

A Study of Mobile Application 'PRAGATI'

Souvik Paul¹, Aditya Sinha², Esha Parui³, Simran Agarwal⁴, Debdip Dutta⁵, Amesha Shaw⁶

Assistant Professor, BCA Department, The Heritage Academy, Kolkata, India¹

Student, BCA Department, The Heritage Academy, Kolkata, India^{2,3,4,5,6}

Abstract: In today's digital age, where technology is at the forefront of our daily lives, learning has become more accessible than ever before. With smart phones and tablets being a staple for most people, the development of tutorial apps has revolutionised the way people approach learning. A tutorial app is a software application designed to provide educational content and guidance to its users. Tutorial apps can be used to learn a wide variety of subjects, ranging from languages, mathematics and programming. These apps offer a unique and personalised learning experience that is tailored to the user needs and learning style. Tutorial apps use different methods of teaching, including interactive exercises, quizzes, games, videos, and audio lessons, to make learning engaging and fun.

Keywords: Improved Learning, Convenience and Accessibility, Personalised Learning, Increased Engagement, Real-time Feedback, Better Retention, Cost-effective Learning.

I. INTRODUCTION

Pragati is to provide users with a convenient, personalised, and engaging platform for learning various subjects and skills. The app aims to make learning accessible to a wider audience by removing barriers such as time and location constraints, and to provide a cost-effective solution for education. The app utilises interactive methods such as quizzes, games, videos, and audio lessons to make learning more engaging and motivating, and tracks user progress to provide customised feedback and guidance. Overall, the objective of a tutorial app is to provide users with a flexible and effective means of expanding their knowledge and skills in a convenient and engaging manner.

II. OUTCOME OF THE PROJECT

Android based project includes different ideas. Some of the outcome of the project includes following points.

A. Improved Learning

A tutorial app provides learners with a structured and engaging learning experience. It helps learners to acquire new skills and knowledge in a fun and interactive way. With the use of multimedia elements, the app can explain complex concepts in a simplified manner, making it easier for learners to understand.

B. Convenience and Accessibility

A tutorial app can be accessed at any time and from any location, making it convenient for learners who have busy schedules or limited access to traditional learning resources. It allows learners to learn at their own pace, in their own time, and from the comfort of their own devices.

C. Personalised Learning

A tutorial app can be tailored to the needs and preferences of individual learners. It can adapt to the learner level of knowledge and skill, providing a personalised learning experience that meets the learner specific needs.

D. Increased Engagement

A tutorial app can increase learner engagement by incorporating gamification elements such as badges, rewards, and leader boards. These elements motivate learners to complete tasks and achieve learning objectives, making the learning process more engaging and enjoyable.

E. Real-time Feedback

A tutorial app can provide learners with real-time feedback on their progress and performance. This feedback can help learners to identify areas where they need to improve and take corrective action to achieve their learning goals.

F. Better Retention

A tutorial app can help learners to retain information better by using multimedia elements such as videos, images, and interactive quizzes. These elements help to reinforce learning and make it easier for learners to recall information when needed.

G. Cost-effective Learning

A tutorial app can be a cost-effective way of delivering learning content compared to traditional classroom-based learning. It eliminates the need for expensive textbooks, training materials, and travel costs, making it an affordable option for learners.

In summary, a tutorial app can provide learners with improved learning, convenience, and accessibility, personalised learning, increased engagement, real-time feedback, better retention, and cost-effective learning. These Outcomes make a tutorial app an effective and valuable tool for learners looking to acquire new skills and knowledge.

III. WORKFLOW OF THE PROJECT

This Document plays a vital role in the development life cycle (SDLC) as it describes the complete requirement of the system. It is meant for use by the developers and will be the basic during the testing phase. Any changes made to the requirements in the future will have to go through a formal change approval process. INCREMENTAL MODEL was being chosen. The developer is responsible for:-

- Developing the system, which meets the SRS and solving all the requirements of the system?
- Demonstrating the system and installing the system at the client's location after the acceptance testing is successful.
- Submitting the required user manual describing the system interfaces to work on it and also the documents of the system.
- Conducting any user training that might be needed for using the system.
- Maintaining the system for a period of one year after installation.

IV. FUNCTIONAL REQUIREMENTS OF THE PROJECT

The modules used in this software are as follows:

A. LOG IN:

Users can login into their account with a unique password for borrowing books, returning books and also can manage their account.

B. SIGN UP:

New users can sign up into the application by creating a new account with a new unique password.

V. NON-FUNCTIONAL REQUIREMENTS OF THE PROJECT

A. Usability Requirement:

The system shall allow the users to access the system from any Android device, no special training is required. The system is user friendly and the system is written in simple English.

B. Availability Requirement:

The system is available 100% for the user and is used 24 hours a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

C. Accuracy:

The system should accurately provide real time information taking into consideration of various issues. The system shall provide 100% access reliability.

D. Performance Requirement:

The information is refreshed at regular intervals depending upon whether some updates have occurred or not. The system shall respond to the member in less than seconds.

E. Security Requirement:

System will use a secured database and the system will have different users and each user has different types of constraints.

- F. Reliability Requirement:** The system has to be 100% reliable due to the importance of data and the damages that can be caused by incorrect data. The system will run 7 days a week and 24 hours a day.

VI. USER INTERFACE DESIGN

User interface design (UID) or user interface engineering is the design of user interfaces for machines and software, such as computers, home appliances, mobile devices, and other electronic devices, with the focus on maximising the user experience. The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals (user-centred design).

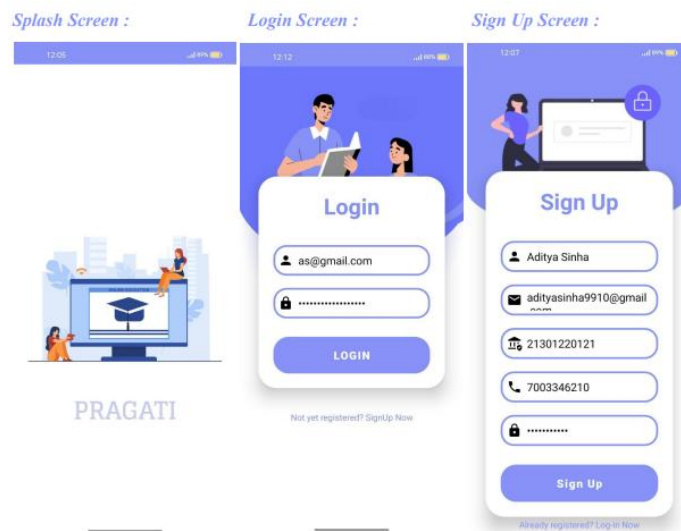


Figure 1: Interface Screen of 'PRAGATI'

Good user interface design facilitates finishing the task at hand without drawing unnecessary attention to it. Graphic design and typography are utilised to support its usability, influencing how the user performs certain interactions and improving the aesthetic appeal of the design; design aesthetics may enhance or detract from the ability of users to use the functions of the interface. The design process must balance technical functionality and visual elements (e.g., mental model) to create a system that is not only operational but also usable and adaptable to changing user needs.

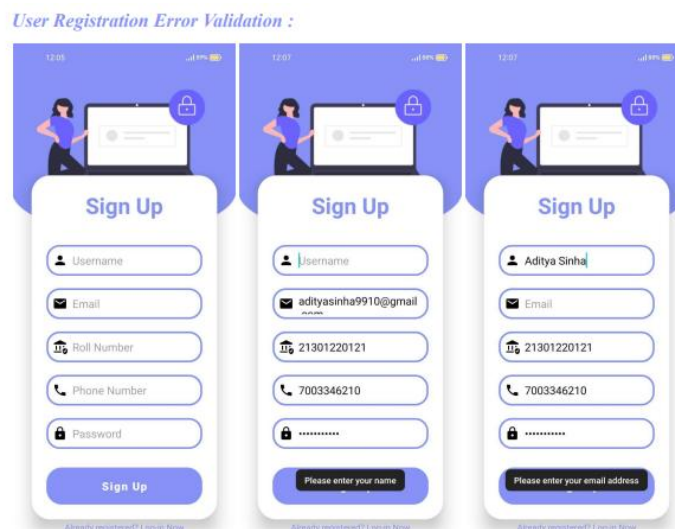


Figure 2: User validation and Registration Page

Interface design is involved in a wide range of projects from computer systems, to cars, to commercial planes; all of these projects involve much of the same basic human interactions yet also require some unique skills and knowledge. As a result, designers tend to specialise in certain types of projects and have skills centred on their expertise, whether that be software design, user research, web design, or industrial design.

Home Screen :

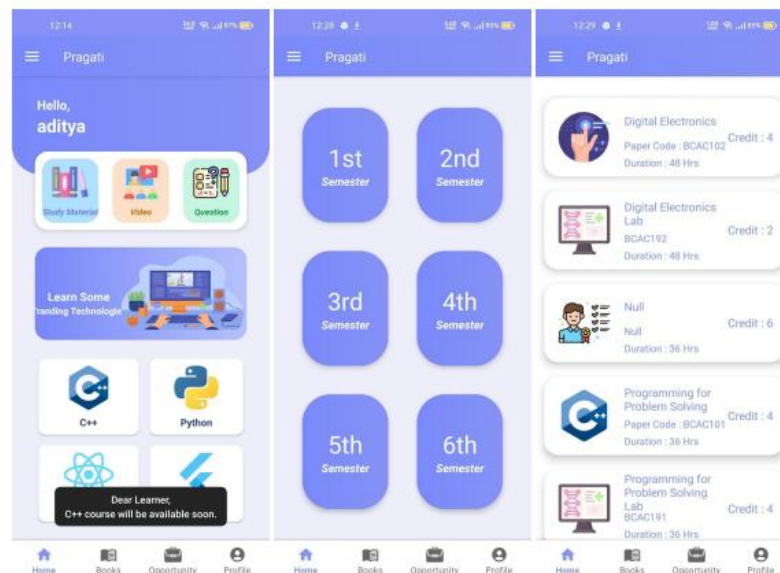


Figure 3: Home Screen with semester wise subject

VII. RESPONSIVE APPLICATION

We have designed a fully responsive app with the help of XML, Java, and Java. Nowadays smart phones, tablets and other gadgets are most widely used and every user would fancy all web activity to be done through those gadgets. Hence, we have come forward with this idea of a fully responsive app with a responsive menu which automatically fits the app in any screen size and readjusts its components as and when required, be it smart phone, tablet, or any other gadget.

VIII. SYSTEM SECURITY MEASURES

A. Database Security:

System security measures are meant to be provided to make your system reliable and secured from unauthorised users may create threats to the system. So, you should follow some security measures. We have used security levels at the database level and at system level.

B. System Security:

If we talk about the system security in our proposed system, we have implemented it with the help of maintaining the session throughout the system's use. Once a user has disconnected the internet, they will not be able to access the app.

IX. FUTURE SCOPE

Our project's scope includes creating an administration application that will act as a foundation for a number of features aimed at improving the learning experience for our users. Future for the application include the addition of note-sharing features that will enable users to easily share and collaborate on PDF books and documents. Additionally, we intend to put in place an automated attendance system that will make it simpler for faculty and students to track attendance. Our software will have an anonymous doubt-solving system, which will let users ask and respond to queries without disclosing their names, to make things even easier. We also intend to include the development of tests and assignments, giving students a fun and interactive way to assess their knowledge and reach their full potential. Our goal for the app is

to build a thorough learning platform that will transform how students and professors communicate and work together. We want to differentiate our app from other ones on the market by offering a seamless and cutting-edge educational experience with the help of these features.

X. CONCLUSION

Pragati is an online educational tutorial app designed to provide a comprehensive learning experience for students of Makaut University. The app allows users to sign in, create an account, and access trending courses or their own syllabus, including notes, previous year question papers, and video lectures. The bottom navigation bar provides access to other features, such as the library, job opportunities, and profile, while the sidebar offers notices, college faculty contact details, support, and logout options. Overall, Pragati aims to make learning more accessible and convenient for Makaut University students by providing a one-stop-shop for all their educational needs. The app is constantly evolving to incorporate new features and technologies that enhance the user experience and support student success.

REFERENCES

- [1] A book "Android Studio 3.0 Development Essentials" - Android 8 Edition by Neil Smyth.
- [2] Ammar, A., &Palaniappan, R. (2020). Design and development of a mobile learning tutorial app for mathematics. International Journal of Emerging Technologies in Learning, 15(10), 74-89.
- [3] <https://developer.android.com/docs> (last accessed on 23/02/2023 at 8:30 pm)
- [4] <https://stackoverflow.com/questions/tagged/android> (last accessed on 23/04/2023 at 8:30 pm)
- [5] Building Android Apps: The Complete Android Oreo Course |Udemy (last accessed on 23/04/2023 at 8:30pm)
- [6] <https://firebase.google.com/docs/firestore/> (last accessed on 23/04/2023 at 8:30 pm).