“Vernin – Android Platform for PWDs to connect with voluntary Scribes & Readers”

Submitted in partial fulfilment of the requirements

of the degree of

(Bachelor of Engineering)

by

Kunal Kailash Kasa

Ajit Prabhunath Goud

Akash Anil Mishra

Supervisor:

Prof. Shweta Sharma

(Computer Engineering)

AET’s

Atharva College of Engineering

(2019-2020)

Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Kunal Kailash Kasa

Ajit Prabhunath Goud

Akash Anil Mishra

Date:

Project Report Approval for B.E.

This project report entitled **"*Vernin – Scribe Finder*"** by ***Name of Students*** is approved for the degree of ***Bachelor of Engineering in Computer Engineering.***

Internal Examiner

External Examiner

Date: _____

Place: _____

College Seal

AET'S
ATHARVA COLLEGE OF ENGINEERING

CERTIFICATE

This is to certify that

Kunal Kailash Kasa

Ajit Prabhunath Goud

Akash Anil Mishra

Have satisfactorily completed the requirements of the B.E Project Report

On

"Vernin – Scribe Finder"

*As prescribed by the **University of Mumbai** Under the guidance of*

Guide
Prof. Shweta Sharma

	Prof Suvarna Pansambal	**Dr S.P.Kallurkar**
Project Coordinator	**Head (Computer Engineering)**	**Principal**
(April 2020)	**College Seal**	**Date:**

Acknowledgement

We are highly indebted to Atharva College of Engineering for their guidance and constant supervision as well as for providing necessary information regarding the project and also for their support in completing the project black book. We feel obliged that our Principal Dr. Shrikant Kallurkar have given us such a platform to showcase our technical prowess and knowledge.

We would like to express our gratitude towards our parents and the members of Atharva College of Engineering, especially our guide Prof. Shweta Sharma, Prof. Suvarna Pansambal (HOD) and the project coordinators Dr Mamta Meena and Prof. Samidha Kurle for their kind cooperation and encouragement which helped us in completion of this project synopsis.

Our special thanks and appreciations also go to our colleagues in the development of our project synopsis and also to the people who have willingly helped us out with their abilities

Abstract

Physically challenged Students do not have it easy when finding suitable scribes and readers for their examinations. The reasons are evident as there is no one particular platform for them to post their requirements. Availability, Compatibility, Eligibility of scribe/reader are few of the major concerns for Pwds while finding a scribe/reader and the current means which are being used aren't efficient enough.

For this problem a platform or portal which will help Pwds to connect with voluntary scribes/readers is a must and is also a good approach/solution. Vernin – Scribe Finder is an Android platform for Pwds and voluntary Scribes both, to create a better community for Pwds and scribe, where effective communication can be carried out. On this platform Pwds can post their requirements and on the other hand interested Scribes can accept those requests, connect with the Pwd and ultimately help them with their examinations.

Index

List of Figures

List of Tables

1. INTRODUCTION

Vernin is an android application for associating Scribes and PWDs, the associated Scribes can assist the PWDs with their tests and at last lead them to accomplish their objectives.

1.1 Need

There's an unmistakable requirement for a specialized answer for this issue in light of the fact that all alone discovering reasonable Scribes and Readers isn't a simple errand for PWDs, implies like online networking posts and messages are utilized, a large portion of which are not reacted in time and are somewhat immersed.

Inspiration for building up an application like this is to help PWDs discover Scribes and Readers without breaking a sweat and assist them with focusing more on examines instead of the idea of how to discover Scribes or Readers.

1.2 Basic Concept

The base idea is to manufacture an android stage for both PWDs and Scribe. This gateway will give PWDs the alternative to post their test Requirements and Details on which the Scribes can acknowledge the posts in the event that they are accessible and qualified for that assessment.

1.3 Applications

1. Foundations and NGO’s can make use of this application
2. PWD’s living with their parents can also use this application
3. Voluntary Scribes can get a platform to help Special children using this application

2. REVIEW OF LITERATURE

1. The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act. 1995 [1]

In "The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995". Published in Part II, Section 1 of the Extraordinary Gazette of India. Ministry of Law, Justice and Company Affairs; New Delhi, the 1st January, 1996/Pausa 11, 1917 (Saka), Chapter V Point 31, stated "All educational institutions shall provide or cause to be provided amanuensis to blind students and students with or low vision." Here, it was stated that the examination body itself should provide scribes/readers/lab assistants to those students who are blind or have low vision. Other disabilities were not included and could not avail for Scribes/readers/lab assistants. This was one of the huge let downs of this act and it couldn't achieve it's expected goals.

2. The Rights of Persons with Disabilities Act, 2016, Gazette of India (Extra-Ordinary); 28 December. 2016 [2]

The short comings of the "The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995" were evident and so we required a new Act. In order to ensure all the rights of persons with disabilities, the United Nation convened a conference on the Rights of Persons with Disabilities in 2006, during which UNCRPD included 50 articles of different aspects of disability related issues, which was reaffirmed by the 160 member states including India in the year 2007. Keeping in view the principles of the United Nations Conference 2006, a new Act was passed while making necessary amendments in the provisions of the Act 1995. The right of the person with disability, Act of 2016 received the pronunciation of the President on December 27, 2016 and was published in the Official Gazette on 28 December 2016, which came into effect from 15 June 2017. Section 102 of this Act speaks of cancellation of comprehensive law in that it means that the Act of 1995, the persons with disability (equal opportunity, protection of rights and full participation) The proposal of this Act clearly states that its purpose is to maintain the dignity of every person in the society and prevent any kind of discrimination. It speaks about the acceptance of people with any type of disability and ensures their full participation in such persons and society. Here, 21 different conditions are included such as cerebral palsy, dwarfism, muscular

dystrophy, acid attack victims, hard of hearing, speech and language disability, specific learning disabilities, autism spectrum disorders, chronic neurological disorders such as multiple sclerosis and Parkinson's disease, blood disorders such as hemophilia, thalassemia, and sickle cell anemia, and multiple disabilities. The nomenclature mental retardation is replaced by intellectual disability which is defined as “a condition characterized by significant limitation both in intellectual functioning (reasoning, learning, problem-solving) and in adaptive behavior which covers a range of every day social and practical skills including specific learning disabilities and autism spectrum disorders.” The Act provides an elaborate definition of mental illness which is “a substantial disorder of thinking, mood, perception, orientation, or memory that grossly impairs judgment, behavior, and capacity to recognize reality or ability to meet the ordinary demands of life but does not include retardation which is a condition of arrested or incomplete development of mind of a person, especially characterized by sub normality of intelligence.”

3. Guidelines for conducting written examination for persons with benchmark disabilities [3]

The Ministry of Social Justice and Empowerment has issued the "Guidelines for conducting written examination for persons with benchmark disabilities ". Person with Disabilities and Organizations should adhere to these guidelines for smooth process of examination. Now, let’s go through the key guidelines for conducting examinations for PWDs. There should be a uniform and comprehensive policy across the country for persons with benchmark disabilities for written examination taking into account improvement in technology and new avenues opened to the persons with benchmark disabilities providing a level playing field. Policy should also have flexibility to accommodate the specific needs on case-to-case basis. Every Examination Board should have a concrete policy for person with benchmark disabilities, Universities rules may vary but the end policy towards PWDs are to be fair and should provide equal opportunities to all students. Different disabilities mentioned in the Rights of Persons with Disabilities Act, 2016 should be considered when providing provisional facilities. All types of examinations should have same policies under a particular Board i.e. no changes in policies if the format or type of examination changes (competitive and regular). Persons with benchmark disabilities should be

given, as far as possible, the option of choosing the mode for taking the examinations i.e. in Braille or in the computer. In case, the persons with benchmark disabilities are allowed to take examination on computer system, they should be allowed to check the computer system one day in advance so that the problems, if any in the software/system could be rectified. Use of own computer/laptop should not be allowed for taking examination. However, enabling accessories for the compute-based examination such as keyboard, customized mouse etc., should be allowed. Thereafter, the examining body should ensure availability of question papers in the format opted by the candidate as well as suitable seating arrangement for giving examination. As far as possible the examination for persons with disabilities should be held at the ground floor. The examination centers should be accessible for persons with disabilities.

4. Research on Development of Android Applications [5]

In this paper we have seen essential working procedures of Android application parts. This paper could give direction to understanding the activity instrument of Android applications and to creating applications on Android stage. Likewise, a music player is appeared for instance.

5. 2016 Akshay Singh and Sakshi Sharma performed a work "Android Application Development using Android Studio and PHP Framework" [6]

In this paper "Android Application Development using Android Studio and PHP Framework" writer described that This era is very great and exiting for mobile developers. Android supplies a well-off application structure that permits you to develop imaginative applications and amusements for android cell phones utilizing Java dialect condition. Android proposes a brought together approach for application advancement on cell phones which implies that engineers require produce for the Android, and their applications ought to have the capacity to keep running on various gadgets controlled by Android.

3. REPORT ON THE PRESENT INVESTIGATION

Existing System

The main application identified with the present issue nearby present in the Market is "ScribeFinder" application which is created by Bangalore based understudies Sri slam and Shrikant. The application is only a contact data center point for PWD to discover Scribes or Readers.

Features

Let's see the features that this application has

1. Sign up/Login for both Scribes and Visually challenged students
2. Document upload and verification system
3. Search Scribe
4. Study Material
5. Upload Notes/View uploads

General Working:

Both the Scribes and Needy/Visually impaired students can register themselves on the application. The Needy/Visually impaired students then have an option of Search for Scribe.

This then allows them 2 options, first is "Search near me" and the second is based on location the Needy/Visually impaired student enters; State, District, City. On doing this the Needy/Visually impaired students will be provided with a list of contact information of volunteers present in that location; details like contact number and mailing information are present.

Then the Needy/Visually impaired student may contact the Scribe for his availability and then the Scribe may say yes to write the exam.

Limitations

1. No automated process
2. Limited Languages, Locations
3. Need to contact each Scribe individually and repeat details
4. No feedback system
5. No tracking system

4. AIM AND OBJECTIVES

Aim

Our Aim is to make a solid network for Special youngsters, volunteers and Scribes wherein we can assist unique kids with their training and furnish them with a domain which will assist them with developing in general, in instruction as well as different aptitudes as well. Likewise persuade the young to effectively take part in intentional social work..

Objectives

1. To ease the task of finding Scribes for PWDs
2. To provide PWDs faithful and active Scribes
3. To spread the notion of voluntarily work amongst the youth of the Nation
4. Solve few of the education problems faced by special children
5. To provide a platform for active volunteers
6. To remove fake messages and posts which go on social media platforms
7. To improve the overall situation of exams for PWDs

5. PROBLEM STATEMENT

PWDs face the problem of not finding faithful Scribes on their own; after the RPWD act 2016, PWD should get Scribes on their own for examinations. In order to solve this problem, develop a technical solution which is cost effective, reaches more audience and which will make the entire process of finding Scribes easy for the PWDs.

6. PROPOSED SYSTEM FOR PROJECT

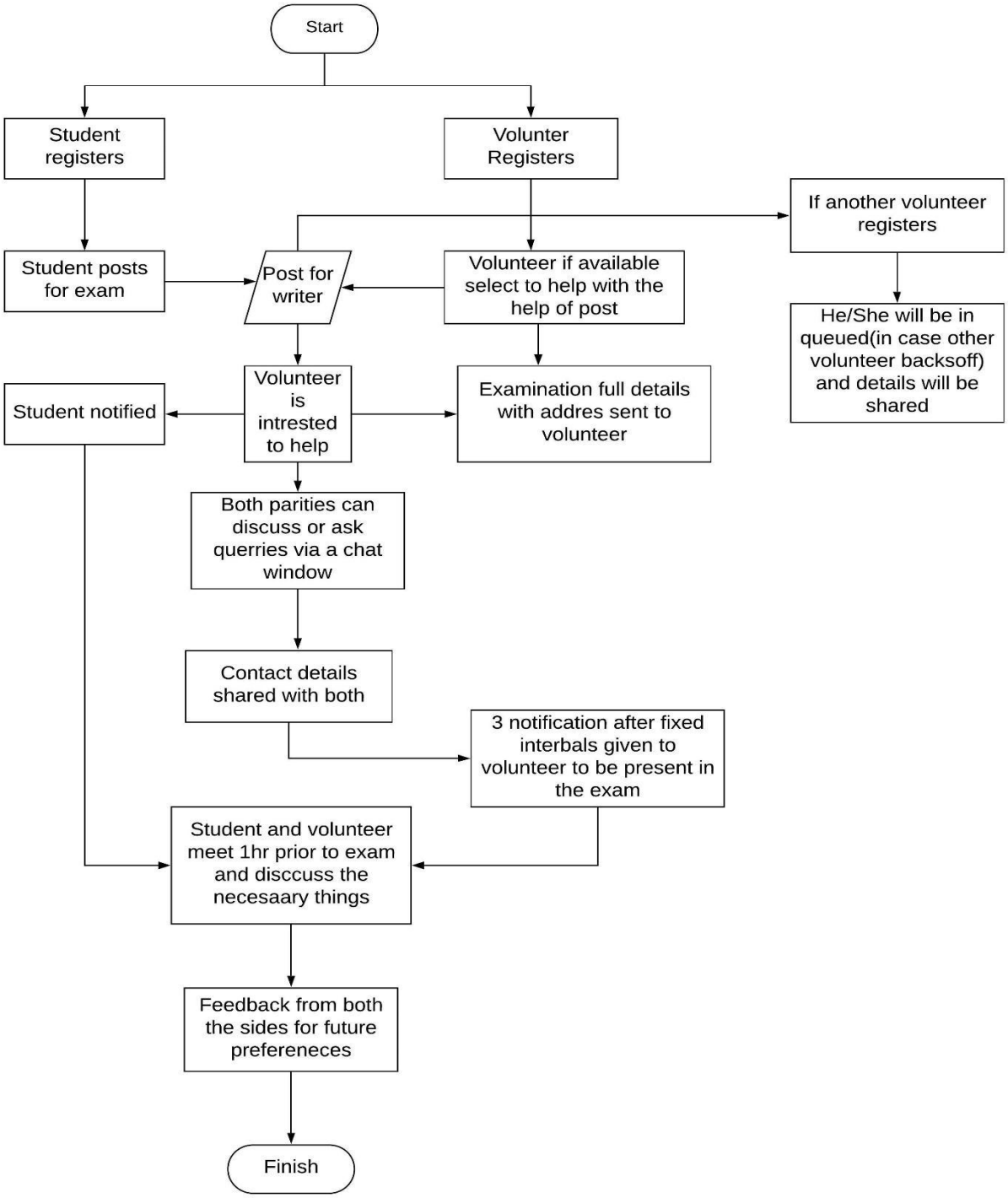


Fig No. 6.0.1: Block Diagram

Explanation

First both the Scribes and PWDs register themselves on the application, both enter their subtleties and transfer fundamental archives to get themselves checked as a genuine client, OTP/mail framework would be utilized to affirm mail id/versatile number.

Next the PWDs have an option to post their exam details and Scribe requirements in the application, next up this post is then shown to scribes present in the mentioned location, locations where the post can be shown is variable based on the location Example, a post of Mumbai will be shown to Scribes living in Mumbai. Now when Scribes see the post they either have the option of accepting the post or not accept it, If the post requirements match with the Scribe's profile and if he's interested and available then he can accept the post on which a notification will go to the PWD who posted the post. Further they both can talk on the messenger that our application provides on successful acceptance of post.

In case of multiple people accepting the post the second and third Scribe will be listed in a queue which will notify them in case of emergency they are the once we'll be needing. After 3 acceptance of the post the post will be closed. Back to the messenger, here we have only text messages, no emojis or gifs are allowed. We will also have a report system in case any bad conversation is going on and we'll resolve it as quickly as possible.

Now, after successful conversation from both the Scribe and PWD they can exchange their contact information and further discuss the details. We have a 3-notification system where in the Scribe will be notified about the exam 3 times with intervals in them, Scribe is expected to be present 1 hour prior to the exam on the exam center.

Live Location Tracking system will enable the PWD to see if the Scribe has left for the exam or not and if the Scribe is not coming then the next 2 Scribes who were in the waiting list will be informed by the PWD, so we can give a little assurance of some scribe being available.

A feedback system will also be present for both the Scribes and PWD which will get triggered after the exam or at a specific time on the exam day, by this feedback system we can get feedback from the Scribe and PWD about the exam and conduct of each other, based on the feedback we'll have a credit system for the Scribes. If the Scribe is reported then appropriate action will be taken!

7. REQUIREMENT ANALYSIS (SRS)

7.1 Functional requirements:

This section includes the requirements that specify all the fundamental actions of the software system.

1. Global – (PWD, Scribe)
    1. Download and notify users of new releases
    2. Sign In/Up with multiple platform
    3. User registration
    4. Upload files.
    5. Sign out
    6. Delete account
2. PWD
    1. Create post for requirement request
    2. Submit post
    3. Discard post
    4. Request acceptance notification
    5. Adequate number of scribe's in queue
    6. Chat window
    7. Track location of scribe on exam day
    8. Feedback after
3. Scribe
    1. Accept requirement request post
    2. Send no availability notification
    3. live location with PWD
    4. Receive credit after exam
4. Admin
    1. Admin sign in
    2. User verification
    3. Responding to user's reporting's

7.2 Non-Functional Requirements:

Non-functional requirements are those that do not directly affect the functioning of the system but affect, the performances of the system. Non-functional requirements are those requirements, such as, detail constraints, control mechanisms.

5. Performance Requirements
    1. Performance
    2. Safety
    3. Reliability
6. Software Quality Attributes
    1. Availability
    2. Security
    3. Usability
    4. Maintainability

8. FEASIBILITY STUDY

8.1 Technical Feasibility

Technical Feasibility, includes the development of a working prototype of the final product. With Android being the most used operating System and availability of good modules plus the strong customization options, dynamic features, good connectivity offered by Kotlin language and Firebase, implementation of the current product is very much possible.

8.2 Economic Feasibility

Economic feasibility is the cost and logistical outlook for a business project. We'll be using the Spark Firebase which is absolutely free and open source software. Cost incurring will be at time of deployment i.e. Play Store, Maintenance and Upgrades for Firebase, which will be required if the user pool is higher than expected

8.3 Legal Feasibility

Legal feasibility is the study to know if the proposed project conforms the legal and ethical requirements. This application involves copyrights and Terms and Policies agreement which the users should abide by.

8.4 Operational Feasibility

Operational Feasibility is the ability to utilize, support and perform the necessary tasks of a system such as signing ang logging in successfully, verifying the documents uploaded, able to post requirements, messenger implementation and dynamic notifications. It includes everyone who uses the application. With target audience of a good age group, support from NGOs, Foundations and excellent social value the project will sustain.

8.5 Schedule Feasibility

The process of assessing the degree to which the potential time frame and completion dates for all major activities within a project meet organizational deadlines and constraints for affecting change is schedule feasibility. Gathering, Analysis, Design, Coding, Testing and Release are the key phases.

9. METHODOLOGY

9.1 Agile Methodology Application Development

The main reason behind selecting the Agile method is the simplicity of this strategy which is rapid development without too much need of documentation in case of the android application we need to build, check, correct, rebuild, test continuously and every time we make changes we need to go through these steps to verify the results of our work. Agile methodologies including programming, development and project management involve simplifying the software development into small modules, while combining documentation and quality testing at every step. The regular waterfall methodology includes judging the requirements ahead of time with testing and documentation as end steps rather than being the crucial part of development. This methodology provides improvement techniques that are effective and profitable for portable applications advancement.

9.2 Agile is well suitable for faster delivery and short development lifecycle of mobile apps

While the team needs to stay focused on delivering an agreed-to subset of the product's features during each iteration, there is an opportunity to constantly refine and reprioritize the overall product backlog. New or changed accumulation things can be made arrangements for the following cycle, giving the chance to present changes inside half a month. The sans bug speedy conveyance of item is all around upheld by Agile, A key rule of spry advancement is that trying is coordinated all through the lifecycle, empowering normal investigation of the working item as it creates. This permits the item proprietor to make changes if important and gives the item group early sight of any quality issues.

The application comprises the following major modules:

1. **Register Module:** The register module has two different registrations in it one for Scribes and the other for PWD/Special Children.
    - **PWD/Special Children:** For Special children the details that they need to enter during the registration are personal details, official government document specifying the disability of the Child/PWD.
    - **Scribe:** For the Scribes the details required will be personal details, Institutional details, Academic details.

2. **Post Module:** The post module allows the PWD post his requirements. i.e. Exam location, date, qualification needed, subject, time etc. The post will then be posted to all the scribes available in that location and also the nearest locations; for example, if the Exam is in Andheri then Scribes of Borivali – Churchgate will be able to see the post using maps Google Maps api. Now, the Scribe has the option of either Accepting the post or ignoring it based on his availability and qualification. Now, if multiple Scribes accept the post then there will be a queue for those Scribes with max limit being 3. If in any case the first Scribe is unavailable then the next Scribe in the queue will be notified.

3. **Messenger Module:** On successful acceptance of post, the PWD will receive a notification and will be provided with the profile of the Scribe, the messenger will allow them to talk to each other, messenger will not have any emojis, gifs etc plain text would be encouraged, chat monitoring will be maintained as to check if any profanity is present. A report option will also be provided if in case anyone either scribe or PWD would want to report for any profanity.

4. **Live Location Tracking Module:** This module provides the PWD with the live location of the Scribe on the day of the exam as to be assured that the scribe is on his way to the exam, this will allow the PWD to contact with the next Scribe in queue if the first Scribe is unsure of being present at the last moment.

5. **Feedback System:** After the Scribe successfully writes the exam, a feedback form will be sent to both the Scribe and PWD which would be accessible through the notification panel, here both the Scribe and PWD will give valuable feedback on how the overall experience was and if any misconduct by either party was exhibited. This feedback will be then used for the credit grading system for Scribes.

10. Project Design

10.1 Database Design

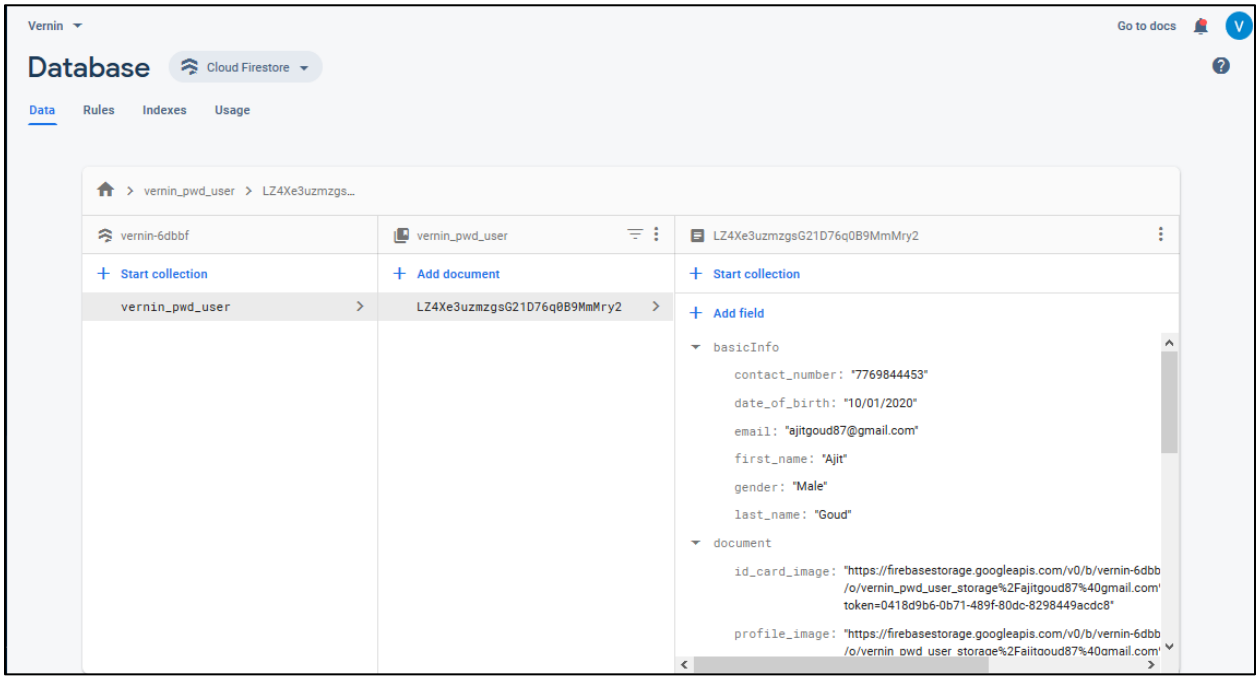


Fig No. 10.1: Database Design

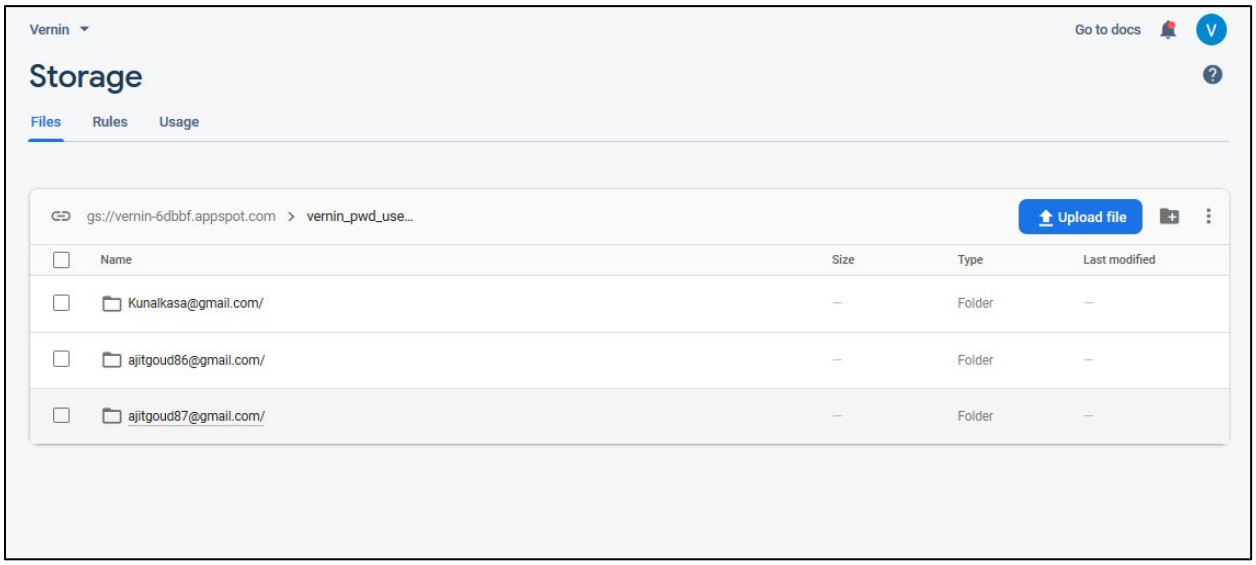


Fig No. 10.2: Storage

10.2 Context Level diagram

The Context Diagram shows the system under consideration as a single high-level process and then shows the relationship that the system has with other external entities (systems, organizational groups, external data stores, etc.). Another name for a Context Diagram is a Context-Level Data-Flow Diagram or a Level-0 Data Flow Diagram.

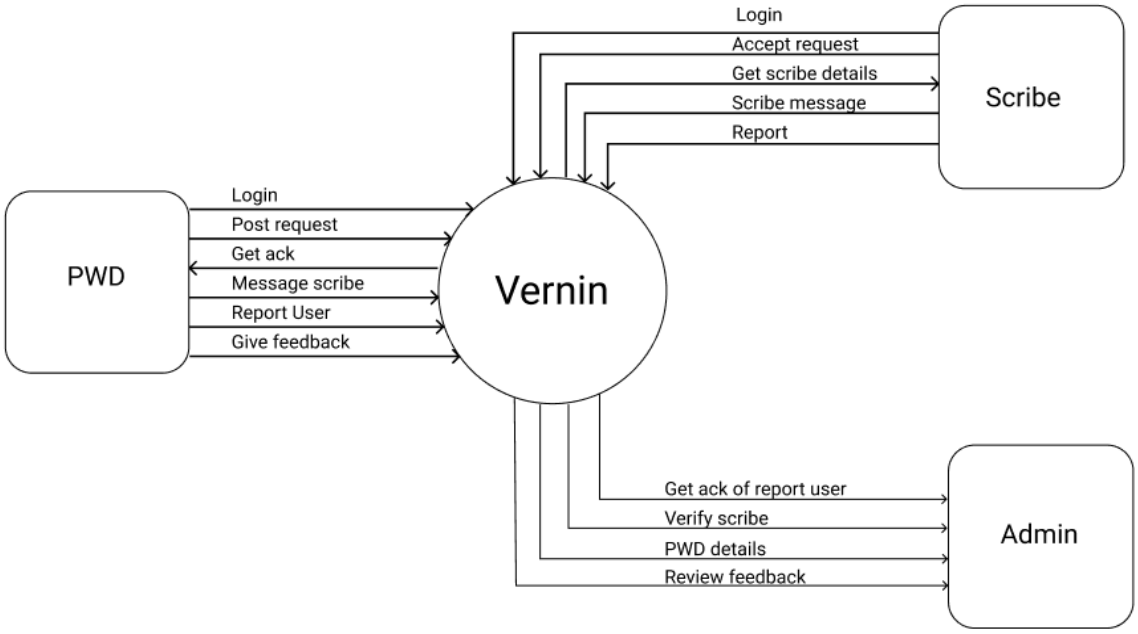


Fig No. 10.2.1: Context Level diagram

10.3 DFD 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.

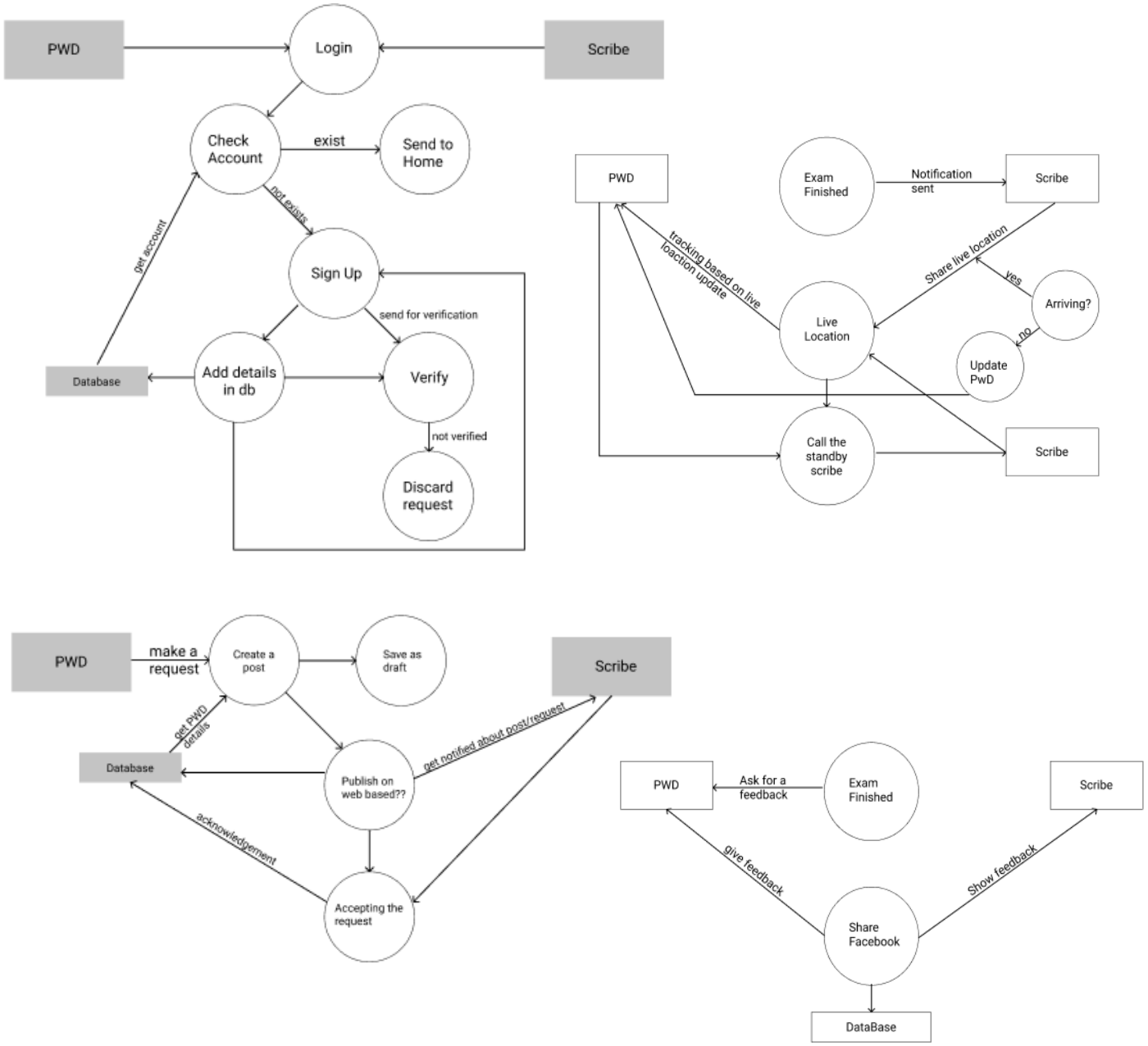


Fig No. 10.3.1: DFD Diagram

10.4 Sequence Diagram

In the sequence diagram, the objects according to their time of execution are listed below. The sequence diagram deals with how the user will flow through the system sequentially and what are the processes that will take place. The objects interact with each other by sending messages to each other. As shown in the figure, the user first uploads the fruit image and then the defect detection system will perform different operations on the fruit image and classify the fruit. The result will be made available to the user.

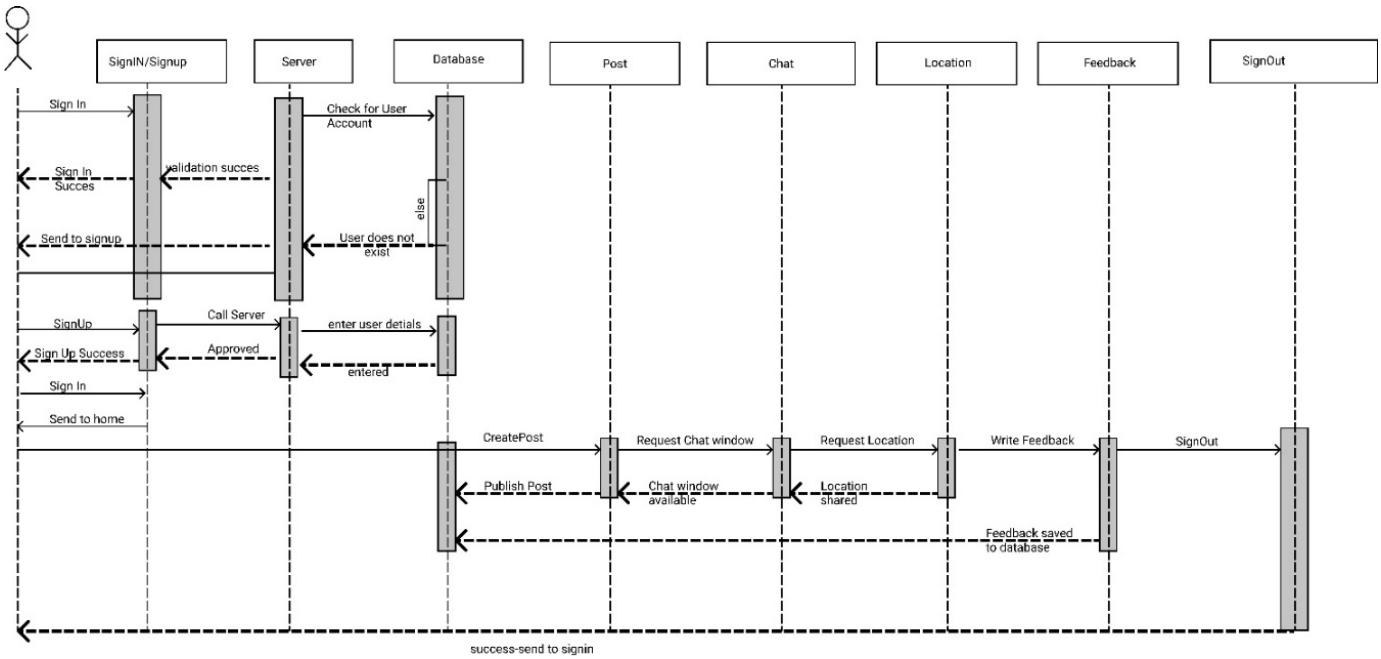


Fig No 10.4.1: Sequence Diagram

10.5 E-R Diagram

The main entities and how they are related with the other is shown in the diagram below. The entities and their key attributes are defined and what entities are interacting with each other for what purposes. There will be a dataset in which the collection of fruit images will be present and each fruit image will be given a unique number and this unique number will act as a primary key. Therefore, the fruit becomes a strong entity. The user selects a fruit and gives it to the defect detection system, the system will inspect the fruit for classifying it as defected or fresh.

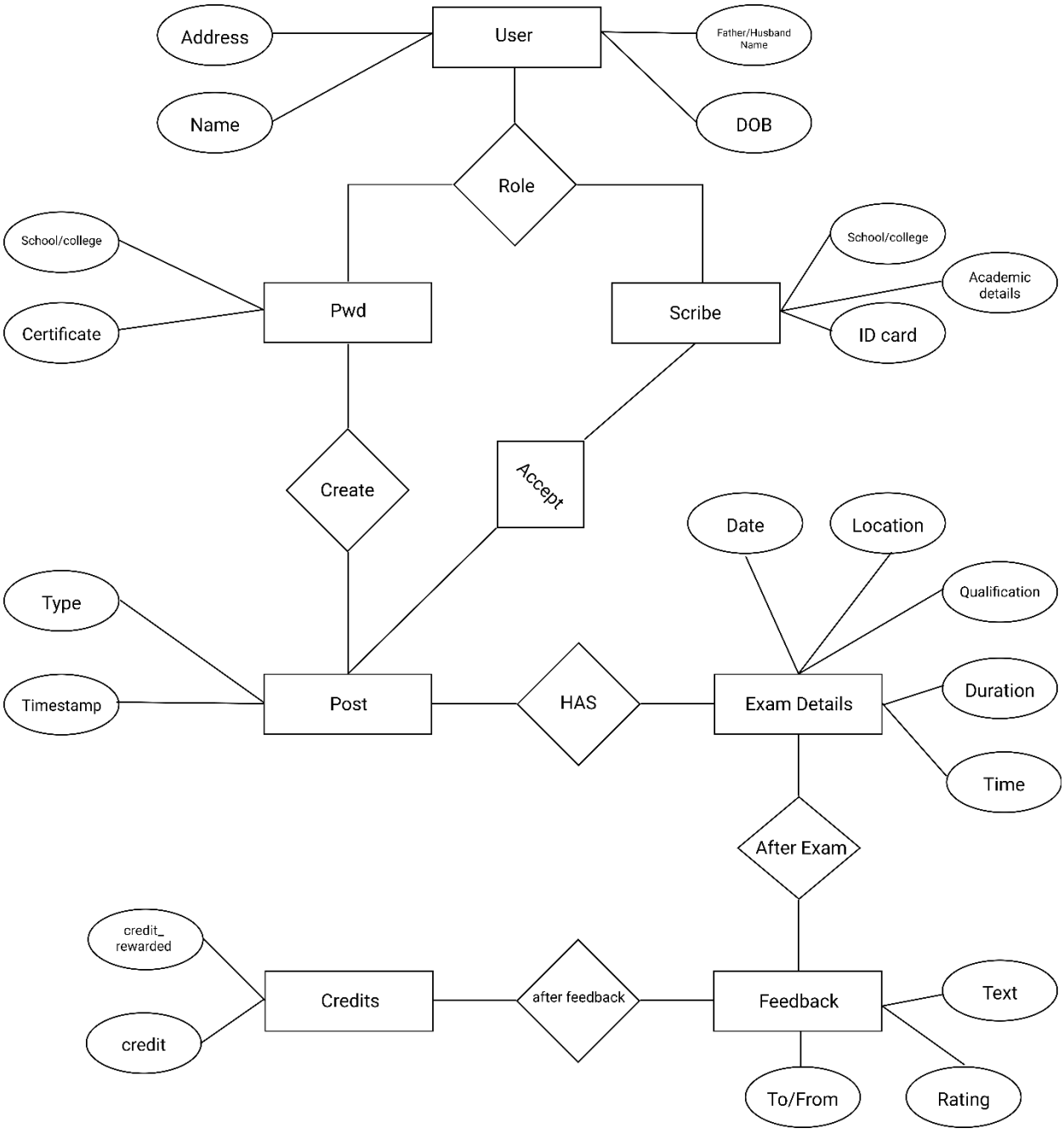
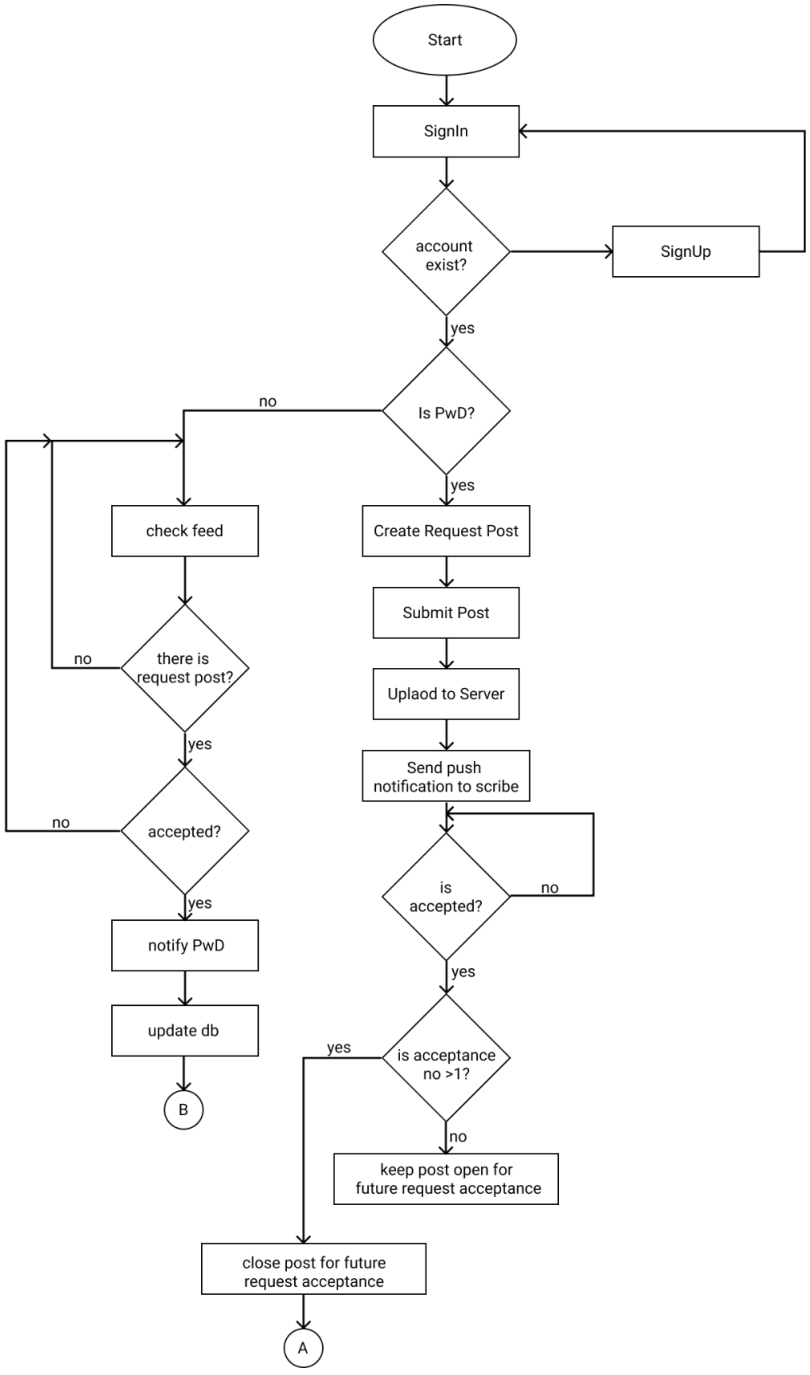


Fig No 10.5.1: E-R Diagram

10.6 Control Flow Diagram

The control flow diagram shows how the user will flow through the system, and how the user's data will flow. The diagram below shows how the user input will be converted to the output, and based on what the user wants to do. The diagram shows the decisions that the system will perform to get the desired output. The intermediate phases are shown in the diagram.



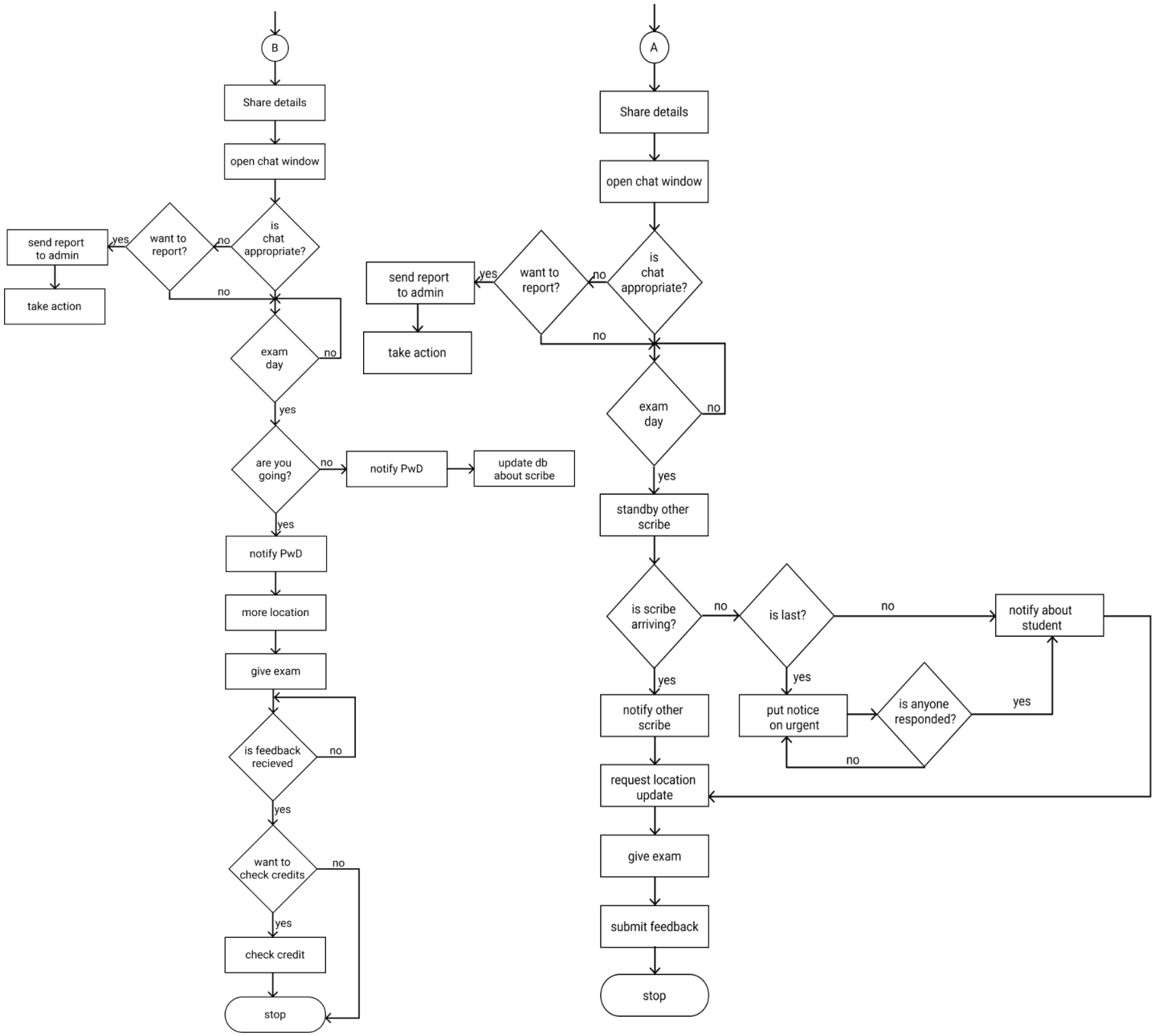


Fig No 10.6.1: Control Flow Diagram

11.Implementation and Experimental Set up

11.1 Operational Requirements

- Basic knowledge of smartphone app usage by the users
- Storage read write permission for documents
- GPS permissions for live location tracking of scribes

11.2

11.2.1 Hardware Requirements

- User Operating System: Android 5.0 and above
- Development Operating System: Windows
- User System RAM: 2 GB and above
- Development RAM: 8 GB and above
- ROM: 10 GB HDD for Android Studio and Emulator
- Dev Processor: Intel i5 and above

11.2.2 Software Requirements

- Development Environment: Android Studio, VS code
- Database: Firebase
- Language: Kotlin, XML
- Designing Tools: Adobe Photoshop, Adobe XD, Figma

11.3 Pseudo Code

Pseudo Code for PWDs:

Step 1: If already registered goto step 3 else continue

Step 2: Register

Step 3: Login

Step 4: New Post

Step 5: Fill necessary details

Step 6: Check for accepted responses

Step 7: Connect with Scribe on inbuilt messenger

Step 8: Notifications before the exam day

Step 9: Get live location of Scribe

Step 10: Exam commences

Step 11: Feedback

Pseudo Code for Scribes:

Step 1: If already registered goto step 3 else continue

Step 2: Register

Step 3: Login

Step 4: Accept Post

Step 5: Connect with PWD on inbuilt messenger

Step 6: Notifications before the exam day

Step 7: Share live location to PWD

Step 8: Exam commences

Step 9: Feedback

11.4 Simulation and Working Environment

The working environment for this application is Android Studio. Development of the application was done on Android Studio with Kotlin as the language and XML for designing. The simulation was done both on emulators and actual Android devices to check compatibilities and to clear dependencies related issues.

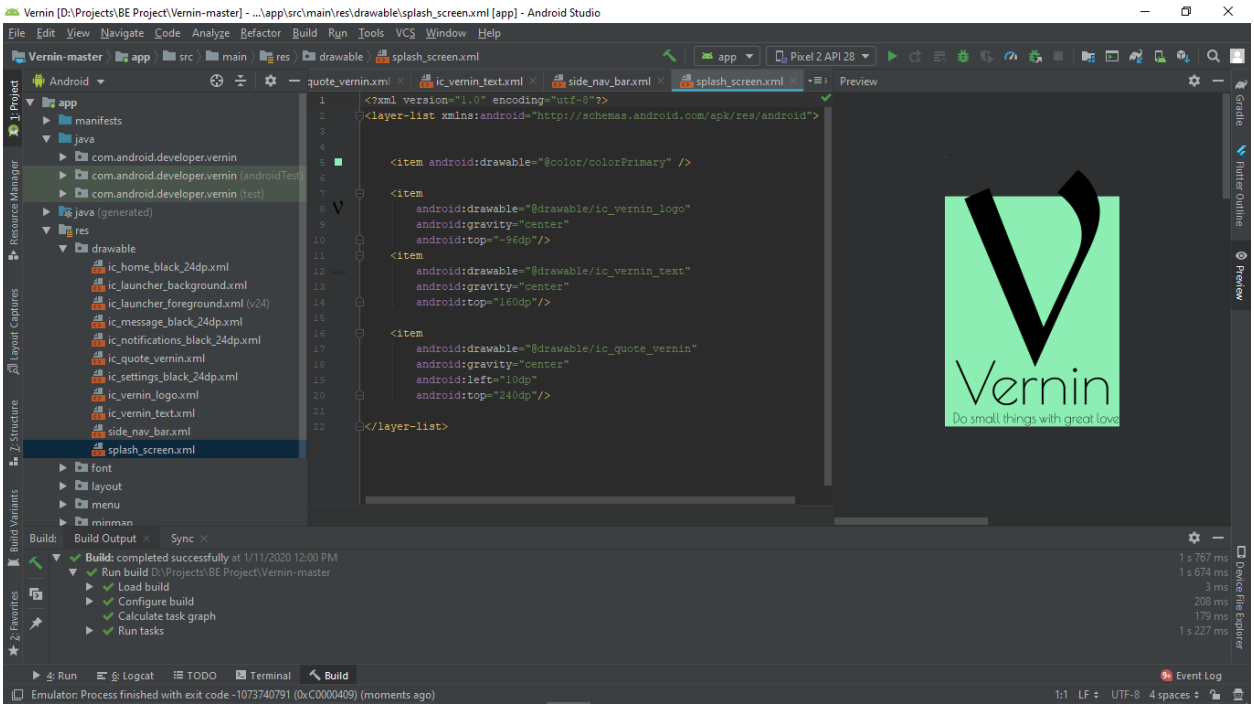


Fig No 11.5.1: Working Environment

11.6 Gantt Chart

Phases	June 15th -30th	July 1st - 30th	Aug 1st - 30th	Sep 1st - 30th	Oct 1st - 30th	Nov 1st - 13th	Dec 10th - 30th	Jan 1st - 30th	Feb 1st - 15th	Mar 1st – 15th
Requirement Gathering										
Analysis										
Design										
Coding										
Testing & Feedback										
Implementation										
Release										

Fig No 11.6.1: Gantt Chart

12.Testing

12.1 Verification and Validation Testing

Verification is a static practice of verifying documents, design, code and program. It includes all the activities associated with producing high quality software: inspection, design analysis and specification analysis. It is a relatively objective process.

Validation is the process of evaluating the final product to check whether the software meets the customer expectations and requirements. It is a dynamic mechanism of validating and testing the actual product.

12.2 Test Cases (Test table and screen shots)

Test id: 01

Test objective: To test the Registration Module of the application

Item No	Test Condition	Operator Action	Input Specification	Output Specification (Expected Results)	Pass or Fail
1	Successful Registration	Enter Details and upload document(s)	Details and Document(s)	System stores the entered details and validates the document(s). On successful validation. Email for successful registration is sent	Pass
2	Unsuccessful Registration	Enter Details and upload document(s)	Details and Document(s)	System stores the entered details and validates the document(s). On invalid document registration will not take place	Pass

Table 12.2.1: Test Case 01

Test id: 02

Test objective: To test the Login Module of the application

Item No	Test Condition	Operator Action	Input Specification	Output Specification (Expected Results)	Pass or Fail
1	Successful Login	Enter Username, Password and Login	Username and Password	System validates the Username and Password and depending on the user provides the info	Pass
2	Unsuccessful Login due to Incorrect password	Enter Username, Password and Login	Username and Password	System validates the Username and Password and Pops up message “Invalid User ID or password”.	Pass
3	Unsuccessful Login due NO server connectivity	Enter Username, Password and Login	Username and Password	System validates the Username and Password on server machine that the user which has no started SQL Server started. Pops up message “Invalid User ID or password”	Pass
4	Unsuccessful Login due to blank text boxes	Click the login button	Null values	System checks that text boxes are empty so pops up the message: “Username & password cannot be blank”.	Pass

Table 12.2.2: Test Case 02

Test id: 03

Test objective: To test the Post Module of the application

Item No	Test Condition	Operator Action	Input Specification	Output Specification (Expected Results)	Pass or Fail
1	Successful Post	Enter requirements	Details	System gets the details enters and generates a post and posts it to the Scribe	Pass
2	Unsuccessful Post	Enter requirements	Null values	System checks that text boxes are empty so pops up the message. "Enter all required fields"	Pass

Table 12.2.3: Test Case 0

13.Result Analysis

13.1. Sample Screenshots

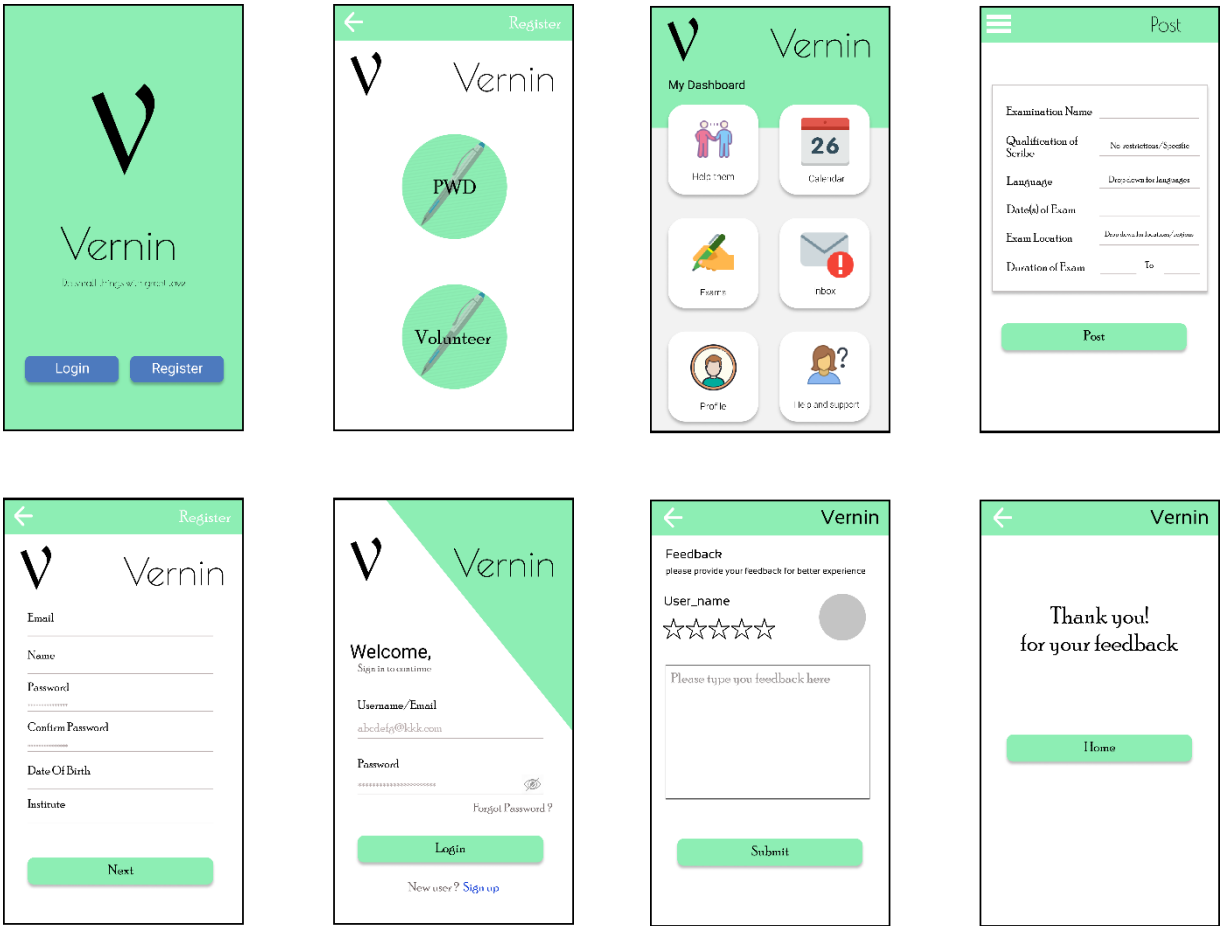


Fig No. 13.1.1: Sample Screenshots

13.2. Survey Analysis

A survey was conducted to test the knowledge and views of the mass population on the current scenario, systems, problems faced by PWDs, process of Scribe finding and their will to be a Scribe provided the opportunity.

Following are the questions from the survey:

1. Name of the candidate.
2. Gender of the candidate.
3. Age of the candidate.
4. Are you aware about the requirements for a Scribe/Writer for PWDs?
5. Have you been a Scribe(writer) for special children/PWD in the past?
6. If yes, please describe your experience :) Else NIL
7. What are the common channels where one can find Scribes/Writers?

8. Would you like to be a Scribe yourself and help the community?
9. What are your views about an online portal for finding suitable Scribes for Special Children?
10. Are you willing to use such portal?
11. What features as an end user you would like to see in the portal (both as a Scribe and physically challenged student)
12. How likely are you to recommend such portal to your friends, family, colleagues & NGOs?

Following are the analytics for the key questions:

1. Age?

Of the 50 responses 74% of the people were junior college and undergraduate students. This is a good sign because for majority of the exams Scribes need to be students and have a qualification criteria.

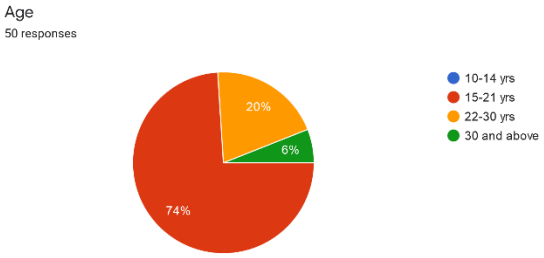


Fig No. 13.2.1: Question 1

2. Are you aware about the requirements for a Scribe/Writer for PWDs?

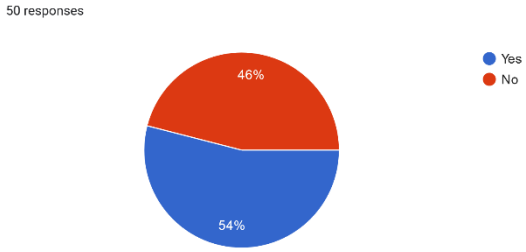


Fig No. 13.2.2: Question 2

3. What are the common channels where one can find Scribes/Writers? (can select multiple options)

The top two channels where a PWD can find Scribes as per this survey are NGOs 68% and Schools/Colleges 66%.

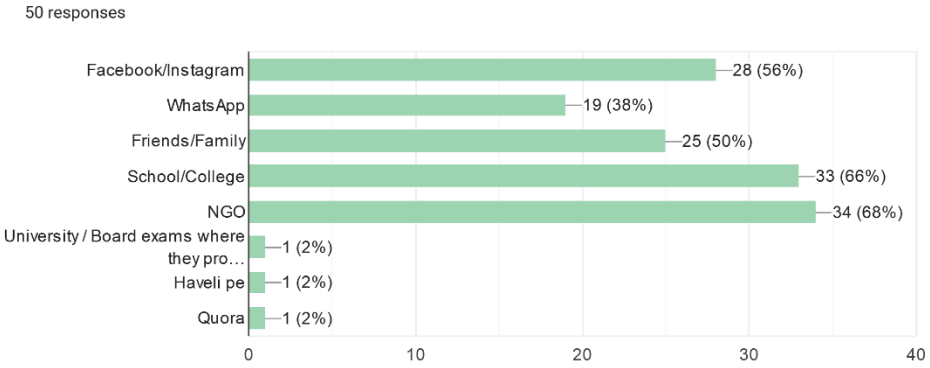


Fig No. 13.2.3: Question 3

4. Would you like to be a Scribe yourself and help the community?

On this question 50% of the people responded with maybe, 42% with Yes and 8% No. This shows that people are uncertain about if they want to be a Scribe themselves. Hoping in the future the responses changes.

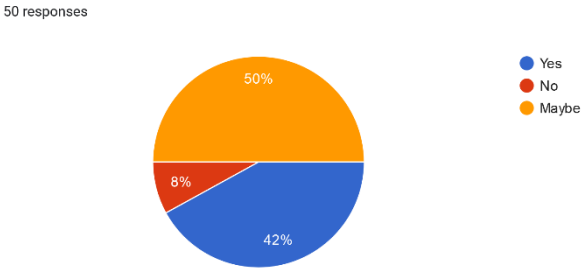


Fig No. 13.2.4: Question 4

5. How likely are you to recommend such portal to your friends, family, colleagues & NGOs

The final question on how willing are people to tell about this portal to their friends, family and other organizations had a great response. The data showed majority of candidates are interested in helping PWDs and would want to use such application. About 54% people rated 5 points on the recommendation scale and 26% rated 4 out of 5.

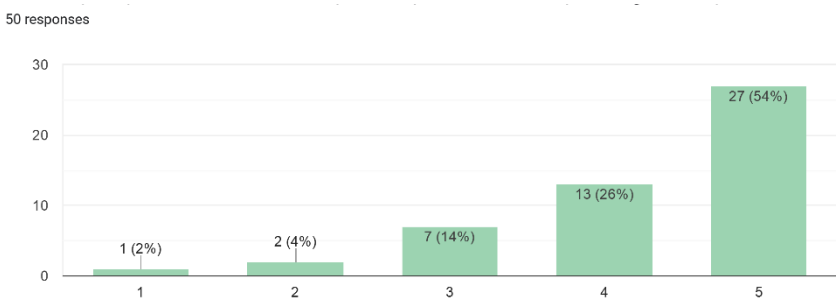


Fig No. 13.2.5: Question 5

13.3. Comparative Analysis

Features	Scribe Finder	Vernin
Registration for PWD and Scribe	Yes	Yes
Document Verification	Yes	Yes
Study Material and Notes	Yes	No
Scribe Search	Yes	Yes
Post System	No	Yes
Profile System	No	Yes
Scribe Contact Info	Yes	Yes
Messenger	No	Yes
Feedback System	No	Yes
Live Location Tracking	No	Yes
Credit System	No	Yes
Dynamic Notification	No	Yes
Dashboard	No	Yes
Urgent Post Alerts	No	Yes

Table No. 13.3.1: Comparison table

14.Advantages and Limitations

14.1 Advantages

1. Quick posts and Easy to use
2. Efficient and Reliable
3. Assured - Live Location Tracking
4. Good Reach to appropriate audience
5. Community of PWDs
6. Encourages Voluntarily social work amongst youth

14.2 Limitations

1. May need another person to operate the application
2. Android devices with Android version 5.0 and above can run this application

15. Applications and Future Enhancement

The same concept can be extended to voice based operations by the PWD to completely make the application handsfree. This then will enable PWDs to use the application independently without anyone's assistance.

The application then can be extended to other platforms to enable high reach and convenience of usage from any point.

1. Extend to web application
2. Location based post viewing options
3. Voice assisted application
4. Google actions support

16.Conclusion

We have seen the different methods used by PWDs to find Scribes and the inefficiencies related to those methods. Also, the existing solutions and the different features associated with them. Next, how the proposed solution is used to solve the current problem, related features and functionalities have been discussed alongside the comparison chart, detailing the additional functionalities available. The development strategy and the methodology used for developing an Android application was highlighted. An analysis of a survey conducted is shown with the questionnaire. Concluding, the application with its unique features, functionalities and simple user interface aims to ease the process of finding Scribes/Readers for PWDs and to have a lasting impact which will help in creating a healthy community for both PWDs and Scribes, ultimately helping the PWDs achieve their academical goals and achieve new heights.

17. References

[1] The Rights of Persons with Disabilities Act, 2016, Gazette of India (Extra-Ordinary); 28 December. 2016, http://www.disabilityaffairs.gov.in/uploaad/uploadfiles/files/RPWD/ACT/2016.pdf

[2] The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act. 1995, http://www.disabilityaffairs.gov.in/upload/uploadfiles/files/PWD_Act.pdf

[3] Guidelines for conducting written examination for persons with benchmark disabilities, http://disabilityaffairs.gov.in/upload/uploadfiles/files/Guidelines-29_08_2018%20(1).pdf

[4] Vikaspedia - Guidelines for conducting written examination for PwD, http://vikaspedia.in/social-welfare/differently-abled-welfare/policies-and-standards/guidelines-for-conducting-written-examination-for-persons-with-benchmark-disabilities

[5] Research on Development of Android Applications - Jianye Liu ; Jiankun Yu IEEE Dec 2011

[6] 2016 Akshay Singh and Sakshi Sharma performed a work "Android Application Development using Android Studio and PHP Framework" – IJCA

[7] Choudhary L N and Thomas J, "The Rights of Persons with Disabilities Act, 2016: Does it address the needs of the persons with mental illness and their families," https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5419007/

[8] Android Dev guide, http://developer.android.com/guide/topics/fundamentals.html

[9] Medium, "Education for Students with Disabilities in India" https://medium.com/social-sustainability-design/group-2-education-for-students-with-disabilities-in-india-d227795c2ead

18. Paper Publication details

Title:

Conference Name (Detail):

Date of Publication:

Journal Name:

Name of Authors:

Affiliation of authors: