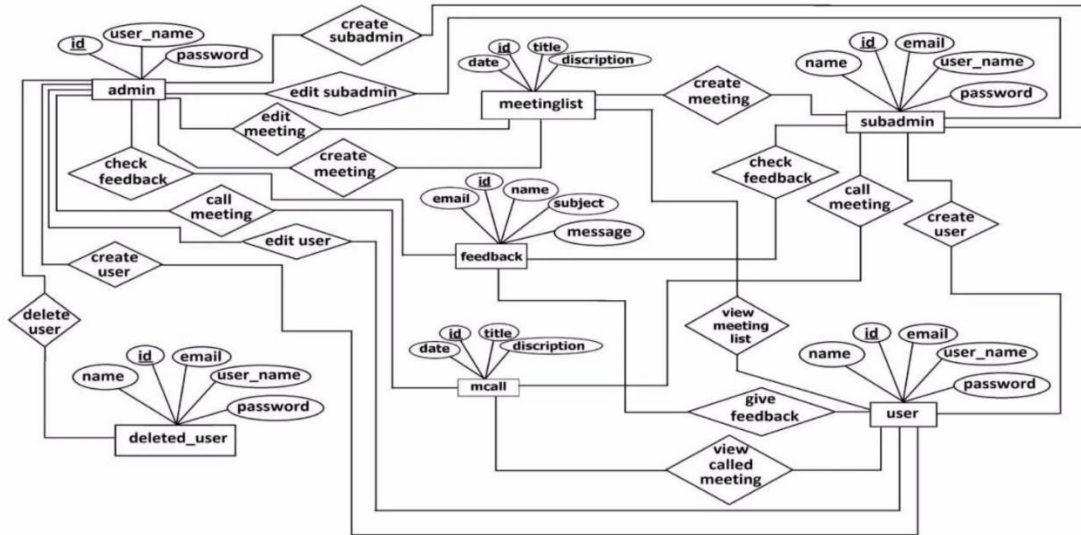


Fig 3. Entity- Relationship (E-R) Diagram

D. Technology Used

We require a variety of tools, components, and programming to carry out a project. To complete our project, we also used a few tools and components. We used android-based planning tools and components to carry out our application because it is an android-based application project. This is a brief description of the tools and components required to run the program.

Android Studio

Any type of Android application can be implemented using the well-known platform known as Android Studio. It provides the developer with amazing features to create an Android app [9]. It provides almost all of the components, tools, and design work necessary to quickly and successfully develop an Android application. As our application IDE, we used Android Studio. Developers favor Android Studio to construct many kinds of Android applications because it is an open source platform.

Emulator or Simulator

An application can be run on a physical device in which it is not implemented using an emulator or simulator [10]. The device executes the same code based on the actual device. We can use this on many Android and iOS device versions thanks to emulators or simulators.

Flutter SDK

The SDK is a crucial tool for creating Android and iOS applications. The simulator is included, along with all the design and component libraries needed for development.

Firebase

The most well-known live data set is Firebase. In order to save the client's data, we require a data set. To store and maintain the client data, we use Firebase as the main data set for our application. Also, we had to maintain information here. It continuously syncs the data with each related client in the application. If we build an application that works on platforms with iOS, Android, and JavaScript SDKs, the entire client uses continuous data set occurrence, and the client will afterwards receive the most recent data from Firebase.

IV. IMPLEMENTATION AND DISCUSSIONS

To the user, only the front-end design is visible. Hence, it ought to be pleasing to the eye. It should also be simple to operate and user-friendly. As far as we can, we're attempting to make the design simple, approachable, and Responsive.

A. Navigation Bar

Fig. 4 shows the reaction scheme of the syntheses of the derivatives of ibuprofen through the esterification reaction, which resulted in the production of 5 derivatives.

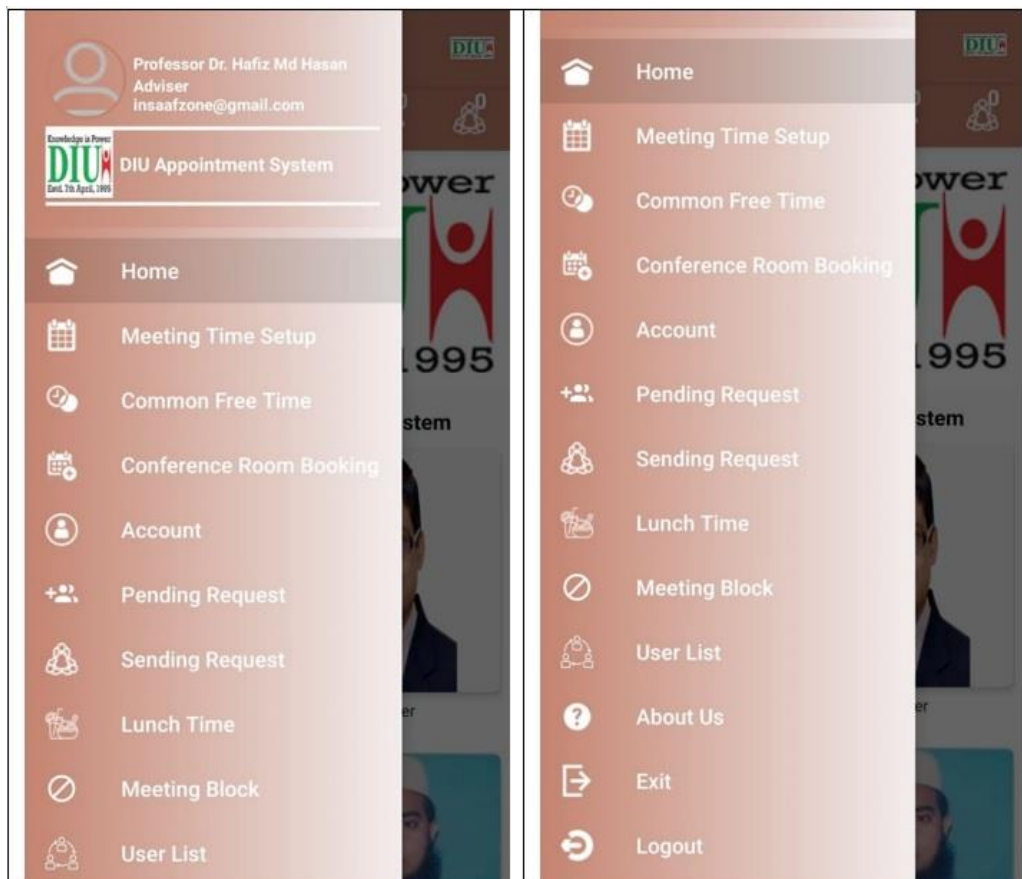


Fig 4. Navigation Bar

B. Sign Up/Login

Signup/Login has two pages. One is Login Page and Signup form page section. This page of Meeting Management and Appointment System is shown in Fig. 5.

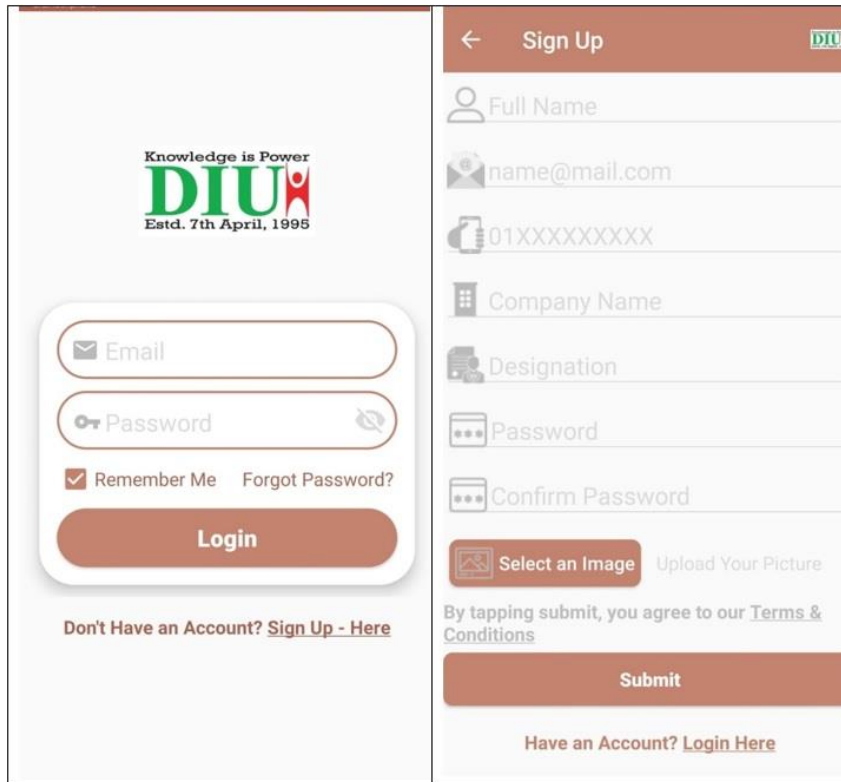


Fig 5. Sign Up/Login Form

C. Setup Meeting Time

If user will tap on “Meeting Time Setup” then it shows a page to setup self-meeting schedule, depict in Fig. 6.

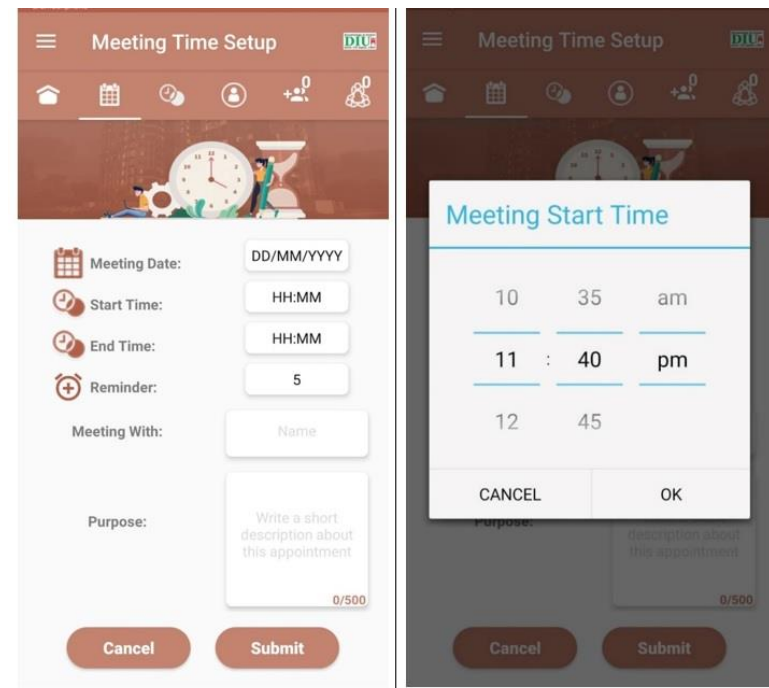


Fig 6. Meeting Time Setup

D. Meeting Room Booking

Authorities/Admin can reserve a suitable meeting room depends on its availability. From the See Booking List, admin can check the room which already booked or available, represent in Fig. 7.

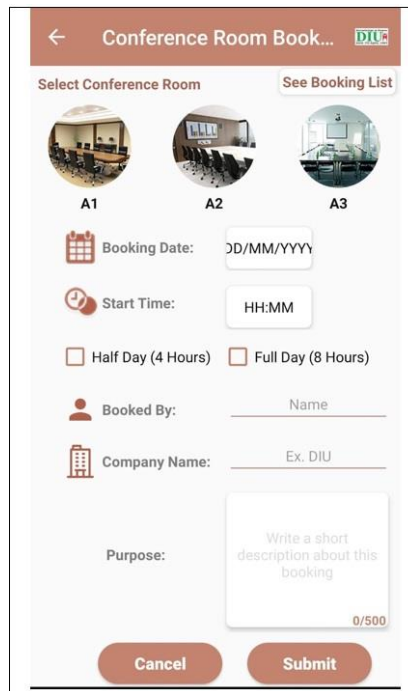


Fig 7. Meeting Room Booking

E. Lunch Time Setup

In this section admin can set up his/her lunch time so that users or other admin can see his available and unavailable slot of meeting, depict on Fig. 8.

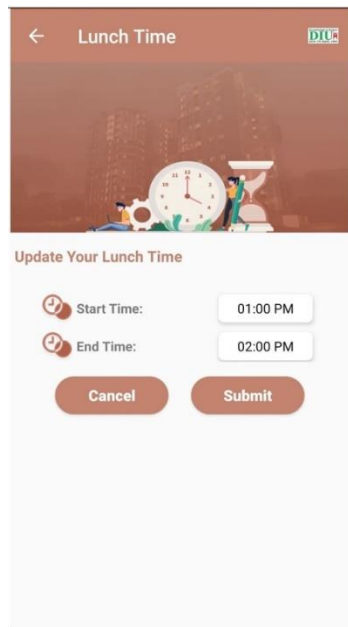


Fig 8. Lunch Time Setting

F. Meeting Blocking

Here we will show the meeting block section where only admins can block his schedule of meeting days in two way. Such as single day and another is multiple day booking system, depict in Fig. 9.

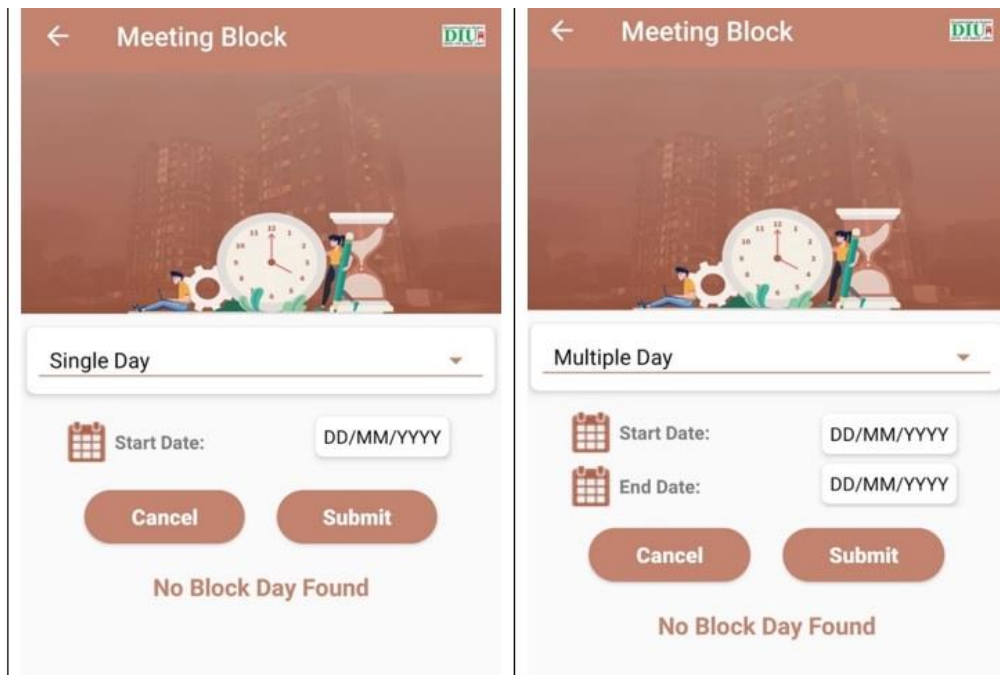


Fig 9. Meeting Blocking

V. EVALUATION

The application's final users are the ones who evaluate the system's performance. This application primarily has three types of users: current students, alumni, and admins or individuals acting on behalf of authorities. More than a thousand end users provided comments to help this application run better. This system's performance is shown in Fig. 10. End users provided input based on four key areas to gauge performance.

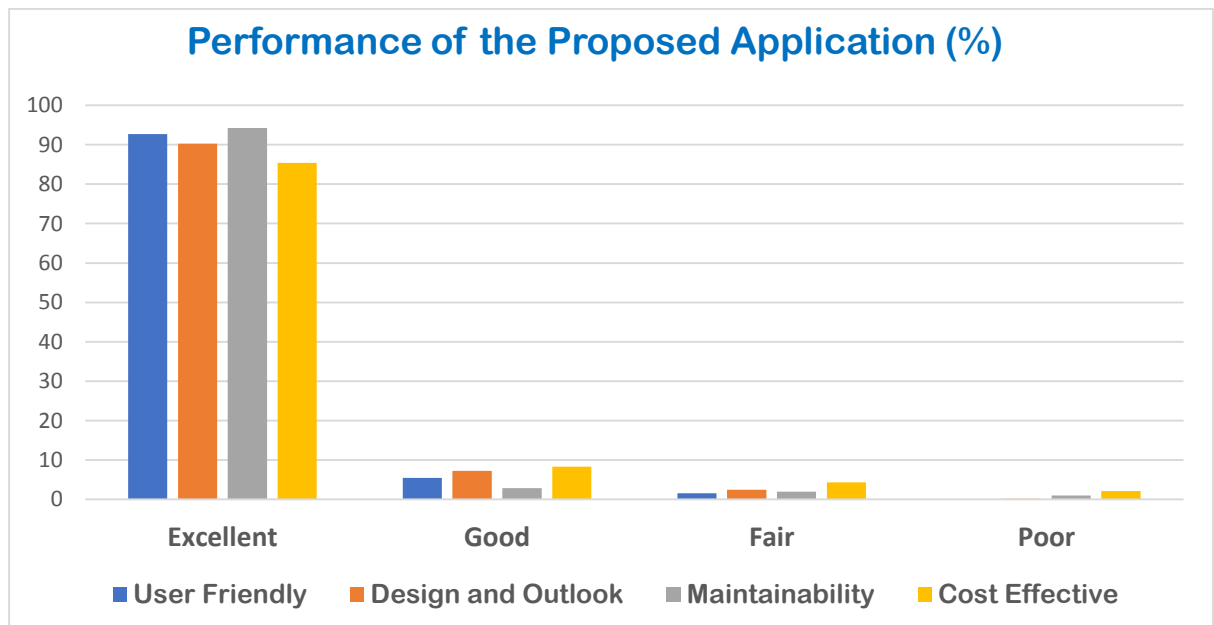


Fig 10. Performance of the Proposed System

VI. CONCLUSION

Based on logical presumptions, the results and outputs generated in relation to the specificity of the problem domain are expanded into wider concepts. Because it is an mobile application based project, the mobile application allows users to install it and input data. The user would find it quite beneficial to enter the needed information with such ease. Regardless of what he is typing, the user is mainly more worried about the validity of the data. It was created using the most well-liked trend among Android phone users. a user-friendly, expertly built application system that enables you to establish and promote various appointment types. We can say with pride that we created a project of this nature that works well for those who work for corporations. With this application, corporations will specifically grow. So, it was necessary to consider the requirement to construct this kind of project so that any type of Bangladeshi or person from another nation may connect with our appointment system. There are some limitations of our current system, which solutions will do for future development some data accuracy (data deprecation), lack of UI performance. Future development features are create this application for cross platform: create web application, advance navigation system option, add Nearby feature from the user feedback. improve data validation, improve UI performance.

Conflict of interest

There is no conflict to disclose.

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REFERENCES

- [1]. P. Thompson, A. James, and E. Stanciu, "Agent based Ontology Driven Virtual Meeting Assistant", *Future Generation Information Technology*, LNCS, Vol 6485, pp 51-62, 2010.
- [2]. L. D. Tran, A. Stojcevski, T. C. Pham, T. de Souza-Daw, N. T. Nguyen, V. Q. Nguyen, C. M. Nguyen, 2016. A smart meeting room scheduling and management system with utilization control and ad-hoc support based on real-time occupancy detection, in: 2016 IEEE Sixth International Conference on Communications and Electronics (ICCE). Presented at the 2016 IEEE Sixth International Conference on Communications and Electronics (ICCE), pp. 186–191. <https://doi.org/10.1109/CCE.2016.7562634> Azevedo, F.R. de, Leitão, A.C.L., Lima, M.A.A., Guimarães, J.A., 2007. Efficacy of natural products to control *Callosobruchus maculatus* (Fab) in stored Material e Métodos. *Revista Ciência Agronômica* 38, 182–187.
- [3]. Niederer, M., Schatten, A., 2009. Agent-based meeting scheduling support using mobile clients. *IEEE*, pp. 719–724. <https://doi.org/10.1109/ICADIWT.2009.5273904>.
- [4]. P. Thompson, A. James A and A. Nanos, "V-ROOM: Virtual Meeting System Trial," in *Proc 17th Int'l Conf. on Computer Supported Cooperative Work in Design (CSCWD)*, IEEE, 2013, in press..
- [5]. T. Wiggins, D. Swift, U. Mai, and R. Luechtefeld, "Acquiring professional skills: Virtual facilitator as model for team communication," *Proc. Frontiers in Education*, 2011, pp. S1C-1 - S1C-5.
- [6]. F. Roman, O. Mubin, and P. Dillenbourg, "ReflectWorld: A Distributed Architecture for Meetings and Groups Evolution Analysis," in *Proc. of the 10th Int'l Conf. Collaboration Technologies and Systems (CTS)*, 2012, pp. 389 – 396.
- [7]. N. Yankelovich, W. Walker, P. Roberts, M. Wessler, J. Kaplan, and J. Provino, "Meeting central: making distributed meetings more effective," *Proc. Conf. on Computer Supported Cooperative Work (CSCW)*, 2004, pp. 419 – 428.
- [8]. N. Rangarajan and J. Rohrbaugh, "Multiple roles of online facilitation: An example in any-time, any-place meetings." *Group Facilitation*, vol. 5, pp. 26 – 36.
- [9]. B. Campagnolo, C. A. Tacla, C. A., E. C. Paraiso, G. Y. Sato, and M. P. Ramos, "An architecture for supporting small collocated teams in cooperative software development," in *Proc 13th Int'l Conf. on Computer Supported Cooperative Work in Design (CSCWD)*, IEEE, 2009, pp. 264-269.
- [10]. M. Masli, W. Geyer, C. Dugan, and B. Brownholtz, "The design and usage of tentative events for time-based social coordination in the enterprise," 2011, p. 765

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