

# Senior Strength

Madhura Jakate<sup>1</sup>, Parul Bisane<sup>1</sup>, Sanskruti Jawanjal<sup>1</sup>, Shreya Nagpure<sup>1</sup>,  
Vaishnavi Yadav<sup>1</sup>, Amit Thakare<sup>2</sup>

<sup>1</sup>Students, Department of Computer Engineering, Cummins College of Engineering for Women, Nagpur, India

<sup>2</sup>Associate Professor, Department of Computer Engineering, Cummins College of Engineering For  
Women, Nagpur, India

## ABSTRACT

*The Senior Strength aims to improve the quality of life for aging individuals. As the global population ages, the need for comprehensive senior support systems is growing. The program addresses physical, emotional, and social needs of seniors, enabling them to age gracefully and independently. It offers access to health and wellness resources, social engagement opportunities, and personalized support services. Through in-person and virtual interactions, it provides seniors with a platform to access essential information, connect with peers, and receive assistance. The network combats challenges associated with aging, such as isolation, limited mobility, and health-related concerns. By fostering community and providing resources, Senior Strength empowers seniors to lead fulfilling lives into their later years.*

**Keywords** - Senior Strength, Personalized support services, Social engagement opportunities, Virtual Interaction, Fostering community.

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## 1.INTRODUCTION

In recent years, there has been a notable surge in the number of mobile devices. Cell phones, which were formerly solely utilized for making calls, have evolved into smartphones with additional features and capabilities. In addition to smartphones, other mobile devices like tablets are becoming more and more popular and offer their users new opportunities [1]. When taken as whole, these gadgets stand for the most widely used interactive information and communication technologies (ICT) worldwide [2]. Over 5 billion people are globally connected to mobile services [1]. Brazilians adopted mobile phones for Internet access more frequently in 2010 than they did desktop computers [3]. Furthermore, in 2015, Brazil was identified as the Latin American nation with the biggest market for mobile phones [4]. ICTs currently have the ability to enhance people's lives in a variety of contexts and ways, with education being one area where they can be especially helpful. Mobile learning, or m-learning, has quickly gained popularity in this setting. Student interaction, virtual learning environments, and mobile technologies have put the traditional educational model of learning in a single location to the test, opening up new avenues for learning expansion with the help of personal media communicators [5]. Mobile learning enables anytime, anywhere learning by utilizing mobile technology either on its own or in combination with other ICTs [2]. Expectations in the field of education have increased due to the benefits of this modality of learning, especially with regard to flexibility in training and instruction. Mobile learning actually provides flexibility and adaptation to the context of use for students, instructors, and tutors because it is flexible in terms of both time and space [6]. Owing to its adaptability and flexibility, mobile learning seeks to democratize educational access. For the elderly, it must therefore be suitable and structured. By 2020, there will be more people over 60 in the world than there are children under five, with the World Health Organization predicting that this number will surpass 2 billion [7]. Whitbourne [8] asserts that our capacity for learning, memory, problem-solving, and world knowledge is essential to our flexibility and sense of self. Since older users may have compromised physical, mental, and learning capacities, such applications should be developed with accessibility criteria in mind to minimize barriers that may be encountered by them. Generally categorized as "quality of access," accessibility has been examined in a number of contexts, regardless of whether it pertains to the social or technological environment. We shall use the ISO

9241-171 standard definition in the latter scenario [9]. & quote Usability of a product, service, environment, or facility by people with the widest range of capabilities & quote; is the definition of accessibility.

## 2.SYSTEM ANALYSIS

### 2.1 Existing System

Currently, the systems or applications that are in use provide only the basic idea of fundamental rights. There are special helpline numbers for senior citizens. All this data cannot be found at a single source. The user has to browse or search for different apps in order to gain information. It might happen that the source of information that the user is looking for is outdated or fake. Also, there is no app or website for providing direct communication with government officials to date. We plan to develop a system that eradicates all the flaws in the existing system.

### 2.2 Proposed System:

The proposed system aims to provide the following features listed below in a single Android application:

- Senior citizen law information
- Information about their rights
- Legal guidance
- Government schemes and helpline
- Information about NGO's who work for senior citizens.
- Helpline, which provides direct contact with the central government counsellor who solves their issue according to their needs.
- Senior citizen shelter information.
- Guidance for the Samaj Kalyan board

## 3.REQUIREMENT ANALYSIS

Requirement analysis is critical to the success or failure of a system or software project. The following are the activities of requirement analysis.

- Identify customer needs.
- Evaluate the system or its feasibility.
- Perform economical and technical analysis.
- Allocate functions to system elements.
- Establish a schedule and constraints.
- Create system definitions.

### 3.1 Hardware Requirements

For running any software, there are some specifications, and only if it satisfies the specified requirements will it get installed and work as it is designed for.

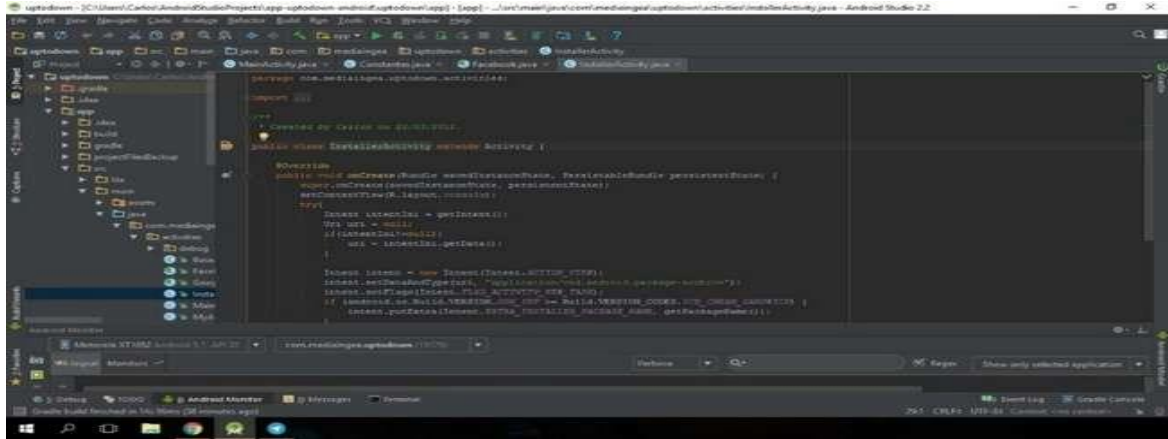
- The software also has some specifications, as follows:
- The minimum RAM required is 2GB or more.
- The storage space required on the ROM is around 25MB or more.
- Other hardware components include any mobile phone running Android OS with a 5.0+ Android version.
- The Internet is required for the proper functioning of the application.

### 3.2 Software requirements

The software requirements of this system are as follows:

## 1.Android Studio

Android Studio is the official integrated development environment (IDE) for Android application development. It is based on IntelliJ IDEA, a Java integrated development environment for software, and incorporates its code editing and developer tools.



The following features are provided in the current stable version:

- Gradle-based build support
- Android-specific refactoring and quick fixes
- Lint tools to catch performance, usability, version compatibility, and other problems
- ProGuard integration and app-signing capabilities
- Template-based wizards to create common Android designs and components
- A rich layout editor that allows users to drag-and-drop UI components, with the option to preview layouts on multiple screen configurations
- Support for building Android Wear apps
- Built-in support for Google Cloud Platform, enabling integration with Firebase Cloud Messaging (formerly 'Google Cloud Messaging') and Google App Engine
- Android Virtual Device (Emulator) to run and debug apps in the Android studio.

Android Studio supports all the same programming languages of IntelliJ (and CLion), e.g., Java, C++, and more with extensions, such as Go; and Android Studio 3.0 or later supports Kotlin and "all Java 7 language features and a subset of Java 8 language features that vary by platform version." External projects backport some Java 9 features. While IntelliJ states that Android Studio supports all released Java versions and Java 12, it's not clear to what level Android Studio supports Java versions up to Java 12 (the documentation mentions partial Java 8 support). At least some new language features up to Java 12 are usable on Android.

Once an app has been compiled with Android Studio, it can be published on the Google Play Store. The application has to be in line with the Google Play Store developer content policy.

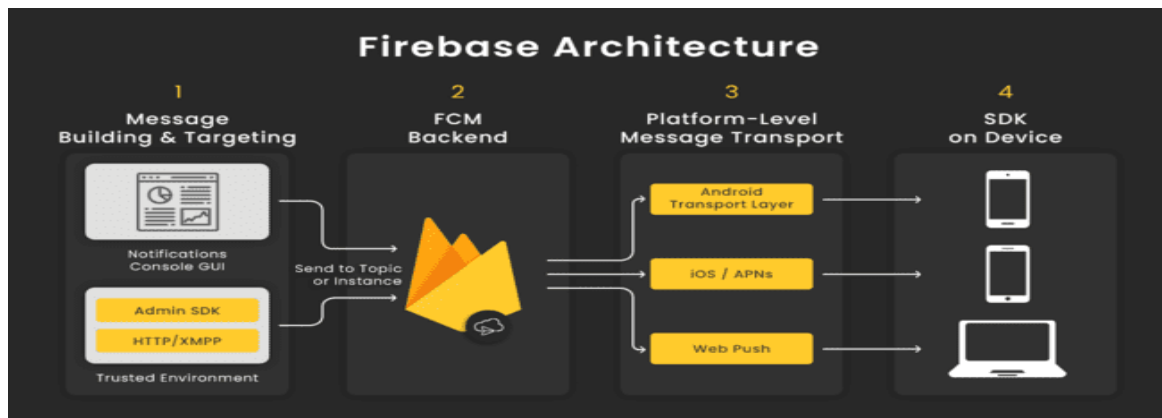
Key points of Android Studio:

- Developed by: Google and JetBrains
- Recent stable release: Version 4.0
- Released on: May 26th, 2020
- Written in: Java, Kotlin, and C++
- Operating system: Windows, macOS, Linux, Chrome OS

## 2.Google Firebase

Firestore is a set of hosting services for any type of application (Android, iOS, JavaScript, Node.js, Java, Unity, PHP, C++, etc.). It offers NoSQL and real-time hosting of databases, content, social authentication (Google, Facebook, Twitter, and GitHub), notifications, or services, such as a real-time communication server.

Firestore evolved from Envolv, a prior startup founded by James Tamplin and Andrew Lee in 2011. Envolv provides developers with an API that enables the integration of online chat functionality into their websites. After releasing the chat service, Tamplin and Lee found that it was being used to pass application data that was not chat messages. Developers were using Envolv to sync application data, such as game state, in real time across their users. Tamplin and Lee decided to separate the chat system and the real-time architecture that powered it. They founded Firestore as a separate company in 2011, and it was launched to the public in April 2012.



Firestore's first product was the Firestore Realtime Database, an API that synchronizes application data across iOS, Android, and Web devices and stores it on Firestore's cloud. The product assists software developers in building real-time, collaborative applications.

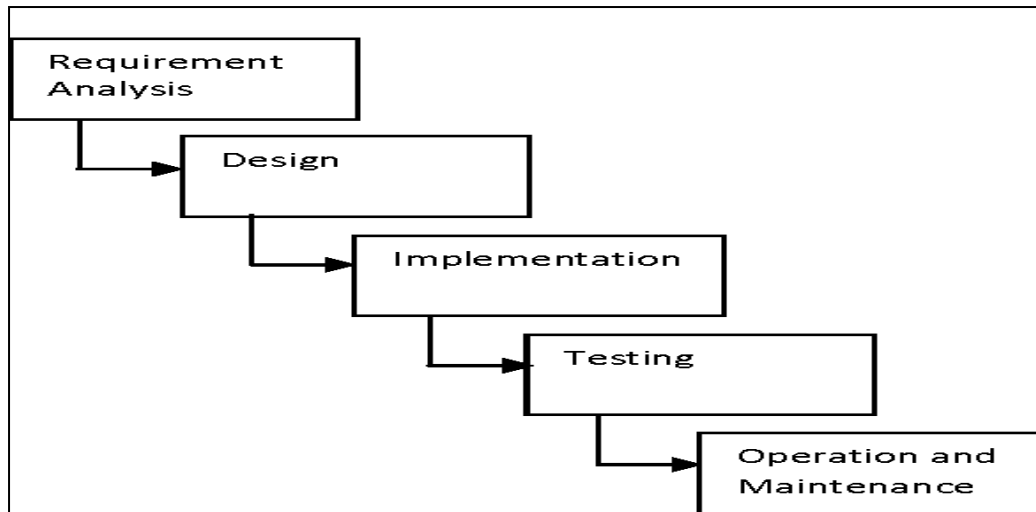
## 4. CONCEPTUAL DIAGRAM

### 4.1 Waterfall Model

For developing this app, the approach that we are using is the waterfall model. Waterfall is the classical model of system development that is also known as the one-slot or one-through model. There is a sequence of activities working from top to bottom. The diagram shows some arrows pointing upwards and backwards. The flow of the waterfall should be downward, with the possibility of just a little splashing back. Here the requirements are well defined and the development methods are well understood, and the waterfall approach allows project completion times to be forecast with some confidence in the project.

Advantages:

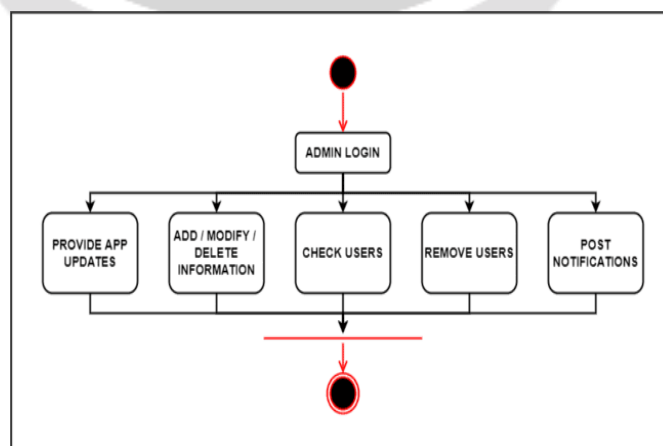
When the requirements are fixed and the development methods are well understood, it allows project completion times to be forecasted with some confidence. It is a simple, linear, and segmental model. It has proper documentation. It is systematic and sequential.



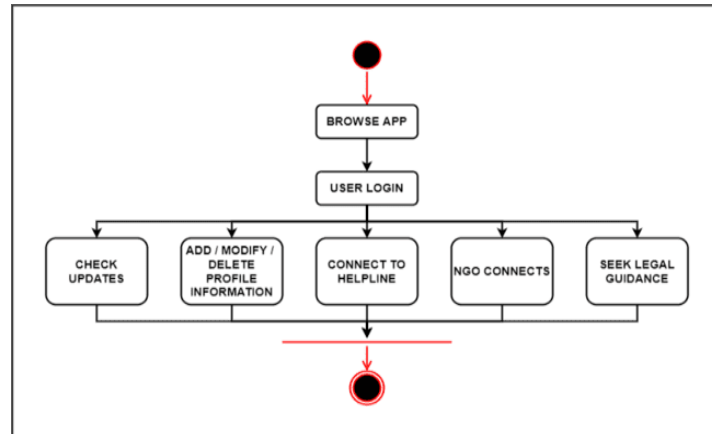
**4.2 Activity Diagram**

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration, and concurrency. In the Unified Modelling Language, activity diagrams are intended to model both computational and organizational processes (i.e., workflows), as well as the data flows intersecting with the related activities. Although activity diagrams primarily show the overall flow of control, they can also include elements showing the flow of data between activities through one or more data stores. Activity diagrams are constructed from a limited number of shapes connected with arrows. The most important shape types are Ellipses represent actions, Diamonds represent decisions, Bars represent the start (split) or end (join) of concurrent activities, A black circle represents the start (initial node) of the workflow, An encircled black circle represents the end (final node), Arrows run from the start towards the end and represent the order in which activities happen, Activity diagrams can be regarded as a form of structured flowchart combined with a traditional data flow diagram, Typical flowchart techniques lack constructs for expressing concurrency. However, the join and split symbols in activity diagrams only resolve this for simple cases; the meaning of the model is not clear when they are arbitrarily combined with decisions or loops. An activity diagram is basically a flowchart to represent the flow from one activity to another. The activity can be described as an operation of the system. The control flow is drawn from one operation to another. This flow can be sequential, branched, or concurrent.

**Activity Diagram for Admin**



**Activity Diagram for Users**



## 5. MODULE

The project includes the following main modules:

### 5.1 Login to the application as a senior citizen. User and Administrator

This module is considered for the login of new users and administrators. Every user must enter some details about themselves to login to the app, and after successful login, one can perform the functionalities intended and limited as per their role. The administrator can also login from this module. He can insert, delete, or update the user login name and password. This module checks the authenticity of the person accessing the app. The main objective behind this module is to provide security to the project so that access is restricted to authorized users.

### 5.2 Registration of the User

It takes the user's information and saves it in the database. Various functionalities included in this module are:

- Add
- Edit
- Save
- Delete

### 5.3 Information Module

It is related to the information that is displayed on the application. The various functionalities included in this module are as follows:

- Add
- Edit
- Save
- Delete

## 6. CONCLUSION

The Senior Strength App, a vital initiative tailored to empower and support the elderly, comprehensively addresses their multifaceted needs. By centralizing crucial information and services, it serves as a beacon of support, ensuring seniors have access to essential resources. Legal guidance, rights awareness, and access to senior citizen laws are provided to ensure their empowerment and protection in society. The inclusion of government schemes, helplines, and NGO details extends a wide network of assistance, ensuring seniors have readily available avenues for support. Additionally, the app facilitates personalized issue resolution through direct links to central government counselors. Furthermore, serving as a repository for shelter information, the app promotes safety and security for seniors. By guiding them towards Samaj Kalyan board assistance, it adds another layer of support to their welfare. In conclusion, the Senior Strength App not only informs but also connects, uplifts, and safeguards the senior community, fostering a more secure and informed environment for their overall well-being.

## 7. REFERENCES

1. Gao, J., & Koronios, A. (2010). Mobile Application Development for Senior Citizens. *In PACIS 2010 Proceedings*, p. 65.

2. Nasution, A. I., & Ibrahim, J. (2021). Realizing the Well-Being of Senior Citizens by Developing Smart Applications: A Conceptual Model. *Journal of Information Technology and Computer Science*, 6(1), 96-106.
3. Yani, N. A. A., & Zolkipli, M. F. (2021). Computerized Senior Citizen Health Monitoring using Mobile Applications. *International Journal of Advanced Science Computing and Engineering*, 3(3), 140-152.
4. Yamaguchi, A. (2019). How Japanese Elderly People Access Legal Services: An Analysis of Advice-Seeking Behaviour. *Asian Journal of Law and Society*, 6(2), 281-305.
5. Noor, G. (2022). Maintenance, Welfare, and Protection of the Rights of Parents and Senior Citizens: A Socio-Legal Analysis. *Part 1 Indian J. Integrated Rsch. L.*, 2.
6. Hauck, U., Roux, F., & Demmer, D. (2023). Medical Students' Experiences of the Senior Citizen Partnership Program: Evaluation of a Five-Year Longitudinal Program. *Medical Teacher*.
7. Moyers, T. B., et al. (2022). Community Reinforcement Approach for Seniors (CRAS) Treatment Manual for Project Elderly, Extended Condition (MET+ CRA) Study Version.
8. Rupavijetra, P., et al. (2022). Model of Development of Learning Activities to Promote Mental Health among Older Adults at Senior Citizens School. *Higher Education Studies*, 12(3).

