SEEK & LEARN

VIDEO CALLING APPLICATION/WEBSITE

Project number- 50

A Project Report

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DECLARATION

I hereby declare that the project entitled **"SEEK & LEARN – (Video Calling Application/ Website)"** submitted for the B. Tech. (CSE) degree is my original work and the project has not formed the basis for the award of any other degree, diploma, fellowship or any other similar titles.

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CERTIFICATE

This is to certify that the work titled **"SEEK & LEARN – (Video Calling Application/ Website)"** submitted by "**KIRTI BARMAN(161B110), LOGIC GUPTA(161B114), LOKESH GIDWANI(161B115)**" in partial fulfilment for the award of degree of **B-Tech** of Jaypee University of Engineering & Technology, Guna has been carried out under my supervision. As per best of my knowledge and belief there is no infringement of intellectual property right and copyright. Also, this work has not been submitted partially or wholly to any other University or Institute for the award of this or any other degree or diploma. In case of any violation concern student will solely be responsible.

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Date:

ABSTRACT

In today's world communication has become so easy due to integration of communication technologies with internet. However students or any age group of people face difficulties whenever they start learning something new. Even though many new advancements have been implemented to help them use the computer/mobile phone android applications to help them for learning purpose but the classroom effect is yet not achieved where students can video call the teacher/mentor for the guidance regarding the topics. This paper aims at developing an android application/website that will help the student to not only access the videos regarding their area of interests but they can also chat and have a video call with the regarding mentor. The system is user friendly and efficient to use.

The application will be an android application for the student and the mentor both to sign up/ login to the application and interact with one another for the purpose of learning using text conversations, videos and video calling. There will be a payment gateway for the transaction of money while login by the student.

The main benefit of this system is that the student will be able to contact the mentor by texting as well as through video calling.

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Secondly, we would like to thank Dr. Ajay Kumar for helping us in understanding the format of the project and guiding through the different tasks.

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CHAPTER 1 - INTRODUCTION

Internet is considered as the most important means of information and has become de facto methods used in communication. Email is one of the most common forms of communication.

We consider Google to learn anything new and watch videos on YouTube in case of any difficulty. We type mails to the guide/teachers/mentors regarding the problems we face during the learning. However, there are students who feel comfortable in getting live demo by the tutors regarding the s ubjects and many times they are forbid by that advantage. Courses available on Coursera, Udemy and videos available on YouTube are pre-loaded videos but not live conversations with the respective tutors.

Therefore, in this project we will be developing an android application/website where students can watch videos regarding their respective courses and ask for help by the tutors through mails as well as through video calls.

1.1 OVERVIEW

This project is a prototype application for a standalone user which works on all the system having Android Oreo 8.0 and below installed in their mobile phones. When the user runs the application, Home page will be displayed. The Home page is displayed containing several options. The user can watch videos regarding their respective courses and ask for help by the tutors through mails as well as through video calls. The application will only work if the mobile has proper internet connections.

1.2 PROBLEM STATEMENT

We aim to overcome the shortcomings of the existing system in making the user completely independent with our proposed system.

1.3 STUDY AREAS

Our area of studies includes Android studio, Agora.io for the development of the application and firebase for the data storage.

1.4 OBJECTIVE

This project we will be developing as an android application/website which aims to provide a platform where students can watch videos regarding their respective courses and ask for help by the tutors through mails as well as through video calls. They can signup/login in the application and payment transactions can be made using RazorPay.

1.5 METHODOLOGY

The complete system is based on the concept where students and the mentors can individually login/signup in the app and they will provide their required information. They can choose their respective area of interests. The tutors will pass a quiz and they will be given a rating which will show their proficiency in that specific subject. The students can watch videos related to their topics and they can send mail to the respective tutors. The students can make a specific payment and then they can have a live video call with the tutor in a given time period. If they still have any doubts regarding those topics then they can again make a video call after making the required payment in a given time. The database of both students and tutors is stored in firebase.

CHAPTER 2-RELATED WORK

This chapter provides an introduction to the areas of research. It describes the work which has already been done in direct-show and states the new scope. The scope has been clearly explained and the technology used to obtain this has been mentioned in this chapter.

2.1 EXISTING SYSTEM

There are 4.1 billion email accounts created until 2014 and there will be estimated 5.2 billion accounts by end of 2018. This makes emails the most common form of communication. Video calling is the technique through which anyone can live chat with another person on the video session i.e., you send your live video to another person and the other person sends you his live video and hence makes the complete conversational chat through that. For making the video call, you need to use some apps or programs on the Windows PC so that same task could be accomplished because there is such direct functionality in Windows OS that could help you perform up to the video call. Slowly but surely, the world is moving away from SMS and MMS as the default way to text message people. It started years ago with apps like AOL Instant Messenger and has evolved into a plethora of options that all work really well. The evolution definitely kicked it up a notch over the last few years.

Our project aims to bring video calling and text conversations together and turn it into a learning platform for students and they can even watch videos using this android application/website related to their respective areas of interests.

2.2 RELATED WORK WORLDWIDE

Some of the online learning applications are:

2.2.1 AMAZON KINDLE: Amazon Kindle is one of the more traditional learning apps. The service has an untold number of reference guides, how-to books, self-help books, text books, and more. You simply buy them, download them, and read them. It’s delightfully old school, but some people enjoy that. Books are generally less expensive than their physical counterparts. Your device can also store tons of them without running out of space. Those who don’t like Amazon Kindle have other options. Google Play Books and Nook by Barnes & Noble are both excellent options as well. They both have a large assortment of guides,

tutorial books, and other educational literature. Google Play Books and Nook also fill this role quite well.

2.2.2 COURSERA: Coursera is an online school of sorts. It has a variety of lessons and classes that you can take. Each one educates you on a different topic. It boasts well over 1,000 courses ranging from math to science and even technology stuff. The classes have lectures, reading assignments, and video content. Finishing a course will even earn you a certificate of completion. Some of the courses are free. Others you'll have to pay for. It's a delightful mix of old school and modern learning. The only downside is that the app can be buggy at times. It's one of the learning apps worth checking out.

2.2.3 PHOTOMATH: PhotoMath is one of the more focused learning apps. As the name implies, this one is all about math. It uses your camera and OCR technology to read equations that you write down. It then gives you the answer. More importantly, it shows you the step-by-step procedure on how it came up with the answer. Thus, it gives you the answer and teaches you how to solve the problem. A lot of people struggle with math and an app like this can help. The free version provides the basic features. Going pro will get you the step-by-step instructions for completing equations, better explanations, and extra math resources. Socratic is another excellent math app that does a lot of the same stuff in a slightly different way.

Some video calling and chatting applications already in use are:

2.2.4 SKYPE: This is one of the best online video chat service programs that is very popular throughout the world. The reason being why this piece of artwork is so very popular is that it has some amazing set of features and functions available for the users that help them to carry on their video chat smoothly. There is another benefit of using skype, you would find most of the people on this network and hence it might be possible that your friends may be also using it.

2.2.5 GOOGLE HANGOUTS: This is a popular web-based video calling software which was introduced as a part of the popular Google Hangouts social media platform. The video chat service of Google Hangouts about 10 people can enjoy up to the smooth group video chat at a time. And at last, if you are willing to get up the best and most secure video chatting service then this one is meant for you only.

2.2.6 WHATSAPP: WhatsApp is basically an instant messaging app which is available for both Android and iOS devices. However, WhatsApp also has its app for Windows devices. Users can use the cross-platform instant messaging app to make voice and video calls for free. Not just that, but WhatsApp even allows users to share documents, images, videos, and much more.

2.2.3 PROPOSED SYSTEM:

This project we will be developing as an android application/website which aims to provide a platform where students can watch videos regarding their respective courses and ask for help by the tutors through mails as well as through video calls. They can signup/login in the application and payment transactions can be made using RazorPay.

CHAPTER 3 - REQUIREMENT ANALYSIS

Requirements analysis, also called requirements engineering, is the process of determining user expectations for a new or modified product. These features, called requirements, must be quantifiable, relevant and detailed. In software engineering, such requirements are often called functional specifications. Requirements analysis is an important aspect of project management. It involves frequent communication with system users to determine specific feature expectations, resolution of conflict or ambiguity in requirements as demanded by the various users or groups of users, avoidance of feature creep and documentation of all aspects of the project development process from start to finish. Energy should be directed towards ensuring that the final system or product conforms to client needs rather than attempting to mould user expectations to fit the requirements. Requirements analysis is a team effort that demands a combination of hardware, software and human factors engineering expertise as well as skills in dealing with people.

3.1 ANDROID STUDIO

Android Studio (an IDE for Android stage advancement) is used for building up the Front-end and Firebase(No SQL cloud database) for Backend. A unique mark scanner is utilized to check the genuineness of the out-pass being utilized. This guarantees our proposed arrangement is as idiot proof as would be prudent.

3.1.1 WHAT IS ANDROID?

- Android is a software package and linux based operating system for mobile devices such as tablet computers and smartphones.
- It is developed by Google and later the OHA (Open Handset Alliance). Java language is mainly used to write the android code even though other languages can be used.
- The goal of Android project is to create a successful real-world product that improves the mobile experience for end users.
- There are many code names of android such as Lollipop, Kitkat, Jelly Bean, Ice cream Sandwich, Froyo, Eclair, Donut etc which is covered in next page.

3.1.2 FEATURES OF ANDROID:

After learning what is Android, let's see the features of android. The important features of android are given below:

- It is an open-source.
- Anyone can customize the Android Platform.
- There are a lot of mobile applications that can be chosen by the consumer.
- It provides many interesting features like weather details, opening screen, live RSS (Really Simple Syndication) feeds etc.

It provides support for messaging services (SMS and MMS), web browser, storage (SQLite), connectivity (GSM, CDMA, Blue Tooth, Wi-Fi etc.), media, handset layout [14] etc.

3.1.3 LINUX KERNEL:

Android's kernel is based on the Linux kernel's long-term support (LTS) branches. As of 2018, Android targets versions 4.4, 4.9 or 4.14 of the Linux kernel. The actual kernel depends on the individual device.

Android's variant of the Linux kernel has further architectural changes that are implemented by Google outside the typical Linux kernel development cycle, such as the inclusion of components like device trees, ashmem, ION, and different out of memory (OOM) handling. Certain features [4] that Google contributed back to the Linux kernel, notably a power management feature called "wakelocks", were initially rejected by mainline kernel developers partly because they felt that Google did not show any intent to maintain its own code. Google announced in April 2010 that they would hire two employees to work with the Linux kernel community, but Greg Kroah-Hartman, the current Linux kernel maintainer for the stable branch, said in December 2010 that he was concerned that Google was no longer trying to get their code changes included in mainstream Linux. Google engineer Patrick Brady once stated in the company's developer conference that "Android is not Linux",
with Computerworld adding that "Let me make it simple for you, without Linux, there is no Android"

3.1.4 LIFECYCLE OF ANDROID:

- Android Activity Lifecycle is controlled by 7 methods of android.app.Activity class. The android Activity is the subclass of ContextThemeWrapper class.
- An activity is the single screen in android. It is like window or frame of Java.
- By the help of activity, you can place all your UI components or widgets in a single screen.
- The 7 Lifecycle method of Activity describes how activity will behave at different states.

The 7 lifecycle methods of android activity.

Table 3.1 Android Activity Lifecycle Methods

Method	Description
OnCreate	called when activity is first created.
OnStart	Called when activity is becoming visible to the user.
OnResume	called when activity will start interacting with the user.
OnPause	called when activity is not visible to the user.
OnStop	called when activity is no longer visible to the user.
OnRestart	called after your activity is stopped, prior to start.
OnDestroy	called before the activity is destroyed.

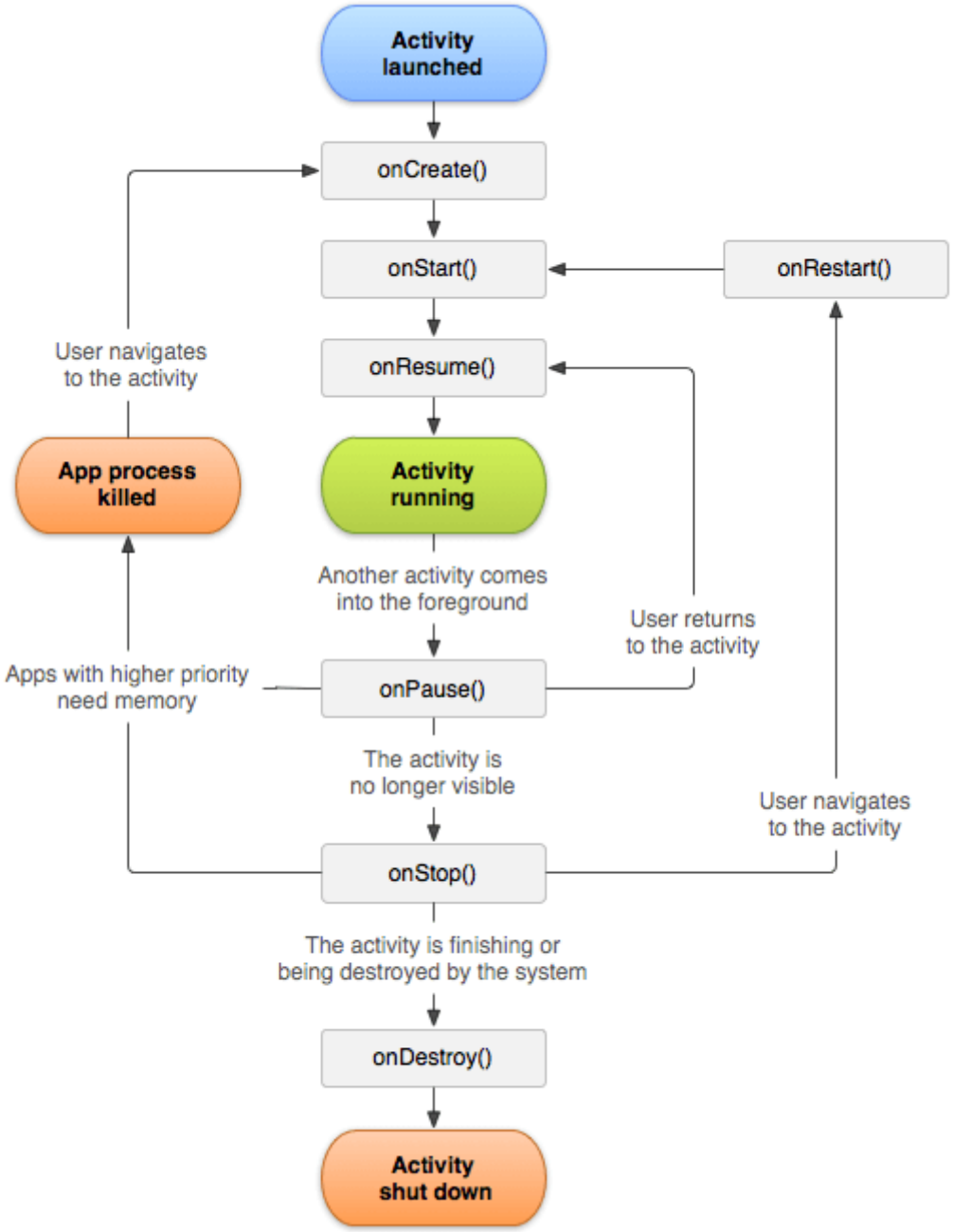

Figure 3.2 Android Activity Lifecycle Methods flow diagram

3.1.5 PLATFORM USAGE:

Oreo (21.5%) Nougat (28.2%) Marshmallow (21.3%) Lollipop (17.9%) KitKat (7.6%)

Jelly Bean (3.0%) Ice Cream Sandwich (0.3%) Gingerbread (0.2%)

Charts in this section provide breakdowns of Android versions, based on devices accessing the Google Play Store in a seven-day period ending on October 26, 2018. Therefore, these

statistics exclude devices running various Android forks that do not access the Google Play Store, such as Amazon's Fire tablets.

Table 3.3 Platform Usage of Android Versions

Version	Code name	Release date	API level	Runtime	Distribution	First devices to run version
9	Pie	August 6, 2018	28	ART	< 0.1%	Essential Phone, Pixel, Pixel XL, Pixel 2, Pixel 2 XL, Nokia 7 Plus, OnePlus 6, Oppo R15 Pro, Sony Xperia XZ2, Vivo X21UD, Vivo X21, Xiaomi Mi Mix 2S[356]
8.1	Oreo	December 5, 2017	27	ART	7.5%	Pixel, Pixel XL, Nexus 6P, Nexus 5X
8.0		August 21, 2017	26	ART	14.0%	N/A
7.1	Nougat	October 4, 2016	25	ART	10.1%	Pixel, Pixel XL
7.0		August 22, 2016	24	ART	18.1%	Nexus 5X, Nexus 6P
6.0	Marshmallow	October 5, 2015	23	ART	21.3%	
5.1	Lollipop	March 9, 2015	22	ART	14.4%	Android One

Version	Code name	Release date	API level	Runtime	Distribution	First devices to run version
5.0		November 3, 2014	21	ART 2.1.0	3.5%	Nexus 6, Nexus 9
4.4	KitKat	October 31, 2013	19	Dalvik (and ART 1.6.0)	7.6%	Nexus 5
4.3	Jelly Bean	July 24, 2013	18	Dalvik	0.4%	Nexus 7 2013
4.2		November 13, 2012	17	Dalvik	1.5%	Nexus 4, Nexus 10
4.1		July 9, 2012	16	Dalvik	1.1%	Nexus 7
4.0	Ice Cream Sandwich	October 19, 2011	15	Dalvik	0.3%	Galaxy Nexus
2.3	Gingerbread	February 9, 2011	10	Dalvik1.4.0	0.2%	Nexus S

Legend:

Older version, still supported

Latest version

Latest preview version, Future release

3.2 WHAT IS ANDROID STUDIO?

Android Inc. was founded in Palo Alto, California, in October 2003 by Andy Rubin, Rich Miner, Nick Sears, and Chris White Rubin described the Android project as "tremendous potential in developing smarter mobile devices that are more aware of its owner's location and preferences". The early intentions of the company were to develop an advanced operating

system for digital cameras, and this was the basis of its pitch to investors in April 2004. The company then decided that the market for cameras was not large enough for its goals, and by five months later it had diverted its efforts and was pitching Android as a handset operating system that would rival Symbian and Microsoft Windows Mobile. Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.

3.3 FIREBASE:

In 2014, Google completed the acquisition of a San Francisco-based company named Firebase, Inc. Firebase, Inc. provided a range of developer solutions designed to accelerate the integration of cloud-based features into mobile and web apps. After purchasing the company, Google combined the services provided by Firebase with a number of complementary features previously included as part of the Google Cloud Platform. The combined features from the two platforms are what is now known simply as Firebase. In early 2017, Google acquired Fabric.io from Twitter, Inc. and is now in the process of integrating key Fabric features into Firebase. This book covers the key features of Android app development using Firebase. Topics covered in this book include user authentication, cloud-based file storage, instant messaging, dynamic links, app indexing, cloud functions, analytics, performance monitoring and more. The book is organized into chapter groups that focus on specific Firebase features, with each topic area consisting of a detailed overview followed by tutorial style examples that put theory into practice

Firebase provides a Realtime database and backend as a service. The service provides application developers an API that allows application data to be synchronized across clients and stored on Firebase's cloud. Cloud Firestore which is Firebase's next generation of the Realtime Database was released for beta use.

3.3.1 FIREBASE CLOUD MESSAGING

Firebase Cloud Messaging (FCM) is a cross-platform messaging solution that lets you reliably deliver messages at no cost.

3.3.1.1 WORKING

- An FCM implementation includes two main components for sending and receiving:
- A trusted environment such as Cloud Functions for Firebase or an app server on which to build, target, and send messages.
- An Android+ client app that receives messages. You can send messages via the Admin SDK or the HTTP and XMPP APIs.

Figure 3.4 Firebase Cloud Messaging

With the assistance of Firebase push notice, we are sending a warning through a Programming Linkage which has been facilitated on 000Webhost.com. The warning has been sending from superintendent application to student application and vice-versa.

CHAPTER 4-SOFTWARE APPROACH

Software approach is the sequence of steps involved in the development process along with the software used in each step. Software approach refers to the application of teaching-learning principles to the direct & deliberate shaping of behaviour. Its origin lies in the application of "behaviour science" to the problems of learning & motivation. This view of educational technology is closely associated with the modern principles & theories of teaching. Models of teaching, theory of instruction, theory of teacher- behaviour & principles of programmed learning. It is characterized by task analysis, writing, objectives in behavioural terms, selection of the appropriate teaching strategies, reinforcement for correct responses & continuous evaluation.

- Origin of software approach lies in the application of 'behavioural science' to the education.
- It refers to the application of teaching- learning principles in the shaping of behaviour.
- We can views its application while writing objectives in behavioural terms, selection of appropriate teaching, strategies, reinforcement for correct response etc.

4.1 ANDROID STUDIO

It is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.

Android Studio was announced on May 16, 2013 at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting from version 0.8 which was released in June 2014. The first stable build was released in December 2014, starting from version 1.0. The current stable version is 3.2.1, which was released in October 2018.

Android is an open source and Linux-based Operating System for mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance, led by Google, and other companies. Android offers a unified approach to application

development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android. The first beta version of the Android Software Development Kit (SDK) was released by Google in 2007 where as the first commercial version, Android 1.0, was released in September 2008. On June 27, 2012, at the Google I/O conference, Google announced the next Android version, 4.1 Jelly Bean. Jelly Bean is an incremental update, with the primary aim of improving the user interface, both in terms of functionality and performance. The source code for Android is available under free and open source software licenses. Google publishes most of the code under the Apache License version 2.0 and the rest, Linux kernel changes, under the GNU General Public License version 2.

Android applications are usually developed in the Java language using the Android Software Development Kit.

Once developed, Android applications can be packaged easily and sold out either through a store such as Google Play, SlideME, Opera Mobile Store, Mobango, F-droid and the Amazon Appstore.Android powers hundreds of millions of mobile devices in more than 190 countries around the world. It's the largest installed base of any mobile platform and growing fast. Every day more than 1 million new Android devices are activated worldwide.

This tutorial has been written with an aim to teach you how to develop and package Android application. We will start from environment setup for Android application programming and then drill down to look into various aspects of Android applications.

The code names of android ranges from A to N currently, such as Aestro, Blender, Cupcake, Donut, Eclair, Froyo, Gingerbread, Honeycomb, Ice Cream Sandwitch, Jelly Bean, KitKat, Lollipop and Marshmallow. Let's understand the android history in a sequence.

API Level is an integer value that uniquely identifies the framework API revision offered by a version of the Android platform.

Email is messages distributed by electronic means from one system user to one or more recipients via a network.

Before starting Email Activity, You must know Email functionality with intent; Intent is carrying data from one component to another component with-in the application or outside the application.

To send an email from your application, you don't have to implement an email client from the beginning, but you can use an existing one like the default Email app provided from Android, Gmail, Outlook, K-9 Mail etc. For this purpose, we need to write an Activity that launches an email client, using an implicit Intent with the right action and data. In this example, we are going to send an email from our app by using an Intent object that launches existing email clients.

4.2 AGORA.IO

Agora.io is on a mission to change the way the world communicates. We developed the industry-leading real-time communication framework that serves over 10 billion minutes a month of real-time video, audio, and live interactive broadcasting. To date, we have over 500 million SDK installs and empower users in over 100 countries around the globe.

Agora's SD-RTN™ is the world's most widely used and intelligent RTC network.

- **SUB-SECOND LOW LATENCY:** Agora delivers sub-second end-to-end global latency with algorithms which monitors in real-time and selects the most efficient routing path automatically.

- **REACH MATTERS**: Agora's SD-RTN™ is the world's most widely used and intelligent RTC network, dedicated to extreme low latency, high availability real-time voice, and video within and across borders.(99.995% uptime)

- **SCALE WITH CONFIDENCE:** Agora supports over 1,000,000 peak concurrent users (CU) in a single broadcast channel. Our elastic SD-RTN™ can scale from 1 to 1 million users overnight.

- **RELIABILITY:** A lightweight client-side codec optimized to work on the widest range of underpowered devices. 5500 supported & continuously monitored devices. Agora has you covered with over 200 distributed data centers across the globe.

CHAPTER 5-SYSTEM ANALYSIS & DESIGN

System analysis is a process of collecting and interpreting facts, identifying the problems, and decomposition of a system into its components. System analysis is conducted for the purpose of studying a system or its parts in order to identify its objectives. It is a problem solving technique that improves the system and ensures that all the components of the system work efficiently to accomplish their purpose. Analysis specifies what the system should do.

System design is a process of planning a new business system or replacing an existing system by defining its components or modules to satisfy the specific requirements. Before planning, you need to understand the old system thoroughly and determine how computers can best be used in order to operate efficiently. System Design focuses on how to accomplish the objective of the system.

5.1 REQUIREMENT SPECIFICATION

5.1.1 Soft Skills:

1. Android development
2. Agora.io
3. Firebase

5.1.2 Tools used:

Android Studio

5.2 WORK FLOW DIAGRAM

Workflow diagram depicts a series of actions that define a job or how work should be done. A workflow diagram visualizes how tasks will flow between resources, whether they're machines or people and what conditions allow the sequence to move forward. This workflow can be illustrated or described with a flowchart using abstract boxes and diamonds or it can be created with depictions of real-life objects using graphics and pictures that represent customers, forms, finance, products, shipping, payments, and more. For software development, a workflow diagram defines a series of steps a process must execute consistently.

A workflow chart is commonly used for documentation and implementation purposes since it provides a general overview of a business process. It's often the foundation for other documentation including flowcharts, data flow diagrams, projects, and more.

Each step in the workflow is represented with a pictorial symbol or an abstract shape like a box. The steps are connected with arrows that indicate the flow from beginning to end.

Work flow diagram for student is shown in fig. 5.1

1. New user: The user is logged in/ registered. If he/she is a registered user then they'll be taken to S&L Dashboard else login page will appear.
2. S&L Dashboard: This will list out all the categories, quiz and will further schedule call with the experts and completing quiz will take place by respective tabs.
3. Payment: To schedule the call certain payment will be done and accordingly the schedule will be fixed.

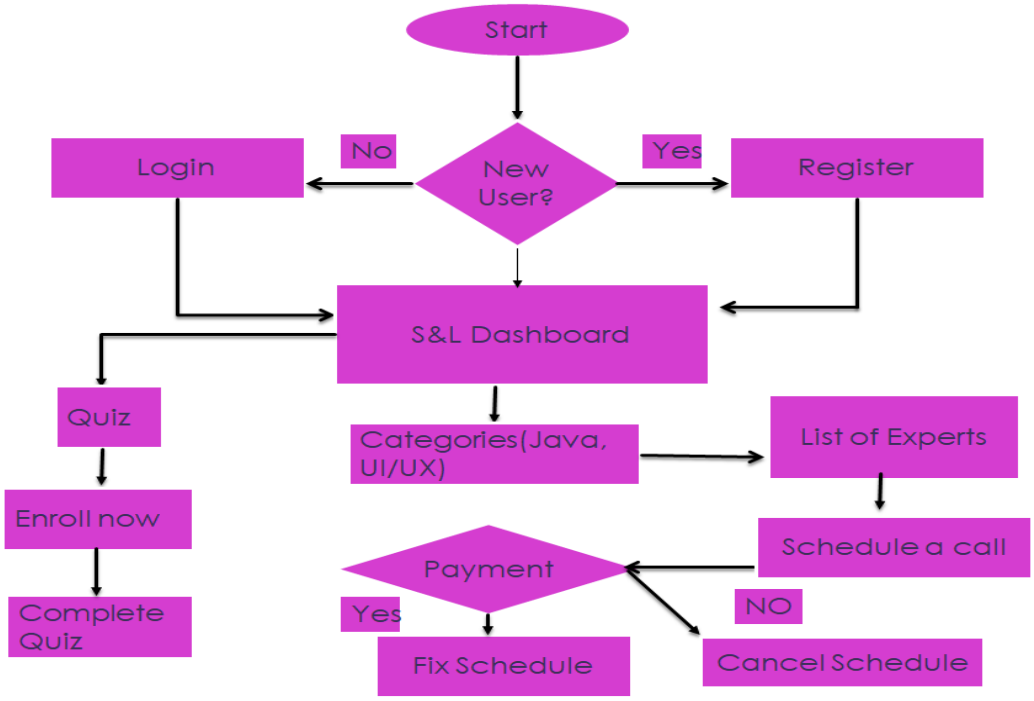

Figure 5.1 Work flow diagram for student

Work flow diagram for tutor is shown in fig. 5.2

1. New user: The user is logged in/ registered. If he/she is a registered user then they'll be taken to S&L Dashboard else login page will appear.
2. Dashboard: It will lead to the database of Approved, Denied and Pending Video Calls.

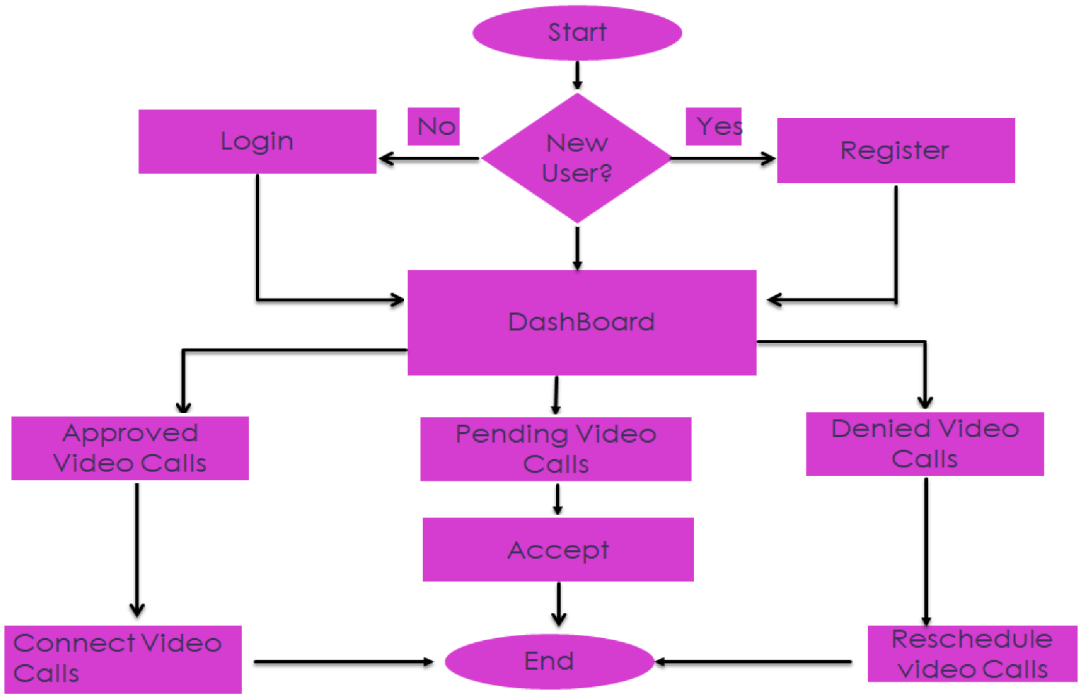

Figure 5.2 Work flow diagram for tutor

5.2 USE CASE DIAGRAM

5.3.1 Name: Seek & Learn

5.3.2 Actors: Student, Tutor

5.3.3 Entry Condition:

- Signing up
- Login

5.3.4 Exit Condition:

- Scheduled call is completed from both ends or denied.

5.3.5 Video call is either completed successfully or denied.

Use case diagram is shown in fig. 5.2

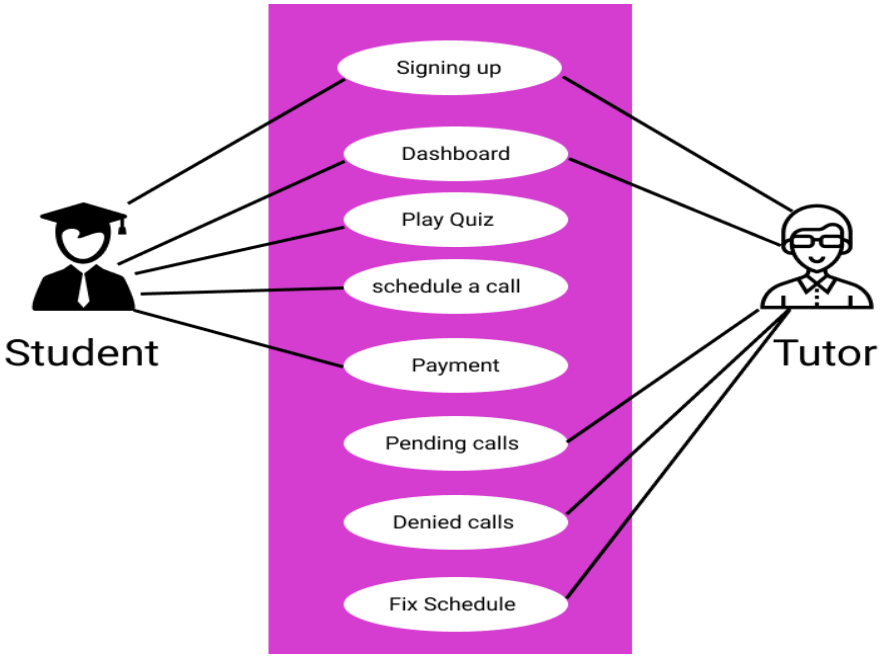

Figure 5.3 Use case diagram

5.4 DATA FLOW DIAGRAM

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyze an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually "say" things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. That's why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.

5.4.1 Actor1(Input by student): Mail id , password

5.4.2 Verification process: The given data is verified.

5.4.3 Send/Receive video calls: It includes video calling which is either completed or denied.

5.4.4 Actor2(Input by Tutor): Mail id, password

5.4.5 Calls: Video calls are accepted or denied from the database.

5.4.1 LEVEL 0: DFD Level 0 is also called a Context Diagram. It's a basic overview of the whole system or process being analyzed or modelled. It's designed to be an at-a-glance view, showing the system as a single high-level process, with its relationship to external entities. It should be easily understood by a wide audience, including stakeholders, business analysts, data analysts and developers.

Data flow diagram- level 0 is shown in fig. 5.3

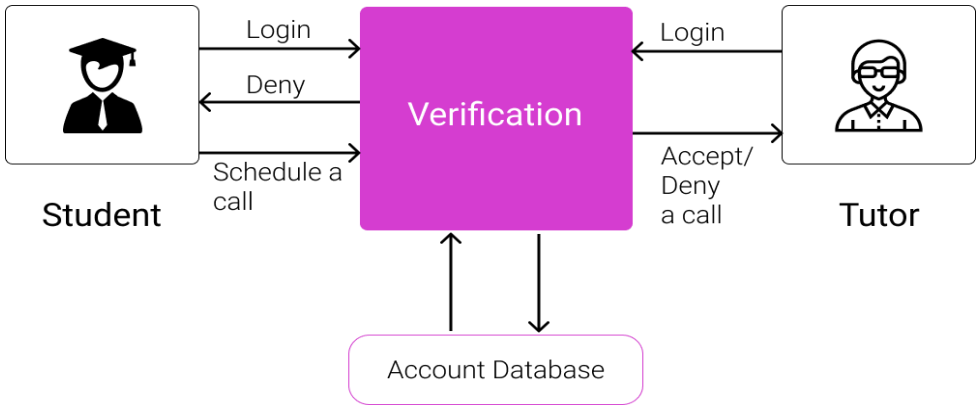

Figure 5.4 Data flow diagram- level 0

5.4.2 LEVEL 1: DFD Level 1 provides a more detailed breakout of pieces of the Context Level Diagram. You will highlight the main functions carried out by the system, as you break down the high-level process of the Context Diagram into its sub processes.

Data flow diagram- level 1 is shown in fig. 5.4

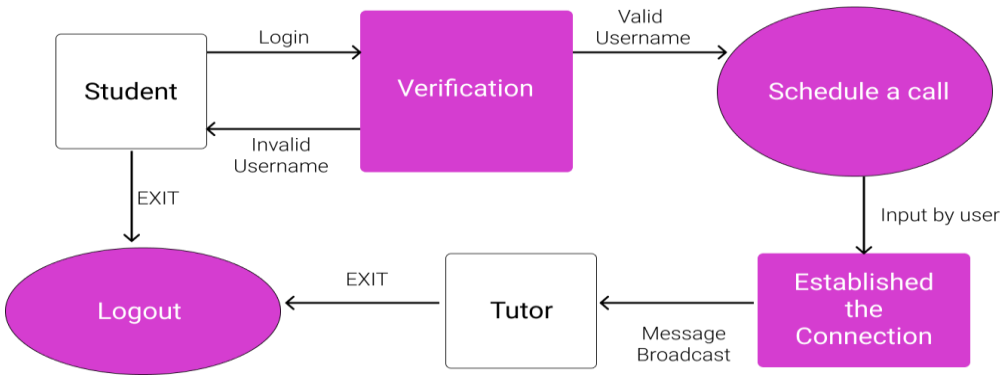

Figure 5.5 Data flow diagram- level 1

5.4.3 LEVEL 2: DFD Level 2 then goes one step deeper into parts of Level 1. It may require more text to reach the necessary level of detail about the system's functioning.

CHAPTER 6 – RESULT AND DISCUSSION

In this chapter we will know about the result of our proposed work. The further chapter will contain a demonstration of how our application works with instructions and commands with every step from the beginning to the very end. The main page is where all the action of the application will be happening thus refraining us from complex page to page jumping.

Later on in the discussion we have included different scenarios due to which the application will fail to work as described above in the system.

6.1 USER INTERFACE

Main Page- As and when the user will install the application on his mobile phone, he will be valid to use the App. The user will be directly brought to the home page on tapping the App Icon on his phone. The Main screen will consist of an upper banner stating "SEEK & LEARN" followed by the logo of the application. Three subsequent pages related to the app will appear after that. The user will be needed to swipe each to reach the login/signup page. Main page of the project is shown in fig. 6.1.

The student/tutor will then enter their respective mail IDs and passwords. After this they will be taken to their respective dashboards. Login/Signup page is shown in fig. 6.2.

Next, the students will be able to select their respective area of interests. Videos, messaging and calls option will be available to the student. He could make a specific payment to schedule the calls. Students dashboard is shown in fig. 6.3.

Meanwhile, the tutor will be able to see the call logs with the students. It will consist the accepted, denied and pending calls with the students. Tutors dashboard in the project is shown in fig. 6.4.

The application synchronises itself and the video calls is made between the student and tutor after the payment is made by the student and the call is accepted by the tutor.

6.2 DISCUSSION

However the application fails to work as expected in the following cases:

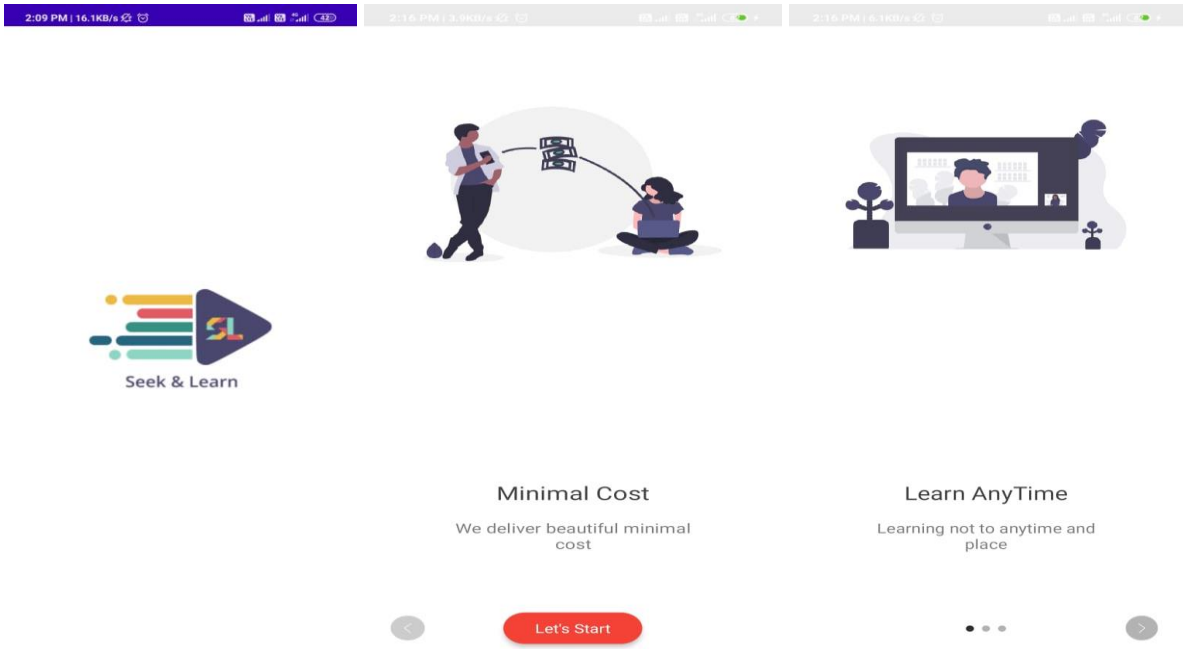

Figure. 6.1 Main page

1. If the mobile phone is of greater than Android 8.0 Oreo. The application will thus be needed to get updated as required with introducing new Android and OS updates.

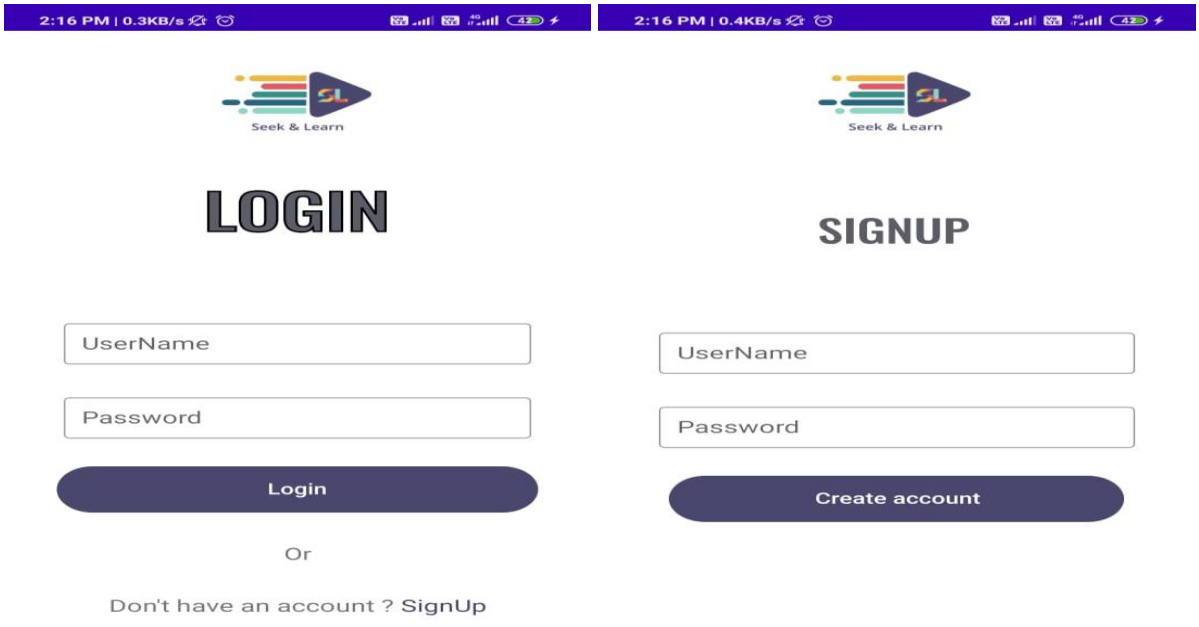

Figure 6.2 Login/Signup Page

1. If the student/tutor has not signed up earlier they need to sign up and then login again.

2. If wrong credentials are provided. In this case the user will be needed to reopen the app and give all the information again from the beginning.

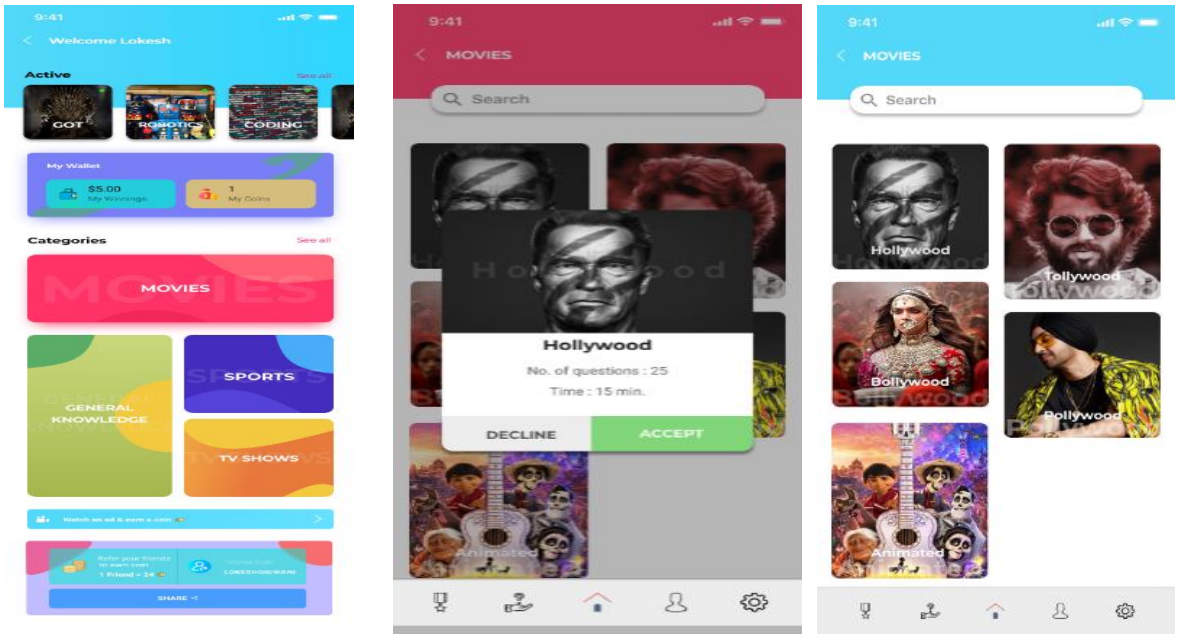

Figure 6.3 S&L Dashboard

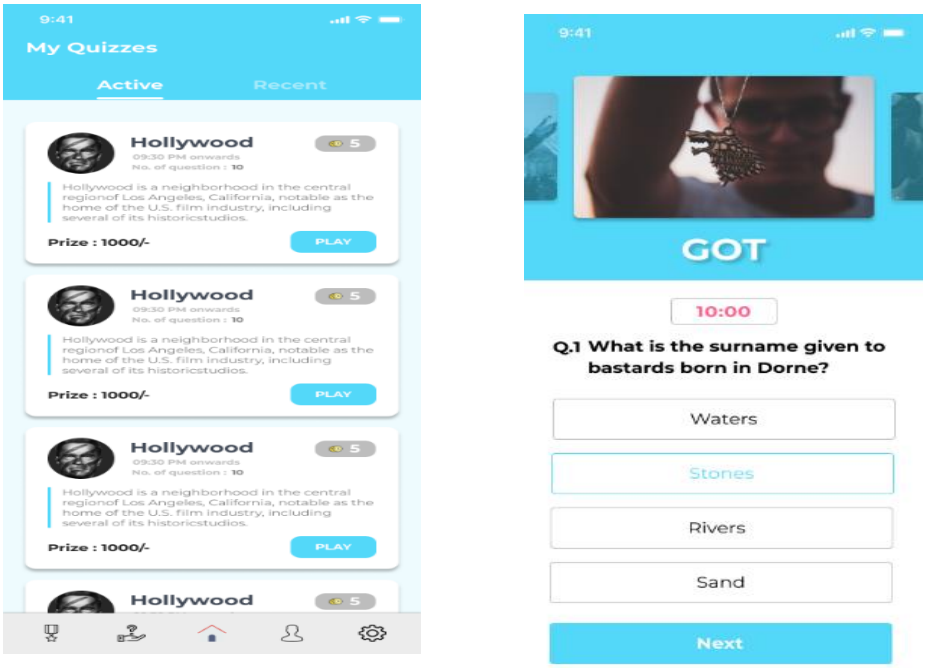

Figure 6.4 S&L Dashboard

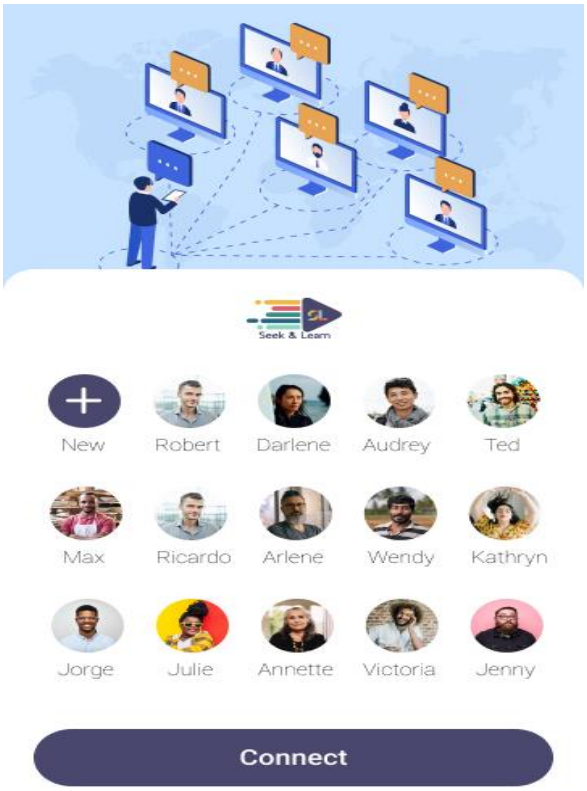

Fig. 6.5 Video calling Dashboard

CHAPTER 7- CONCLUSION AND FUTURE WORK

In this chapter we will discuss about the final conclusion and aim of our final project along with the future updates and how we will be improving the system with updates introductions.

7.1 CONCLUSION

The application is designed in such a way that it succeeds in implementing the basic features of taking quiz, messaging and making video calls.

Unlike current system, this system focuses more on students who cannot attend live classrooms and who can go through this app to reach a tutor who can personally help him by video calling to solve his/her problems.

SEEK & LEARN is an android application that is purely for the benefits of the students to provide them with efficient access for video calling, mailing and taking quiz regarding their respective area of interests.

7.2 FUTURE WORK

The application we are developing will be facilitated to work on Android with Oreo 8.0 or less. A more secure system will be established in the future with more promising modifications for benefits of the user.

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