Study Master: Personalized Learning App

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Abstract*: It is a comprehensive application built to help students in planning, managing and scheduling academics. It acts as an online mentor which guides to get student dream grade by managing their time and syllabus. It offers a dynamic platform providing students with essential features required for achieving success, whether the students may be from various education levels, from high school to postgraduate studies. This innovative application caters to the diverse needs of students across various educational levels, from high school to postgraduate studies, offering a dynamic platform that integrates essential features for success.*

Keywords: Study Master: Personalized Learning App, App development, Automation, Case Study, Study management, Academic schedule, Academic resources, Roadmap

I. INTRODUCTION

There are several students who have their goals, but they lack a clear path to success due to which they are not able to achieve their goal. This app provides students with a road map and essential study materials to turn their dreams into reality. To reach a goal an individual needs a proper plan. This is where a lot of students fail to reach their goal just because they don't have a proper plan. It is must for a student to have a plan or a road to walk on through which it is possible to attain the desired goal. Also, the confusion of students related to their subjects, topics to study, and the way and method to learn is increasing day by day. It also consumes a much of the time gathering the study resources or material.

II. OBJECTIVES

Following are the objectives of the project: -

- The app generates a personalized road map for each student, based on their current level, their goals, and the amount of time they have available to study.
- The road map includes a timeline for completing each task, as well as recommendations for resources and learning strategies.
- The app also provides students with access to a variety of educational resources, including textbooks, practice problems, and video tutorials.
- The app also tracks the student's progress through their road map and provides feedback on their progress.
- This application can help students to manage and schedule their time effectively.

III. LITERATURE REVIEW

Research by Mayer and Moreno (2003) emphasizes the importance of multimedia learning, highlighting the benefits of incorporating visual and auditory aids in study materials to enhance comprehension and retention

Freeman et al. (2014) conducted a meta-analysis of active learning strategies in STEM disciplines, revealing significant improvements in student performance and retention compared to traditional lecture-based approaches.

Effective mentoring requires a range of skills, including active listening, constructive feedback, and goal setting. The work of Allen et al. (2004) identifies key competencies for mentors, such as empathy, cultural competence, and coaching abilities, essential for guiding diverse student populations.

The implementation of self-regulated learning strategies, as outlined by Zimmerman (2002), empowers students to take control of their learning process, fostering autonomy, resilience, and adaptive expertise.

Holistic mentoring approaches, as advocated by Crisp and Cruz (2009), encompass not only academic support but also personal and professional development, fostering mentees' holistic growth and self-efficacy.

IV. SCOPE

- **Growing Education Market:** The education industry continues to grow, with an increasing number of students seeking additional support and resources to excel academically. This app can cater to this expanding market.
- **Affiliate Marketing:** Partner with educational publishers, bookstores, or other relevant businesses and earn a commission on sales generated through your app's recommendations or links to their products.
- **Corporate Partnerships:** We can Team up with schools or companies to create special versions of the app just for their students or employees.
- **Study Resources Repository:** Provides study materials including notes, textbooks, articles, and videos.
- **Study Planner and Task Management:** Enable students to create study schedules and set goals.

V. NEED OF WORK

Currently student study on their own which is that they study manually themselves. Some of them join coaching classesand even attending online classes as per the student prefers to study. So, there is no specific app which will provide students with a proper roadmap and guidance in study.

VI. PROBLEM STATEMENT

Students dream of achieving good grades in exam but they fail to achieve good grades in exam because they don't have a clear plan and study routine which they can follow and they don't get proper guidance. Most of the Students areconfused about: -

- What to study?
- When to study?
- How to study?

VII. PROPOSED SYSTEM

Many study apps utilize algorithms to personalize learning experiences based on individual strengths and weaknesses.This adaptive approach ensures that students receive content tailored to their needs, helping them to grasp concepts more effectively. Study apps can offer access to a wide range of educational resources, including textbooks, videos, articles, and practice questions, providing students with comprehensive study materials in one convenient platform. Many study apps offer free or affordable access to educational content, reducing the financial burden associated with purchasing text-books or enrolling in traditional courses.
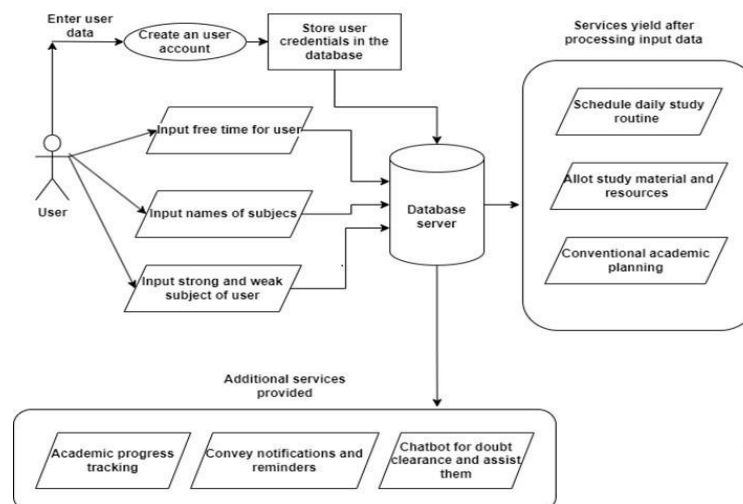

Fig 1. Data Flow Diagram (DFD)

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The Fig 1. shows a Data Flow Diagram (DFD) for an Android-based application i.e. 'Study Master: Personalized Learning App' that illustrates the flow of data between various components. It showcases how data moves from user inputs to database operations and generates a proper roadmap and schedule after performing procedure on the given user input Let's go through each module and its use in the academic schedule: -
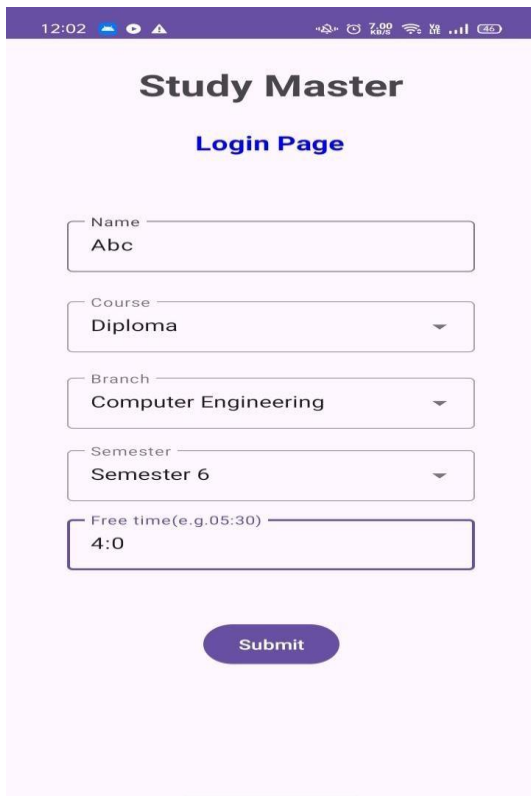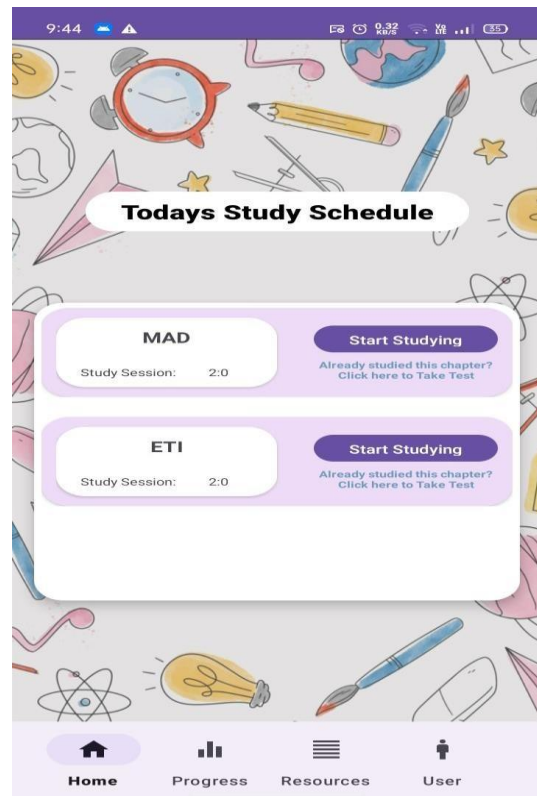
Login Activity and Home Fragment: -

Fig 2. Login Page   Fig 3. Daily Schedule Page

The above Fig.2 depicts the login page of the application which includes Name, Course, Branch, Semester and free time of the user/student.

Also, the Fig.3 displays the daily schedule which guides the student about the subjects which the student should study for each respective day.

Timer Activity and Progress Fragment: -
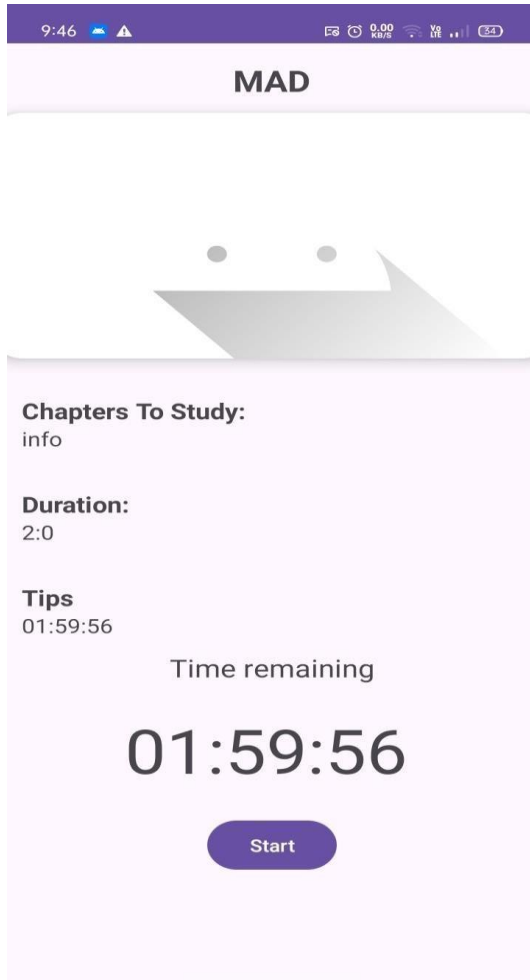

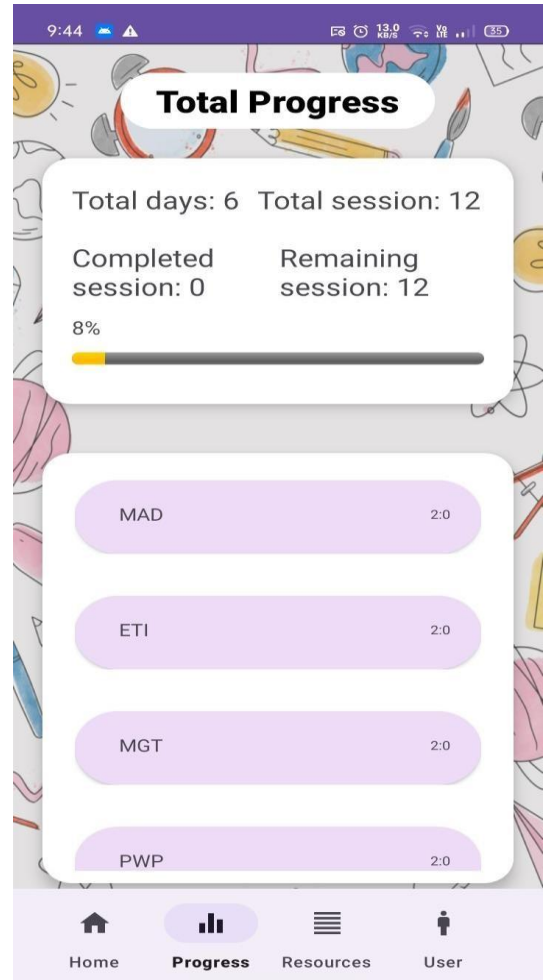<div align="center">Fig 4. Timer Activity   Fig 5. Total Progress</div>

The above Fig 4. depicts the Timer Activity which runs the timer for the specified subject for which the student should study until the time gets completed.

The Fig 5. shows the total progress of the student which he/she has made which includes total days, total sessions to be completed, completed sessions and remaining sessions and also progress bar which tracks and displays the progress as per the marks scored in the test attempted

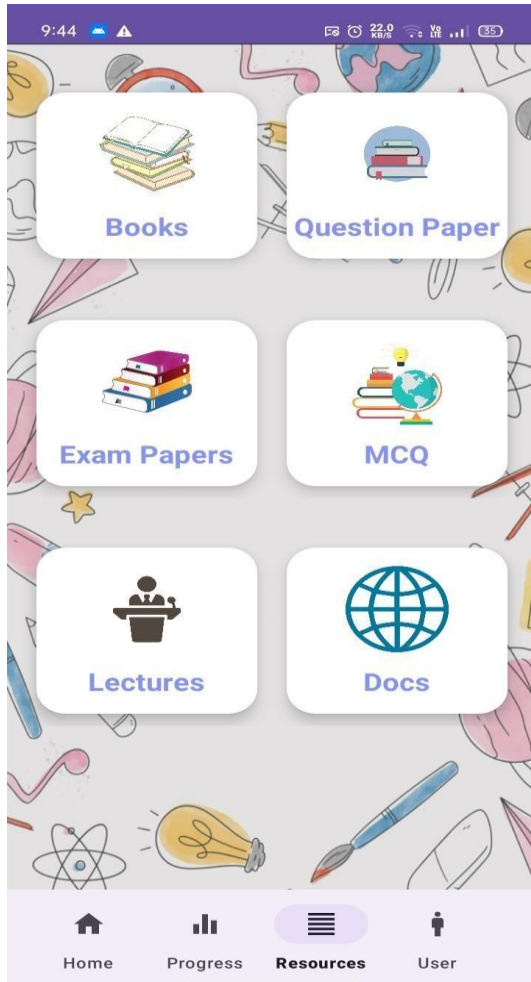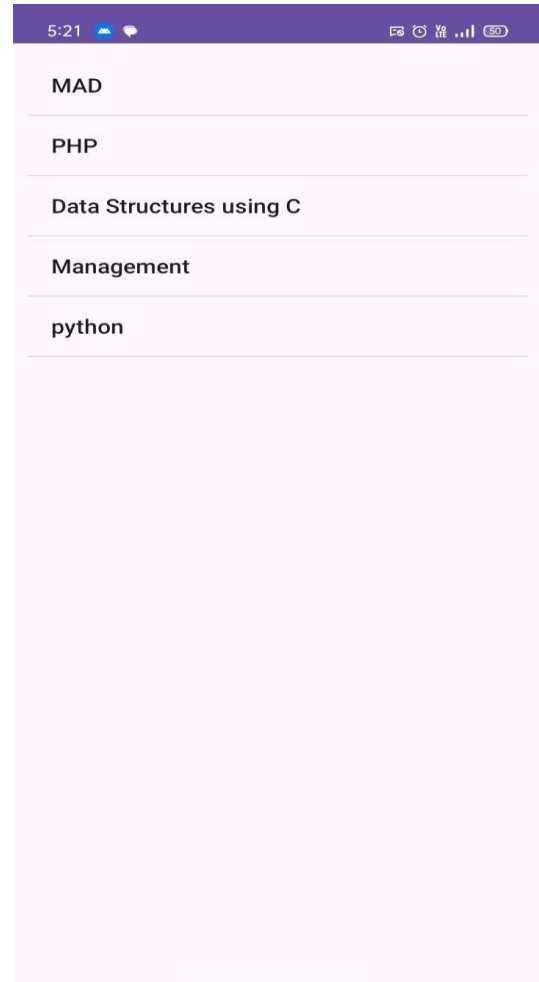**Resource Fragment and Sub-resource Activity: -**

Fig 6. Resource Fragment

Fig 7. Resources as per subject

The above Fig.6 displays different resources or study materials provided in the app for students like books, question paper, exam papers, MCQ, lectures and documents.

The Fig.7 shows resources provided for different subjects, when the particular resource section from app Fig.6 is clicked or viewed. For each resource type as required contains different study materials as per the type of resource is tapped

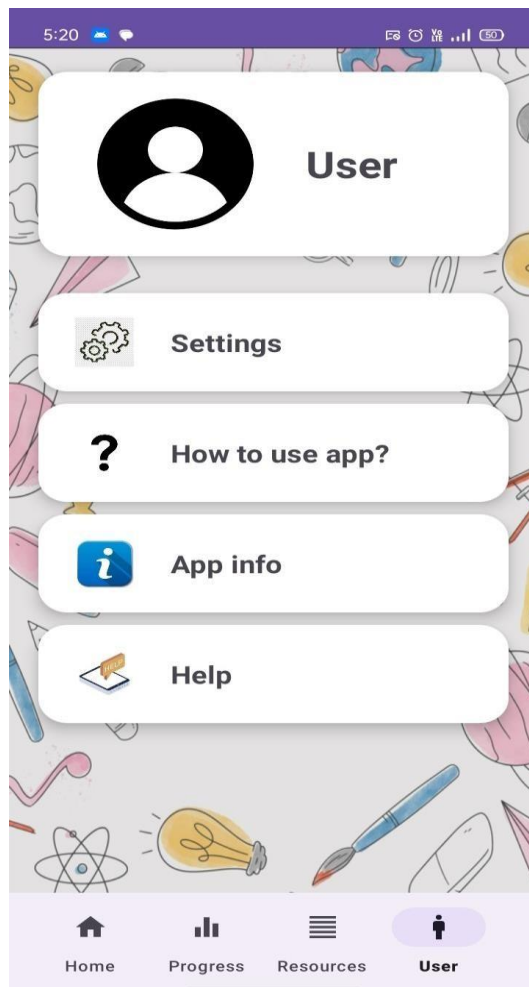**Content Activity and User Fragment: -**

Fig 8. Content as per subject

Fig 9. User Fragment

The above Fig 8. displays content which is information or data for that specified subject when it is clicked. It displaysthe web content which the student can refer for his/her study routine or schedule.

The Fig 9. shows the User Fragment which displays the information required for user and help for any problems or queries faced by the user while using the app. It includes various activities like Profile Page, Settings, how to use app, App Info and Help

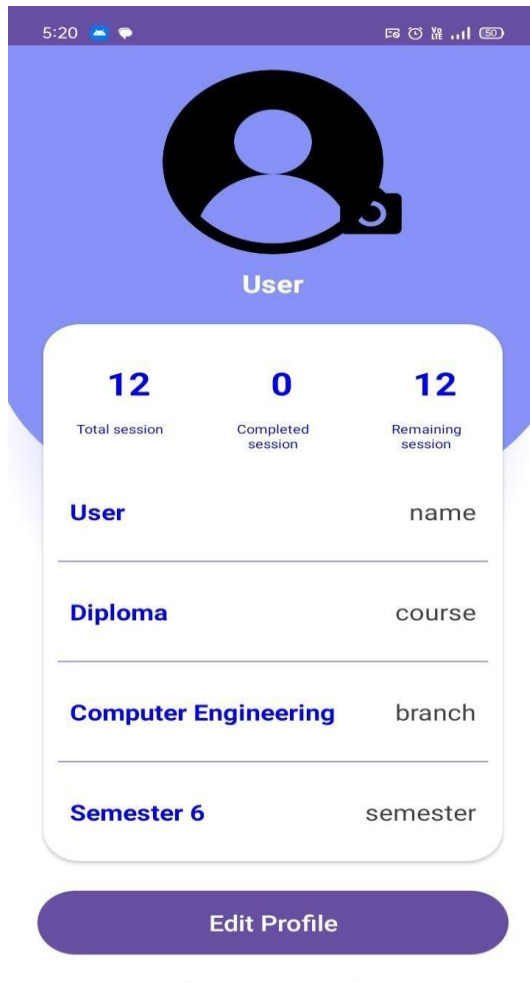**User Profile and App Info Activity: -**
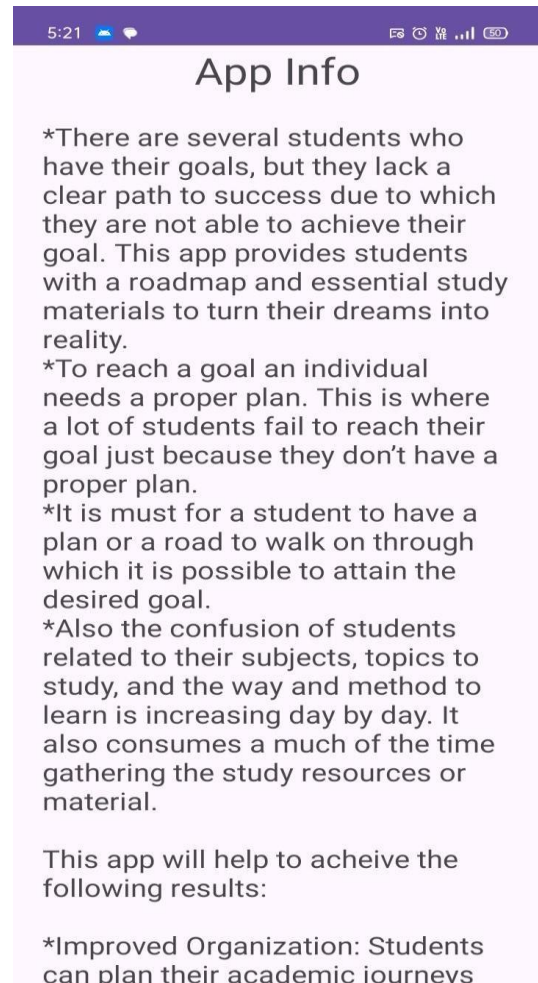

Fig 10. User Profile

Fig 11. App Info

The above Fig10. which is User Profile Activity which displays the information of the user who has registered to the application which is being used. It includes profile image and other information like total session, completed session, remaining session, Name, Course, Branch and Semester of the registered user while login.

The Fig 11. is App Info Activity which displays the information about the app. The reason behind the creation of thisapp, problems faced by everyday student and how this app will help to achieve the goals and vision of this students
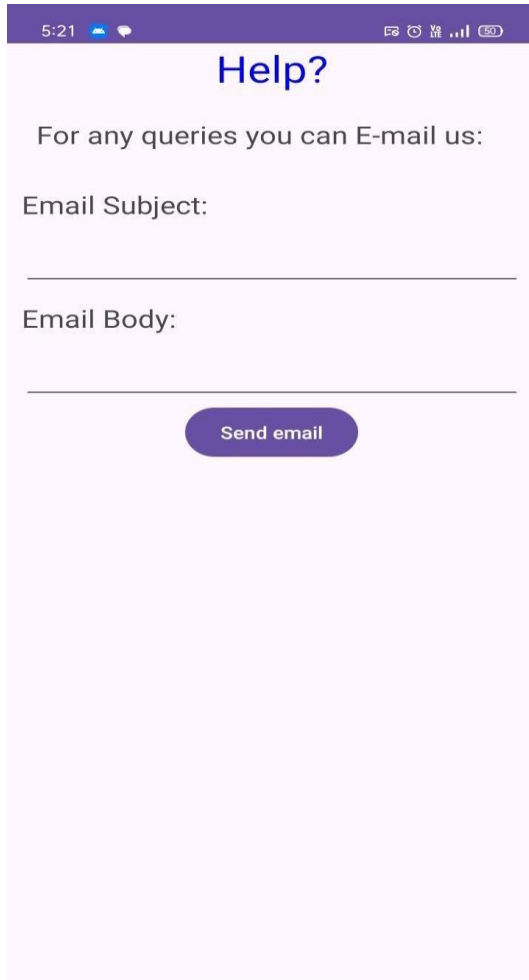
Help and MCQ Activity: -
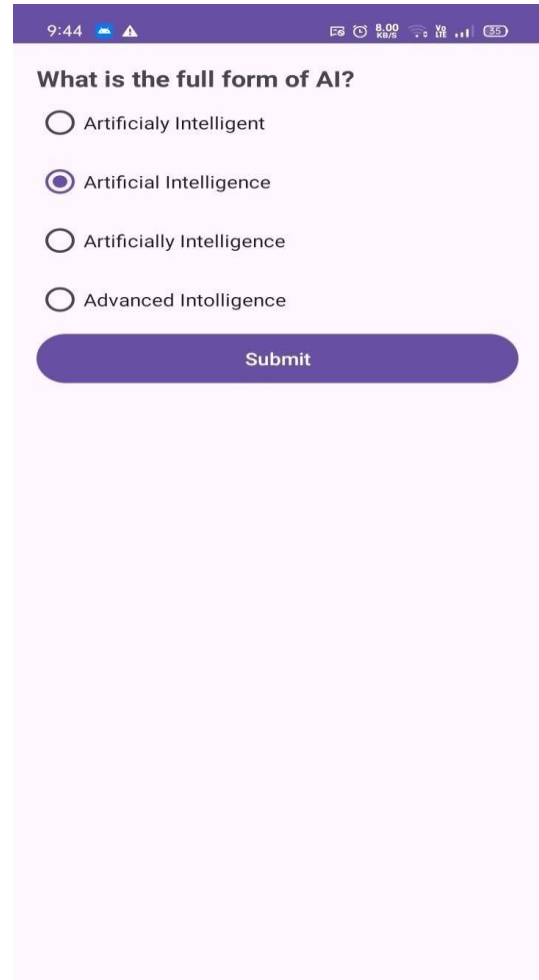

Fig 12. Help Activity

Fig 13. MCQ Activity

The above Fig 12. depicts the Help Activity which will help user to send an Email to the app developer for any query or problems faced by the user or even about any suggestion related with the app.

The Fig 13. is the MCQ Activity which will conduct the MCQ test of the user after completing of his/her each study session. This will be helpful for understanding the performance and score of the user by taking their test and tracking the progress of them.
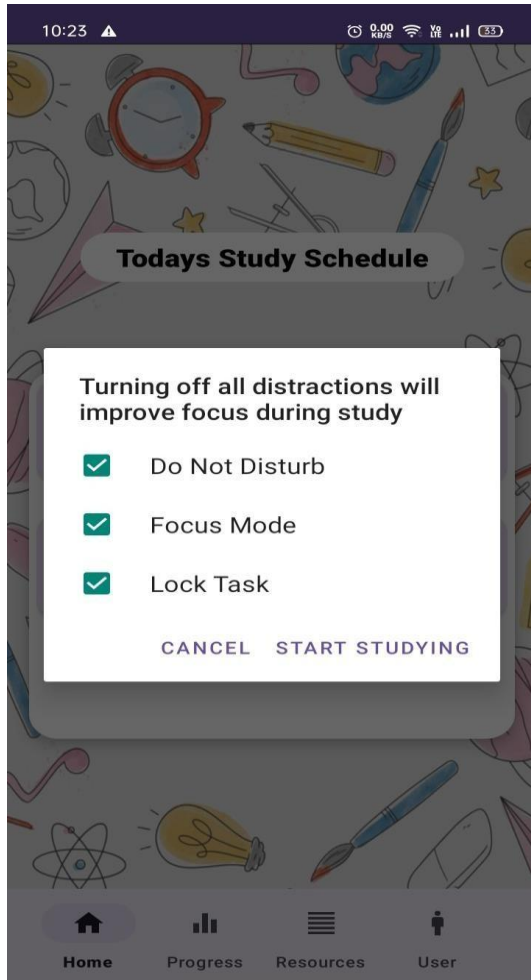
Dialog box: –

Fig 14. Turn off distraction
Fig 15. Test score

The above Fig 14. is used in the Home Fragment Fig 3., when the user clicks on 'Start Studying', which displays the Dialog box asking user to turn off distractions by checking the options (Do Not Disturb, Focus Mode, Lock Task) so that user can continue his study without any distraction. After clicking the 'START STUDYING' button of the dialog box it will start the Timer Activity Fig 4.

The Fig 15. also depicts the MCQ Activity but it displays the total score of the user after giving the test after attemptingall the questions of the test. It displays the total score which user has scored in the test which he/she has attempted
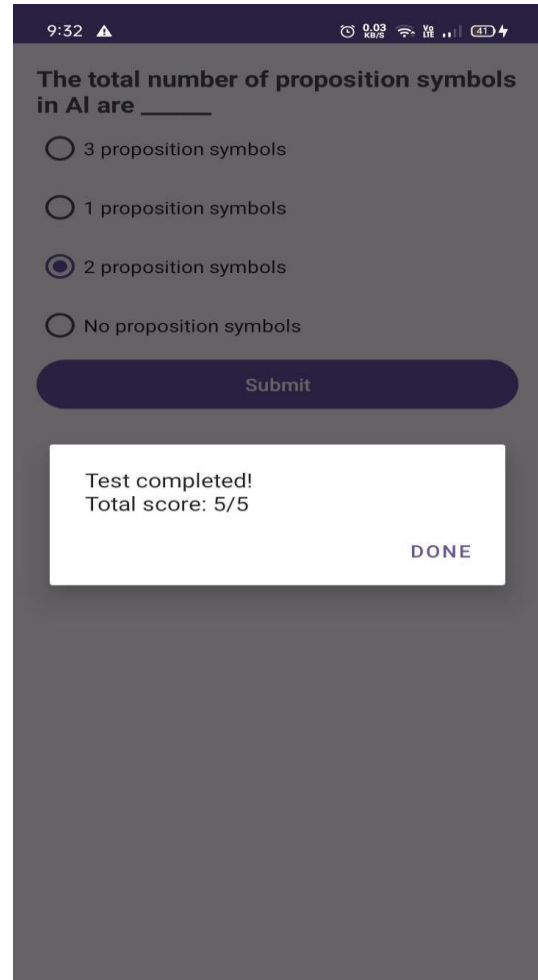
VIII. SYSTEM REQUIRMENTS

A. Hardware Requirements

• Minimum Disk Space: 8 GB of available disk space minimum (IDE + Android SDK + Android Emulator)

• Minimum memory: 8 GB RAM or more.

• Processor: x86 64 CPU architecture; 2nd generation Intel Core or newer, or AMD CPU with support for a Windows Hypervisor.

B. Software Requirements

• Software tool: Android Studio

• Database: SQLite
• Language: Java, XML
• Operating system: Windows 10

C. Android Device Requirement

• Processor: At least a dual-core processor, ideally a quad-core processor or higher for smoother performance.
• RAM: Minimum 2GB RAM for basic apps, but 4GB or more is recommended for apps with higher functionality.
• Storage: Minimum 8GB of internal storage space for the operating system and apps, but 16GB or more is preferable for storing user data and media.
• Display: Screen resolution of at least 720p (1280x720) for adequate display quality.

IX. CONCLUSION

The project concludes that the application developed can be used by numerous students for their academic studies and scheduling their work. Also, this application will solve the problems of students like confusion, no study plan and schedule, absence of guidance and will make them able to score excellent grades in their academics. By providing accessibility to educational resources, personalized learning experiences and cost-effective alternatives, these app revolutionize the way students approach studying and learning.

X. FUTURE SCOPE

1. AI-Powered Personalization: Study apps will likely leverage artificial intelligence (AI) algorithms even further to provide increasingly personalized learning experiences.
2. Integration with Internet of Things (IoT) Devices: Study apps may integrate with IoT devices such as smart pens, tablets, or wearables to capture real-time data on student interactions and physiological responses during studying. This data can inform adaptive learning strategies and improve understanding of student engagement levels.
3. Blockchain for Credentials and Verification: Utilizing blockchain technology, study apps may offer secure and decentralized systems for verifying academic credentials, certificates, and achievements.

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