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Department of Computer Science and Engineering (CSE)
Group No. 02

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Course Title: **Mobile and Ubiquitous Computing Sessional**

Project Name: NoteKhata App

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ABSTRACT

We all are aware of the fact that smartphones have become a common feature of student's lifestyles in present times and with smartphones comes an endless number of platforms of entertainment. These platforms consume a lot of precious time of students, therefore this pinch of change in the form of e-learning apps has been welcomed with open arms from all the students. E-learning apps have shifted their mind towards learning important stuff that will help them out in their higher studies and life in general.

NoteKhata is concerned with the analysis, design, development, implementation and evaluation of an e-learning management system to provide a user friendly environment for prospective students to acquire knowledge at any educational level and to bridge the gap between teachers and students.

ACKNOWLEDGEMENTS

In completing this graduate project we have been fortunate to have help, support and encouragement from many people. I would like to acknowledge them for their cooperation.

First and foremost deeply thankful to our university se teachers for their wonderful guidance during this project work in field of e-learning. We are also thankful for their continuous feedback and encouragement throughout this project work. Their broad knowledge and hardworking attitude has left us with very deep impressions and they will greatly benefit me throughout our life.

We would like to thank each of our group members for their dedication and support throughout this project work.

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INTRODUCTION

1.1 INTRODUCTION

E-learning mobile apps have not only been for the growth of students but e-learning apps also take teachers under their consideration. It is true that e-learning has proved to be hugely beneficial for the students but that is not the whole picture. These e-learning apps have also helped the teachers to grow leaps and bounds.
Since there was a shift in the method of teaching with the discarding of physical classes and acceptance of virtual online classes, educators needed little tweaks in their style of teaching. E-learning apps have come a lot handy in their pursuit of learning the new methods of teaching.

1.2 OBJECTIVES

The major aim of Notekhata app is enhance the quality of learning and teaching. Meet the learning style or needs of students. Improve the efficiency and effectiveness. Improve user-accessibility and time flexibility to engage learners in the learning process. The major objectives are-

- NoteKhata saves time and money. E-learning is also cost-effective; companies save a substantial amount on the travel and accommodation costs of both learners and instructors, as well as the venue and materials.
- NoteKhata leads to better relation. E-learning tools enable learning designers to make content interactive. The more engaging the content is, the better the learners remember information.
- NoteKhata is consistent for learner. Online learning provides consistent and standardized training every time. Each learner goes through the same experience regardless of when and where he or she takes the course.
- NoteKhata offers personalization. E-learning makes it possible to cater to individual needs. It allows learners to choose their learning path and navigate at their own pace. When they decide what to learn and when, they remain invested in the course.
- NoteKhata is scalable. The more learners take the course, the faster you can write off the expense.

1.3 MOTIVATION

Motivation, simply put, is the reason one has for doing something. Consequently, learning motivation is the reason, or the desire, for learning. And in our case, in the E-learning universe that is, learning motivation is the reason learners need in order to fully experience our E-learning courses. Motivation is a corner stone in online distance learning. Together with the flexible and effect interaction between teachers and learners enhance the learning outcomes. In order to enhance motivation, the course material should be prepared via a variety of educational strategies in order to suit with the variety of learning styles of students. In addition, assessments can be either formative or summative.

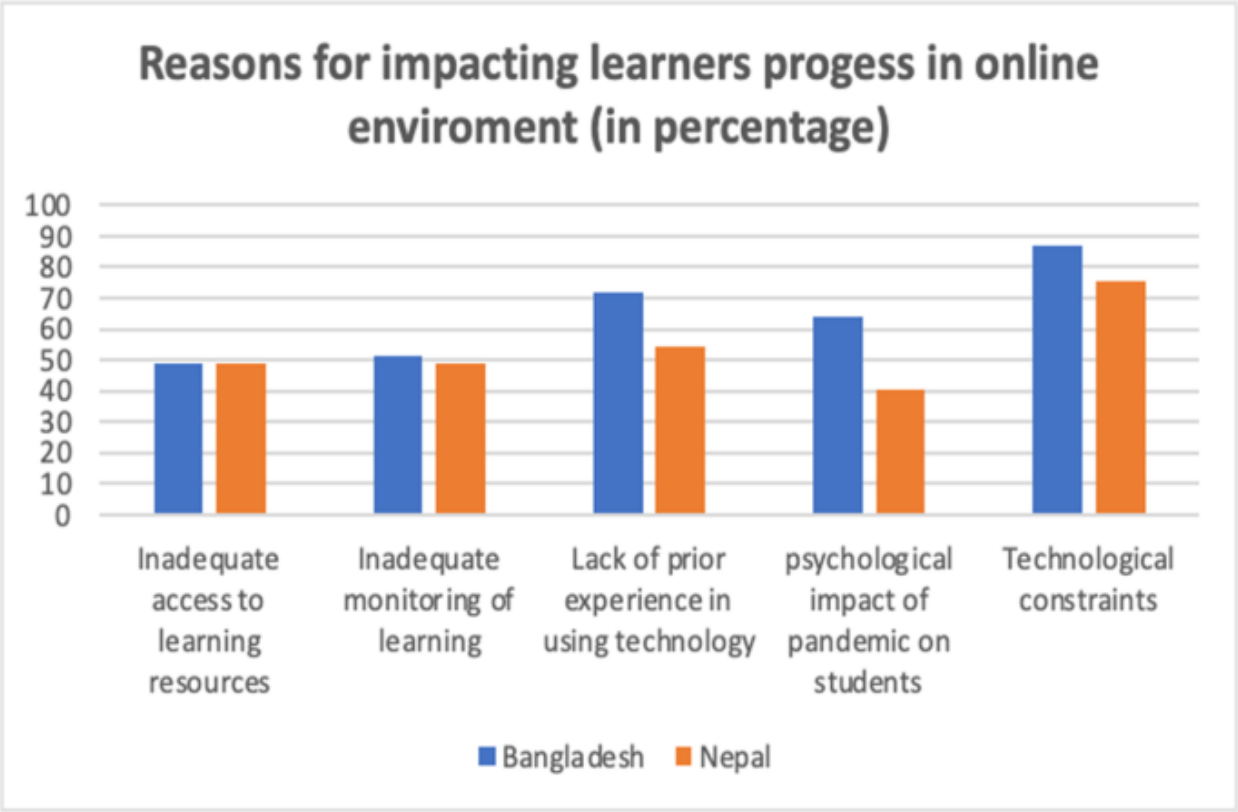

Figure 1.1: Reasons for Impacting Learners Progress in Online

Satisfaction could be achieved via electronic certification or electronic recognition within the course collaborative students and teachers over e-learning environment. To provide more reliable education we take an initiative to develop such kinds of app that provide free education content to user also judgment their learning by giving quiz.

1.4 CONCLUSION

In order to motivate students within the scope of e-learning environment, teachers should consider attention, relevance, confidence and satisfaction differently. Attention could be addressed using animation, Relevance and confidence could be achieved through clear organization of the materials of the course over time needed to finish it, with quizzes and explanation of importance of the information of the course. Satisfaction could be achieved via electronic certification or electronic recognition within the course collaborative students and teachers over e-learning environment. E-learning provides students with a different opportunity to learn regardless of where they are and when they are available. In e-learning environment, students are able to participate in self-faced and interactive learning that is otherwise impossible.

CHAPTER 2
BACKGROUND STUDY

2.1 INTRODUCTION

Mobile E-learning is also known as M-learning and is a new way of accessing content using mobile devices. It allows you to learn from any place and any time with the help of a mobile device and internet connection. According to research more and more people in the current scenario are accessing the internet through their smartphones. No doubt, laptops, and computers are still popular but nowadays people use different devices to perform various activities at a single moment of time.

Students have access to smartphones and through these smartphones, they use mobile learning. Students are taking up various courses from various e-learning apps in order to prepare themselves for the future. Apart from taking up courses, students are using mobile learning to prepare for various entrance and government exams. In corporate sector too mobile apps for e-learning provides an outlet to reach out to employees that use to travel a lot, work remotely and who are willing to perform the training regime after their working hours

2.2 ANALYSIS

NoteKhata mission is to help students by providing easy way to access study materials from app to well organized list of subjects with multiple topic albums. There are some existing systems available in the Google Play store. Recently RUET developed such kinds of app called “Cotha”. They organized their material as semester wise. It’s difficult for student to find course material from different semesters. And their course material is not organized as a chapter or topic wise. So, it is too difficult for student to find an individual topic from a huge number of documents. And their app is only available for android user. There are some Indian apps are available regarding this concept. But their all materials are paid. User need to pay huge amount of charge every month. Some Indian apps did not allow Bangladeshi users. And all materials are theory base not much practice exercise is available. There is no such kind of app available to take quick job and viva preparation.

We only provide study material for undergraduate students. At first, we are targeting Computer Science students. But at first as a test, we decided to launch two courses fully completed. Our app also provides chapter wise different varsity question bank. Student can enroll chapter wise short MCQ test. Also, our material is more focuses in problem base learning. We also provide course wise lab materials like codes, design and lab problem solves. Admin can update materials and add materials in both chapter wise and course wise. We are planning to add a new feature in our app that user can request a problem for some price range and on the other hand student can solve problems to get some money. e-learning mobile apps have not only been for the growth of students but e-learning apps also take teachers under their consideration. It is true that e-learning has proved to be hugely beneficial for the students but that is not the whole picture. These e-learning apps have also helped the teachers to grow leaps and bounds.

Figure 2.1: Direct Competitors of NoteKhata

According to market analysis, benefits of NoteKhata mobile apps include:

- Assigning work and tasks to students and keeping a track of their progress in real-time.
- Scheduling of class at any time according to their comfort.
- Better communication with students and their parents
- Flexibility to access information at any point of time
- Availability of push notifications about any important activity
- Availability of e-learning apps for different courses

2.3 CONCLUSION

Since there was a shift in the method of teaching with the discarding of physical classes and acceptance of virtual online classes, educators needed little tweaks in their style of teaching. E-learning apps have come a lot handy in their pursuit of learning the new methods of teaching.

CHAPTER 3
METHODOLOGY

3.1 INTRODUCTION

There are two general approaches to e-learning: self-paced and facilitated/instructor-led. Self-paced learners are alone and completely independent, while facilitated and instructor-led e-learning courses provide different levels of support from tutors and instructors and collaboration among learners. Basically, we take both approaches in our app. Both facilitated and self-paced e-learning activities and content should conform to a set of quality standards to ensure the effectiveness of the learning programmed. Well-developed e-learning courses can be delivered many times to different learners using the same materials. In addition, individual course components (e.g. units, lessons and media elements such as graphics and animations) can be reused in different contexts. For example, interactive e-lessons developed for a given self-paced e- learning course can be integrated into facilitated courses or can become part of another self-paced e-learning curriculum. We consider all possible cases in our working methodologies.

3.2 ALGORITHM

Here we discussed some steps of app working procedure-

- Step 1: At first user have to install our app.
- Step 2: Then users need to register and sign in our app. Also, users need to select institution and department.
- Step 3: After sign in user need to choose his subject like machine learning. After that there are few options for starting.
- Step 4: The first option is “Lecture Notes”. If user chose lecture notes, then he/she gets all materials chapter wise. Also enroll for short test here.
- Step 5: The second option is “Question Bank”. Here user can access different universities questions and subjective problems.
- Step 6: The third option is “Sessional Notes”. Here user can access codes, design, lab assignments etc.
- Step 7: The fourth option is “Ask for Solve”. Here user can submit problems.
- Step 8: The fifth option is “Attempt to solve”. Here user can attempt to solve other people problems.

3.3 FLOW CHART

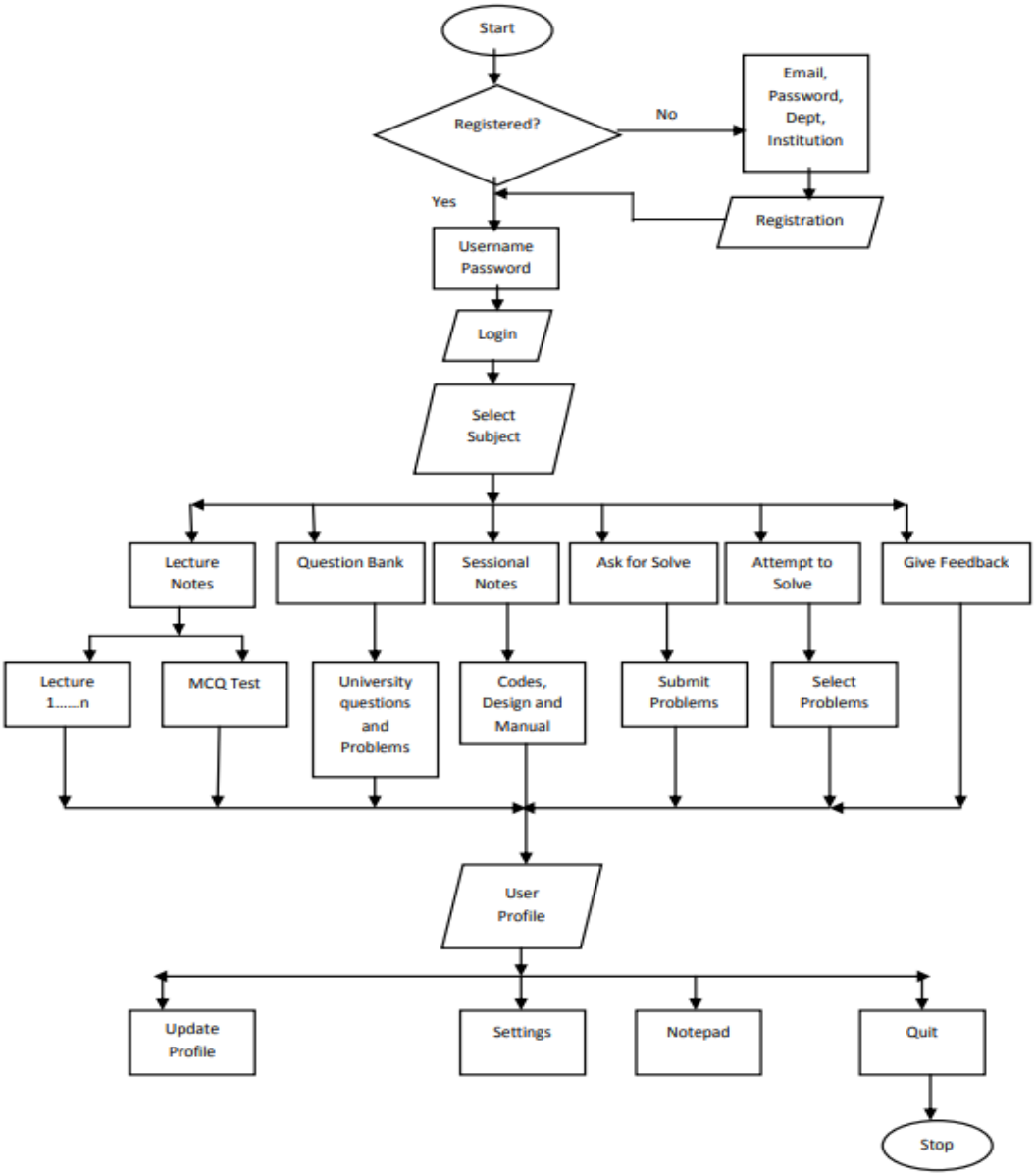

Figure 3.1: Flowchart of Proposed System

3.4 USE-CASE DIAGRAM

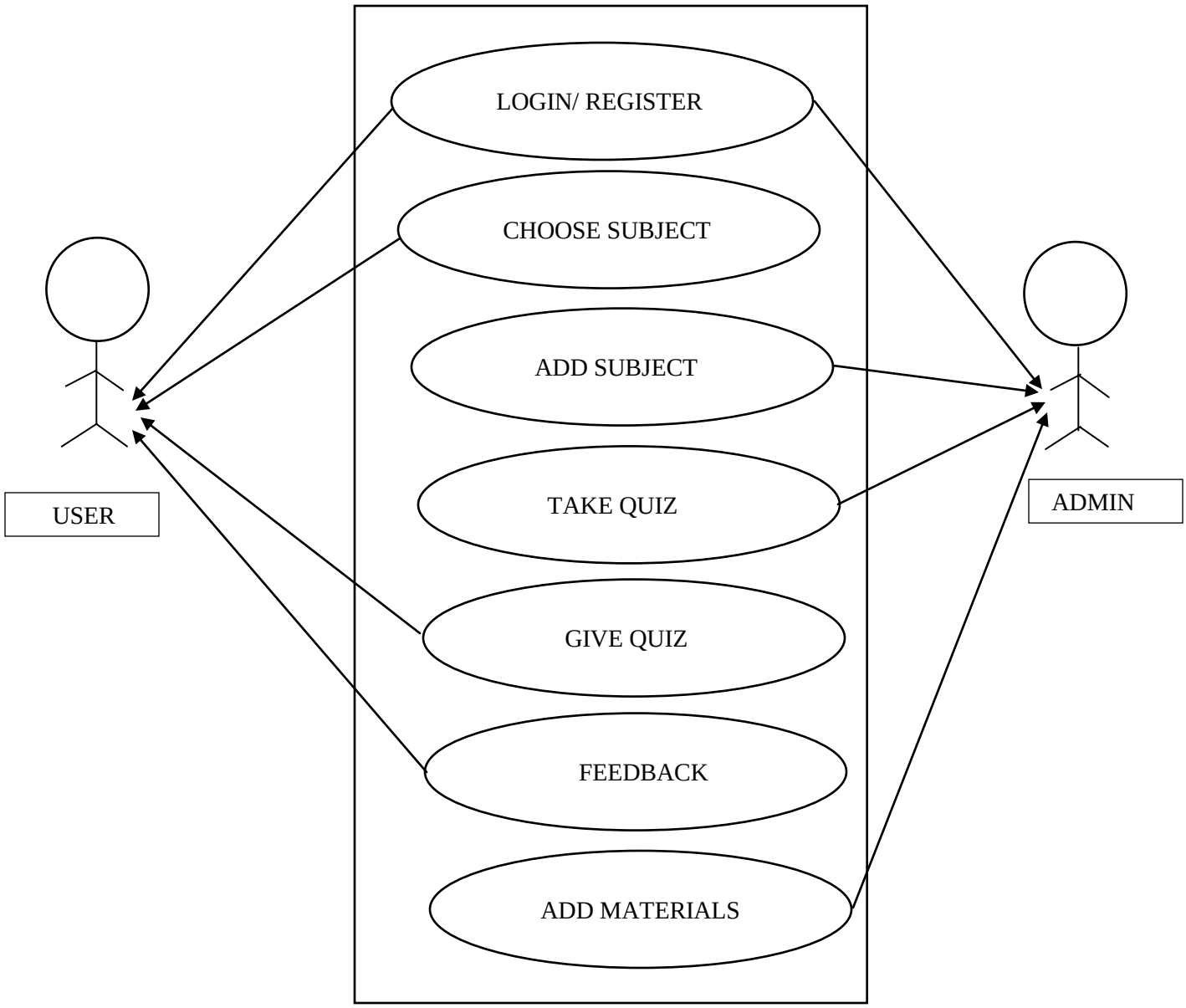

Figure 3.2: Use-case Diagram of Proposed System

3.5 ER DIAGRAM

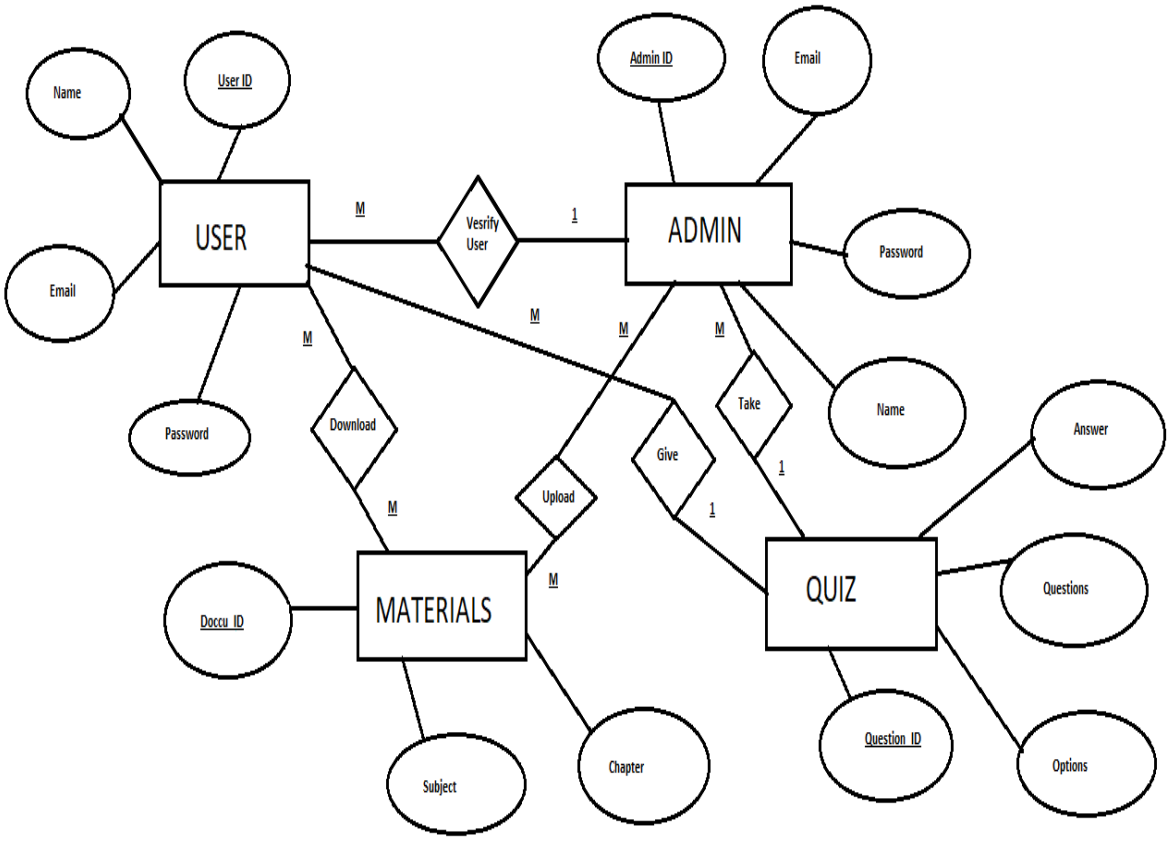

Figure 3.3: ER Diagram of Proposed System

3.6 DATA FLOW DIAGRAM

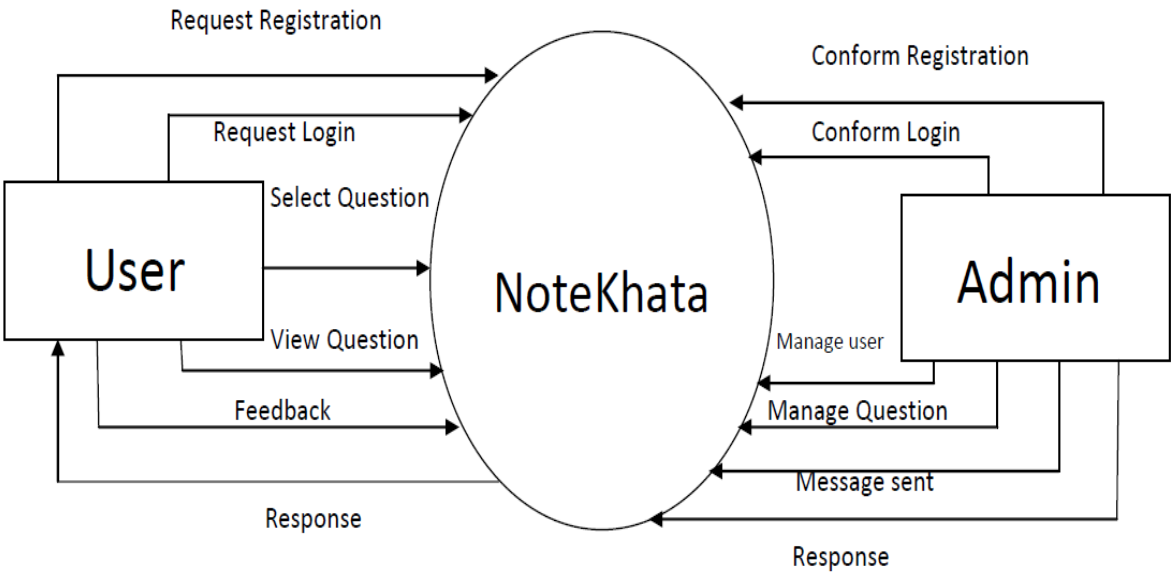

Figure 3.4: DFD of Proposed System

3.7 GANTT CHART

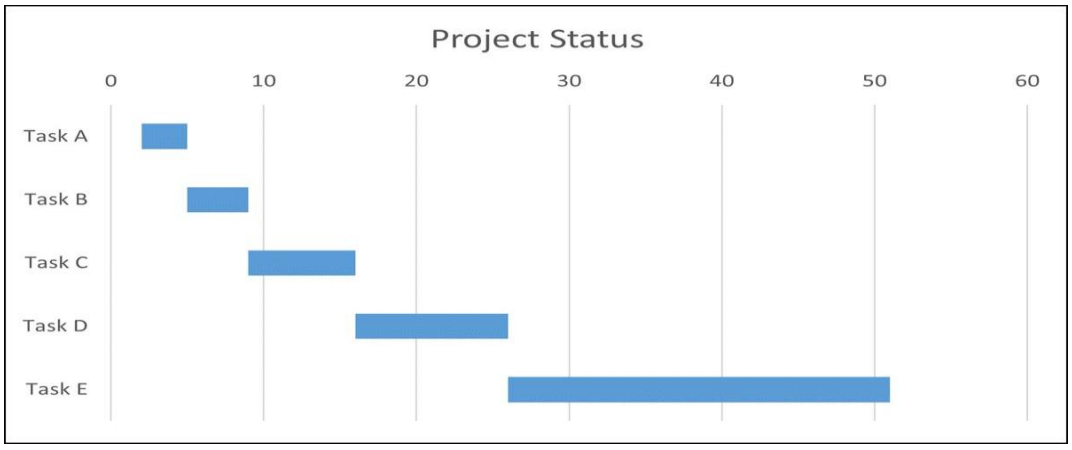

Figure 3.5: Gantt chart of Proposed System

3.8 FUNCTIONAL DECOMPOSITION

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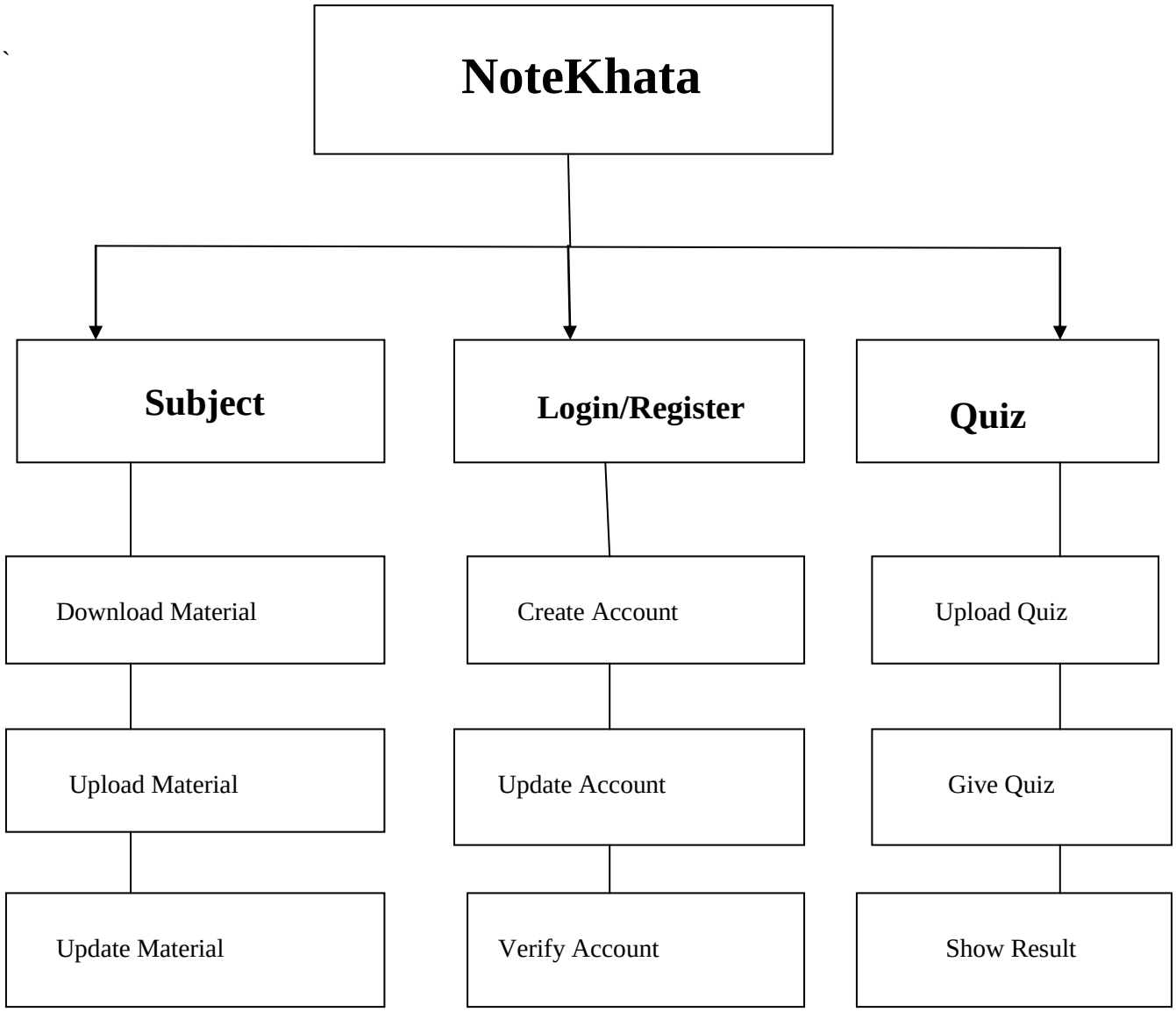

Figure 3.6: Functional Decomposition

3.9 CONCLUSION

Two most important classes of e-learning are experimental (means significant) learning and cognitive (means meaningless) learning. Studies showed that learners better acquire knowledge when they take active role in educational process. That's why we provide instant quiz, which develop his mind immediately with full of activeness. The emphasis thus shifts from the instructor and content-centred approach toward the learner-centered approach. The role of the teacher moves increasingly toward an advisor, guide and motivator. There are quite a lot of methods that can contribute to effective building of knowledge but many of them put project or problem-based learning as central point of interest. Problem solving techniques named problem-based learning can be used to engage learners in active knowledge building. Besides problem and project-based learning there are other similar learning methods including active learning, inquiry-based learning and service learning.

CHAPTER 4
IMPLEMENTAION

4.1 INTRODUCTION

E-learning is a technology that plays a major role in modern information technology. The e-learning content can be stored, searched, retrieved and assembled in order to provide learning just in time. E-learning is now an integral part in education and training as the learning materials are now available in internet and it can be accessed from anywhere and anytime across the globe. Initially the idea of e-learning was to offer online courses but ultimately it was felt that it is too costly and also not flexible. The solution to this problem is given by learning object (LO) technology. The learning objects (LO) are basically small learning material content that can be stored, searched, retrieved and assembled to provide learning as and when it is required. The e-learning platform brings brand new concept and it is a kind of network information learning mode. E-learning may be considered as an assist learning forms to traditional education and self-learning mode of continuing education system. The e-learning methods can be used for traditional content and internal trainings for enterprises and it may be used much more efficiently in technology and engineering education also. The present paper examines a range of issues covering technology, teaching, learning and organizational issues and makes general recommendations for priorities that will promote the successful use of Information and Communication Technologies (ICT). The objective of this paper is to discuss the different methodologies adopted in e-learning and how we can construct Learning objects and this can be applied to develop e-learning material in a better way.

For Android development, we use the following technologies
Programming language: Java
IDE: Android Studio
Database: Firebase
Tools: Android SDK, Android NDK

Software tools provide realization of certain activity during learning and commonly used categories are hypertext, tutorials, video lessons, simulators, drills, educational games, slide presentations, electronic tests, chat, forum, wiki, blogs, e-mail, instant messaging etc. On the other hand e-learning systems integrate and interconnect different e-learning tools into one integrated platform for learning based on communication characteristics of software and resources. Three different environments could be distinguished for e -learnings.

4.2 SPLASH SCREEN

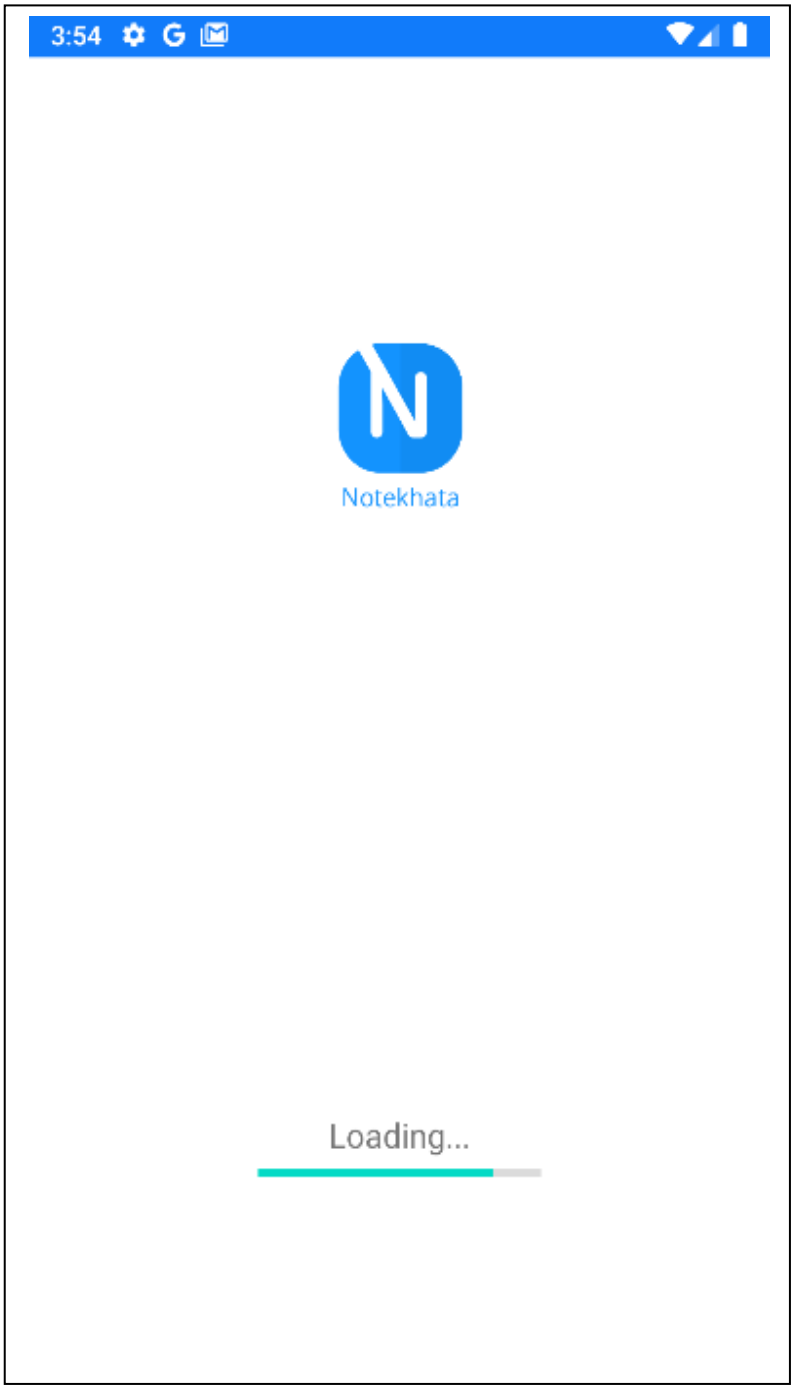

Figure 4.1: Splash Screen

4.3 LOGIN PAGE

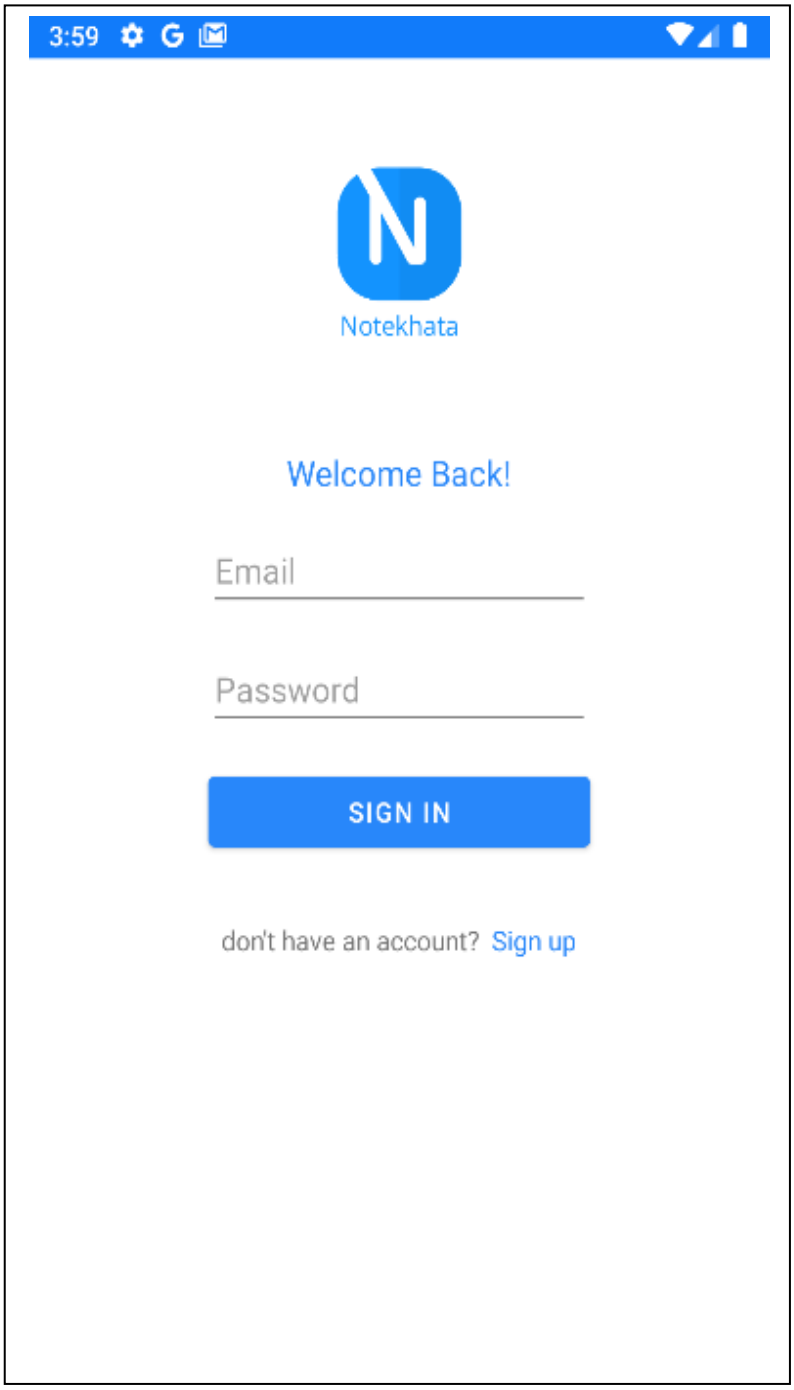

Figure 4.2: Login Page

4.4 REGISTER PAGE

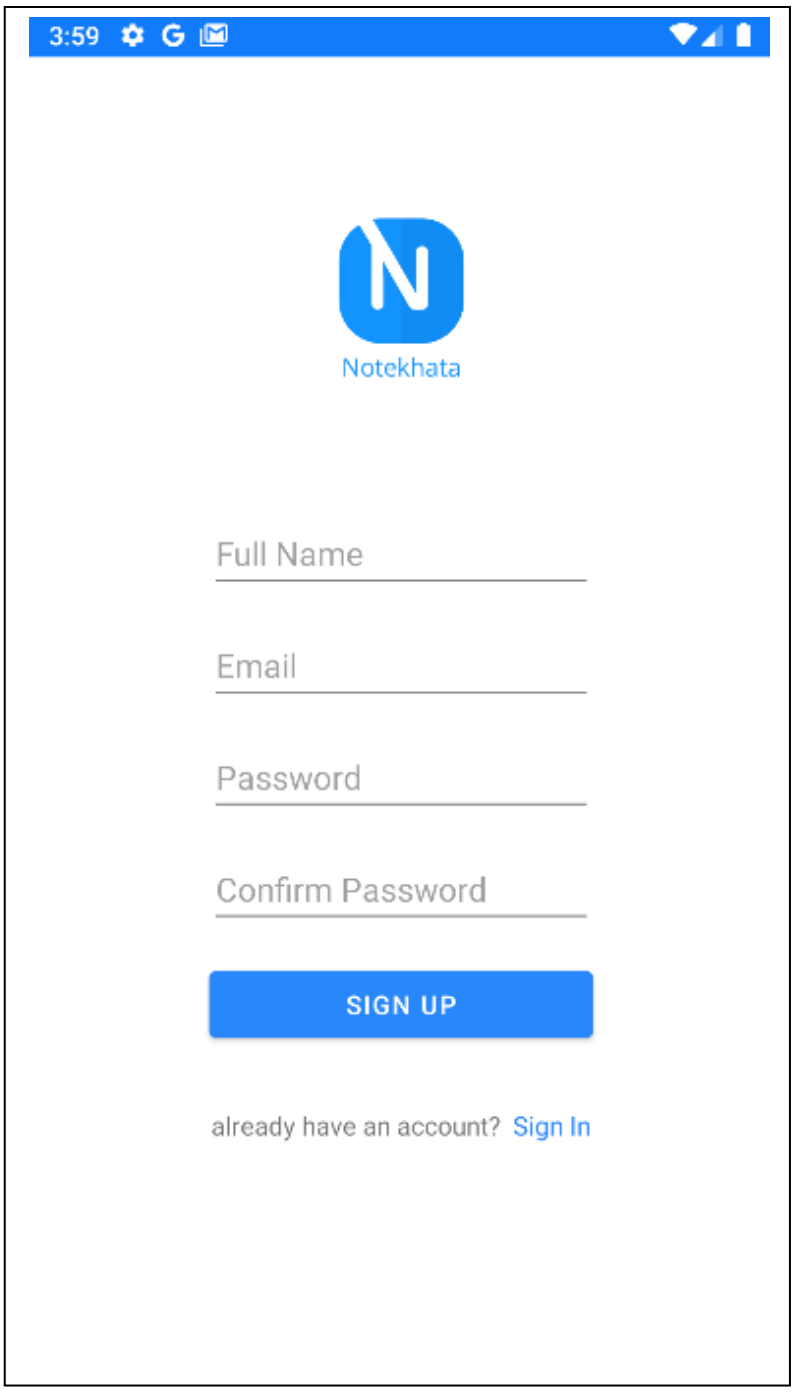

Figure 4.3: Register Page

4.5 HOME PAGE

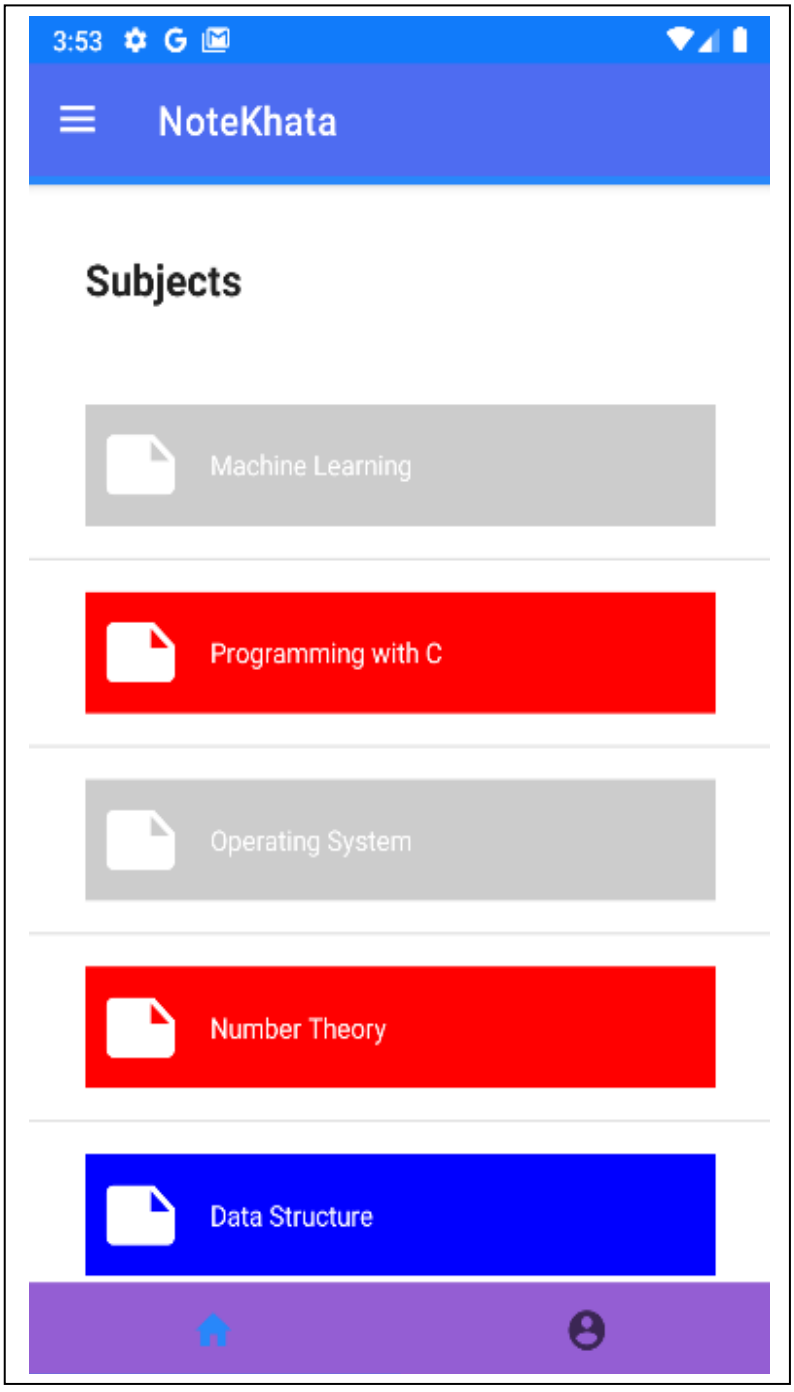

Figure 4.4: Home Page

4.6 CATEGORY PAGE

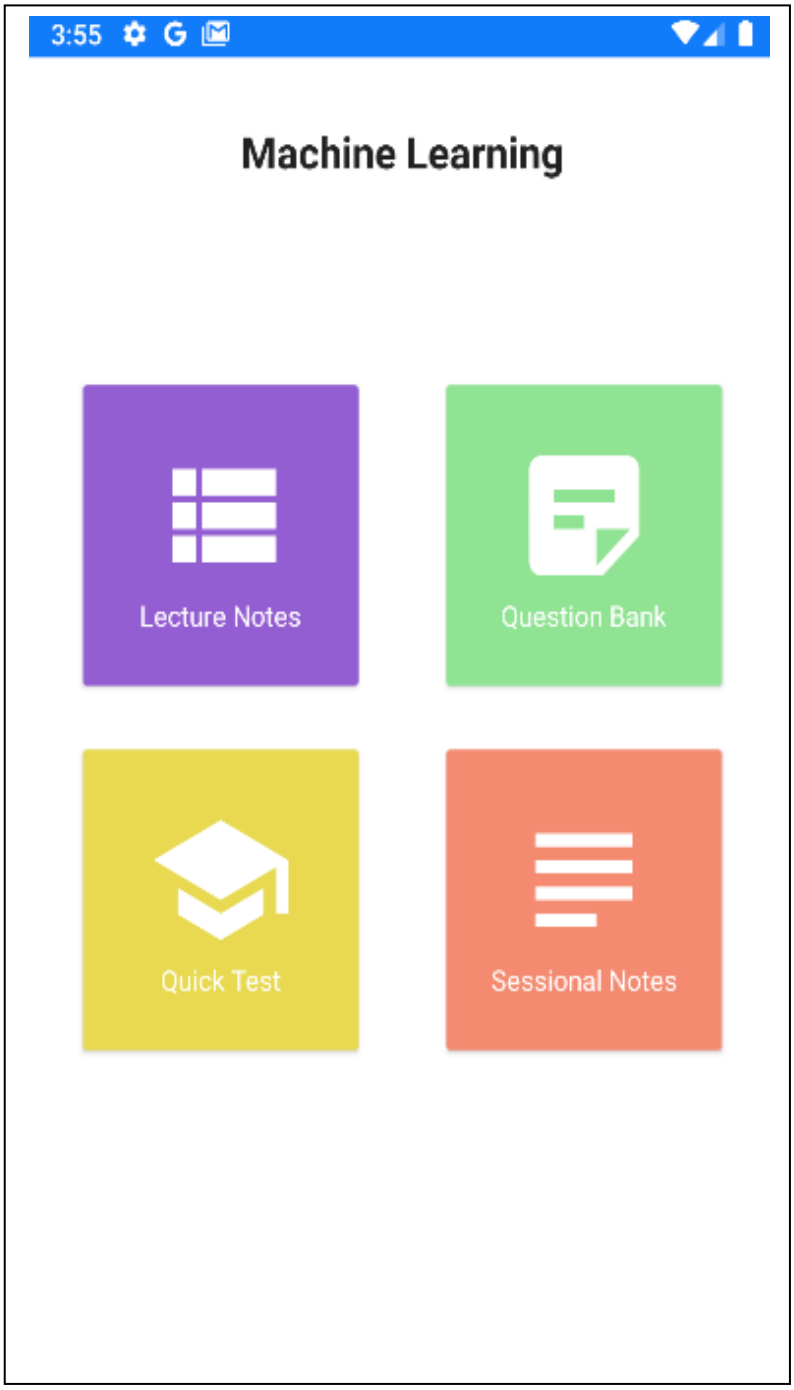

Figure 4.5: Category Page

4.7 LECTURE NOTES PAGE

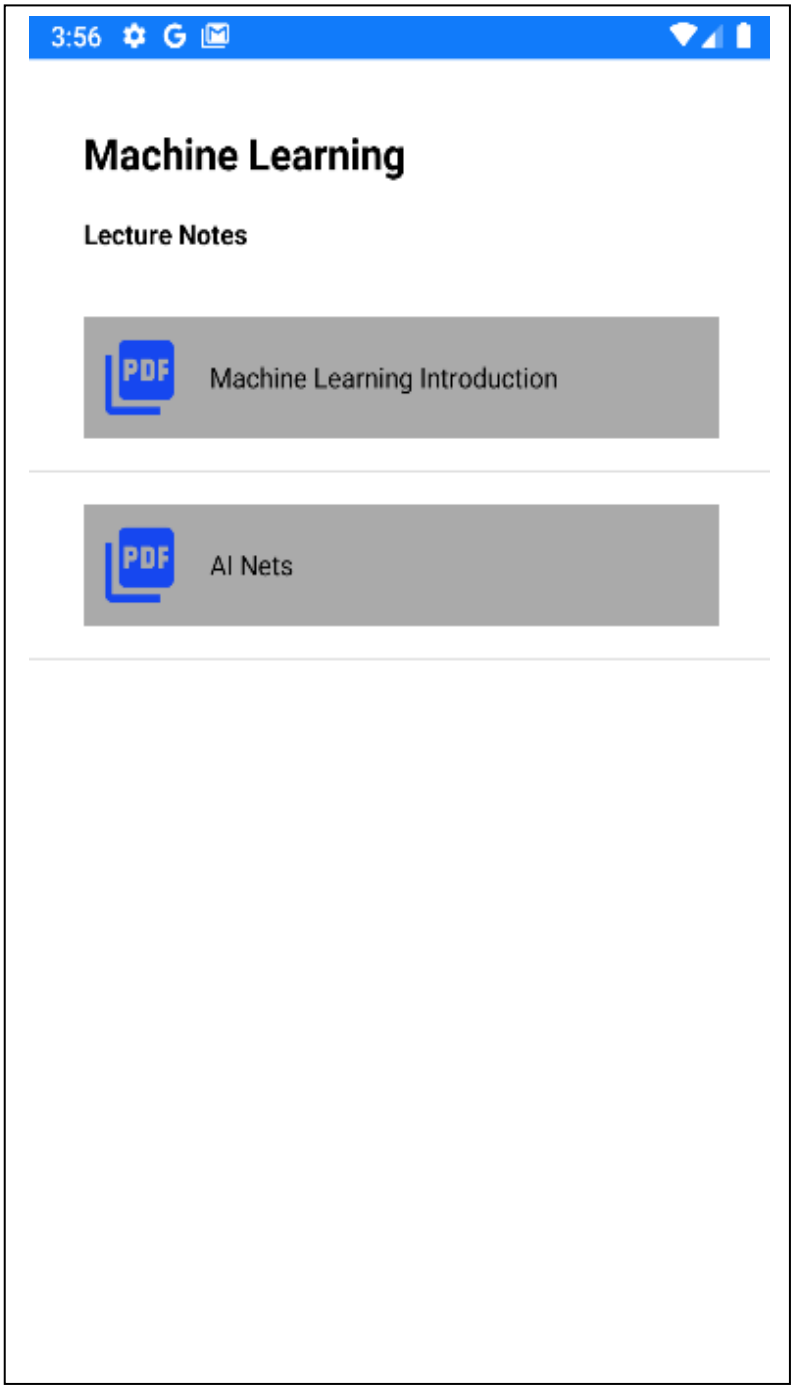

Figure 4.6: Lecture Notes Page

4.8 QUIZ MAIN PAGE

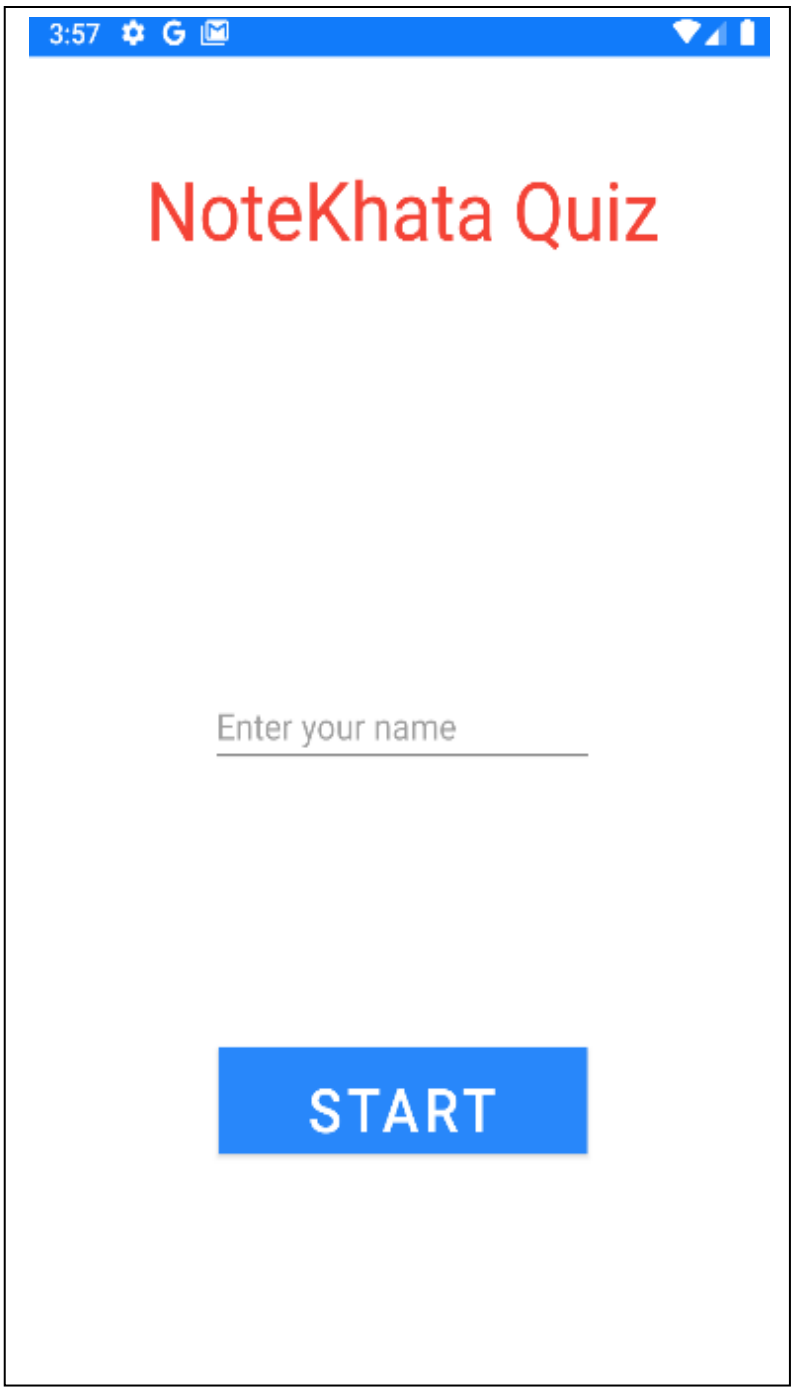

Figure 4.7: Quiz Main Page

4.9 QUIZ PAGE

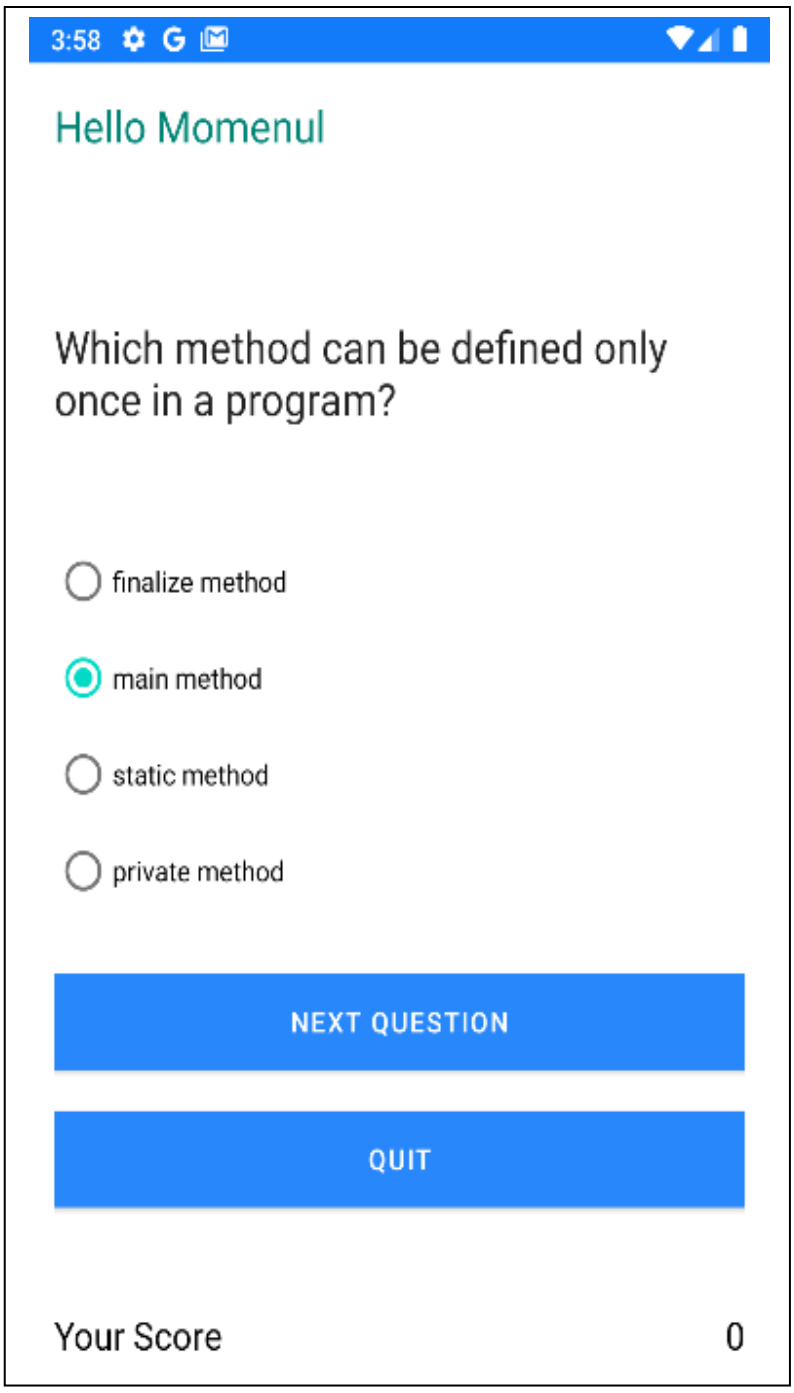

Figure 4.8: Quiz Page

4.10 RESULT PAGE

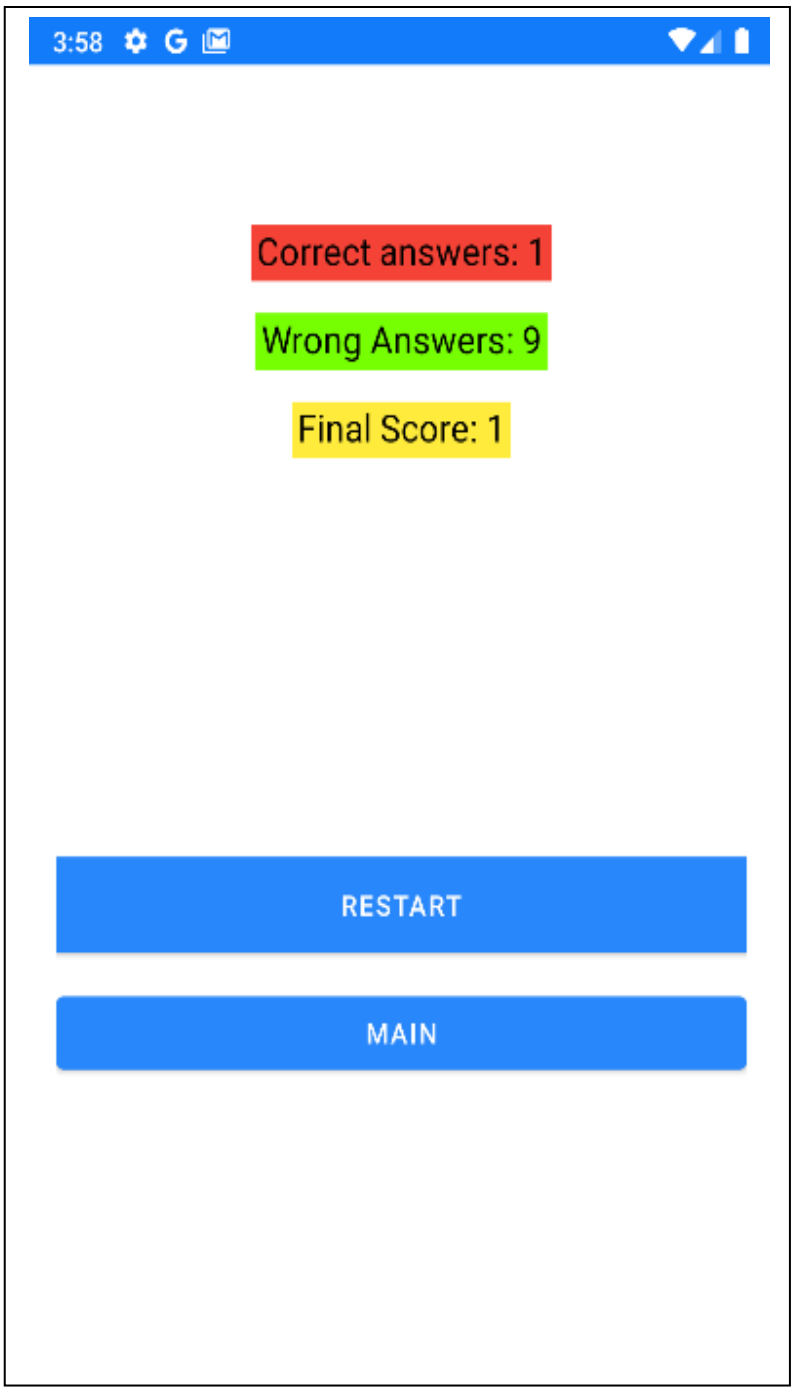

Figure 4.9: Answer Page

4.11 DRAWER NAVIGATION PAGE

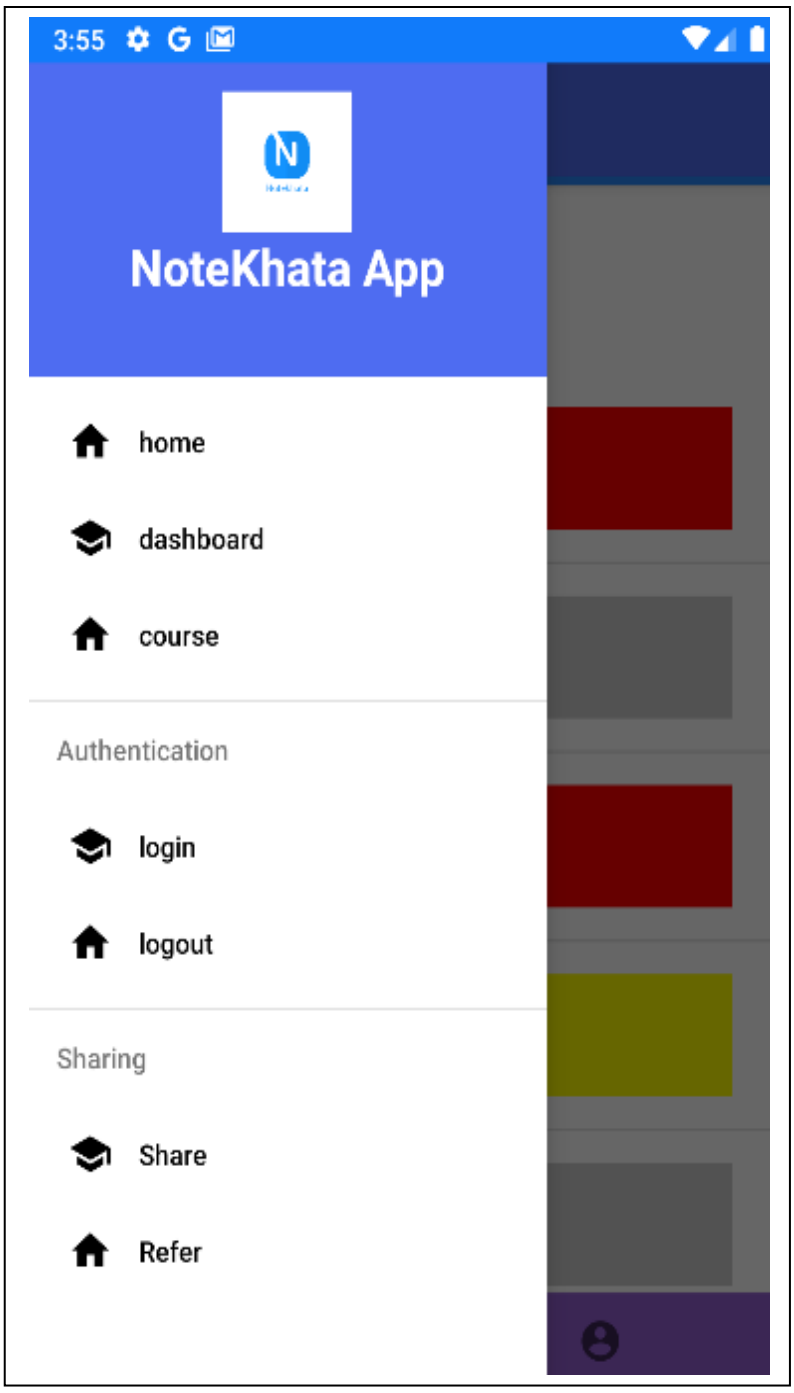

Figure 4.10: Lecture Navigation Page

4.12 CONCLUSION

As the tuning flow of the modern world of technology, the mobile APKs are tremendous extracting segment of the globalization smart marketing technology. Smart learning APKs applications are involving to a meteor pace to rise level of n utilizes and users a rich in report. AS on the paper, Android Platform for the developing the mobile applications. Firstly, we are Here To explain about the develop the android application as by our learnt knowledge we have created the application.

After coming together with app designs, the mobile app developers get down to bring everything into action. The team leader defines tasks to the developers and develops app development step by step process to achieve the set milestones. This section contains the database and server-side objects required for your mobile app's supporting functionalities. If you're using an existing back-end platform, you may need to make some changes to accommodate the desired mobile capabilities.

CHAPTER 5
RESULT ANALYSIS

5.1 INTRODUCTION

Education is popular. Anatomy, physics, chemistry, astronomy, and art apps win design and interface awards and get downloaded by hundreds of thousands of users. Online courses from learning foreign languages to medicine are now available for both children and adults. Self-education was never easier than today, both for personal or academic education.
The rhythm of modern life dictates its laws, and often the only free time we have is while driving or commuting, so smart phones become the most affordable way to get new information quickly and easily. If you don't give up and try to devote every minute to self-development, then your choice is training with a mobile application.
That's why an increasing number of people are using educational apps, no matter the age or professional background. It means that by creating an educational app, you can provide specific value to consumers and businesses resulting in a popular and profitable product.

5.2 TESTING

Testing is an integral part of the app development process. By running tests against your app consistently, you can verify your app's correctness, functional behavior, and usability before you release it publicly. You can manually test your app by navigating through it.

Alpha testing is when a closed group takes a stab at your software. Beta testing is when a group from the general public uses an early version of your app. Both are useful in software development and serve different purposes. At first we test our app between our team members. We create multiple account and test with different password. We give multiple time quiz and check scores. App successfully passed our test.

Android app beta testing is a phase of the software development lifecycle where a group of external users (beta testers) test your application in real-world environments to discover errors and provide you with feedback. We apply beta testing on our classmates. This time also passed our beta test.

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5.3 ANALYSIS

- Huge profit opportunities — taking into account the above-mentioned popularity of mobile e-learning solutions.
- Making use of the latest technology advances — some apps for educational purposes get to be popular because of incorporating modern tech. It's a great place to introduce something revolutionary in everyday life.
- Ability to change and improve people's lives — many startups owners dream about making an impact. Here's an opportunity.

5.4 CONCLUSION

Data provider, the worldwide e-learning market is estimated to be worth $398 billion in 2026. That is a 300% boost from 2015's 107 billion.

The online education market is developing rapidly and is being encouraged by raising capital. In 2019, the global investment in EdTech (the development of technological solutions for education) reached $18.66 billion, which is 14.2% more than in 2018. The most substantial section is in the USA (42.9%) and China (21.4%). Investors prefer to put their money into learning tools based on artificial intelligence (this category occupies 19.7% of the investment structure) and mobile learning (15.9%). More and more companies, including huge enterprises, recognize the booming popularity of educational content the demand for which skyrocketed during the first months on the pandemic.

CHAPTER 6
FUTURE WORK

In the future we want to develop a freelancing education system in the ask to solve section. Where student can solve problems to earn some points. With these points he/she can unlock some other study materials.

We also improve some features like offline pdf loader, user verification system, user personal notebook and text highlighter. Our app is still under development. We are expecting next year we will develop IOS version of Notekhata. Currently we are working on only CSE background study materials. In future we will targeting other popular departments too.

CHAPTER 7
CONCLUSION

E-learning is not just a change of technology. It is part of a redefinition of how we as a species transmit knowledge, skills, and values to younger generations of workers and students. This book makes a few predictions of how e-learning and the functions it serves will continue to develop. Learners will have access to millions or billions of knowledge modules. Some will be Web pages with simple text and graphics. Others may include multimedia simulations. In many fields, e-learning has become the default way to conduct training or to provide education. There are four secrets of e-learning. The first secret is to teach what learners need to learn in the way they most naturally learn. The second secret is to define clear learning objectives. The third secret builds on the first two. It is to focus on the right objectives. The final secret is in the power of testing. e-Learning. We are targeting to gain these key secrets to develop our education system through NoteKhata.

In conclusion, we can see that culture is a key contributor to the success of e-learning. It is important for e-learning course providers to include a study and analysis of the culture of the target student group in the planning stage. The suggested strategies are only a guideline for e-learning providers. They should take these into account and use as applicable to the delivery of the course. Students have to realize that to follow an e-learning course, requires them to have a complete change of their mindset. They need to be more proactive in their studies and not expect to be spoon-fed. It is important for the government to play the biggest role. It has to work to promote e learning especially in rural area. It has to create various partnerships and form a centralized body for the development of e-learning. Unfortunately, addressing culture alone will not solve the e-learning situation in South Asia. There still has to be a vast development of the infrastructure to support the delivery of e-learning. The education system in these countries requires a change in the methods of teaching to empower the student to study on his or her own.

CHAPTER 8
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