



**CareConnect: Elderly Assistance Network**

ON

Submitted in partial fulfillment of the requirements  
of the degree of

**Bachelor of Engineering  
(Information Technology)**

By

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Under the guidance of

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**(An Autonomous Institute, Affiliated to University of Mumbai)**



# Vivekanand Education Society's Institute of Technology

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NAAC accredited with 'A' grade

April 2024

## Certificate

This is to certify that project entitled

**"CareConnect: Elderly Assistance Network"**

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In fulfillment of degree of BE. (Sem.VI) in Information Technology for Project is approved.

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Place: VESIT, Chembur

### *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.

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**(Signature)**

Snehal Patil - Roll No (38)

## Abstract

Abstracts contain most of the following kinds of information in brief form. The body of your paper will, of course, develop and explain these ideas much more fully. As you will see in the samples below, the proportion of your abstract that you devote to each kind of information—and the sequence of that information—will vary, depending on the nature and genre of the paper that you are summarizing in your abstract. And in some cases, some of this information is implied, rather than stated explicitly. The Publication Manual of the American Psychological Association, which is widely used in the social sciences, gives specific guidelines for what to include in the abstract for different kinds of papers—for empirical studies, literature reviews or meta-analyses, theoretical papers, methodological papers, and case studies.

**Keywords-***literature, theoretical, methodological, include, Publication*

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## **ACKNOWLEDGEMENT**

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## **CHAPTER: 1 INTRODUCTION**



# Chapter 1

## Introduction

### 1.1. Introduction

CareConnect is a web-based initiative aiming to bring elders and volunteers together. Elders can register their needs, such as medication delivery, companionship, or emergency help, while volunteers can select tasks matching their interests and locations. The platform promotes mutual care, digital inclusion, and safety for the elderly.

### 1.2. Objectives

- Connect verified volunteers to elders in need.
- Facilitate easy registration and task matching.
- Offer emergency alert and contact features.
- Ensure user-friendly interface and data security.

### 1.3. Motivation

The rising number of elderly people living alone in urban areas has created a need for platforms that can ensure their safety, dignity, and independence. **CareConnect** was inspired by the idea of combining technology with compassion to build a better, intergenerational society.

### 1.4. Scope of the Work

The platform includes:

- Role-based login and dashboards for elders and volunteers
- Task request, filtering, and assignment
- Location and city-based task view
- Emergency contact system
- AI-suggestion for task matching
- Responsive UI with mobile support

## **1.5. Feasibility Study**

### **1. Technical Feasibility:**

- Angular, Flask, and MongoDB offer scalable and maintainable architecture.

### **2. Economic Feasibility:**

- Project utilizes open-source tools, minimizing cost.

### **3. Operational Feasibility:**

- The system was successfully developed and tested within an academic environment.

## **1.6. Organization of the report**

- **Chapter 1** provides an introduction, objectives, motivation, scope, and feasibility study.
- **Chapter 2** covers the literature survey and background research.
- **Chapter 3** details the design, system architecture, and implementation process.
- **Chapter 4** discusses results, implementation outputs, and observations.
- **Chapter 5** concludes the project and outlines future enhancements.

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## **CHAPTER: 2: LITERATURE**

### **SURVEY**

# Chapter 2

## Literature Survey

### 2.1. Introduction

The literature survey for the **CareConnect** project explores research around digital elder-care solutions, community-based volunteer systems, and technical stacks for scalable and secure web platforms. Through journal reviews, case studies, and implementations, this section identifies the gaps and innovations applicable to building a real-time support network for the elderly.

### 2.2. Problem Definition

As the senior population grows and traditional support structures weaken, there's a pressing need for platforms that offer timely, secure, and personalized assistance to elders. Challenges include a lack of tech-friendly designs, inefficient volunteer coordination, data security, and poor task tracking systems. **CareConnect** addresses these issues using Angular, Flask, and MongoDB—ensuring modularity, responsiveness, and reliable data flow.

### 2.3. Review of Literature Survey

- The research paper titled *"A Comparative Study of Modern Web Frameworks Bridging Digital Divide for the Elderly: Opportunities and Challenges"*, by S. Iyer and T. Khandelwal, *International Journal of Gerontechnology*, 2022, outlines the importance of creating intuitive digital experiences for elderly users. The paper influenced **CareConnect's** focus on large-font UI, simplified flows, and role-based navigation. [1]
- *"Volunteering Systems Using Smart Match Algorithms"*, by V. More and R. Deshpande, 2021, *Journal of Social Computing*, discusses how AI-based matching models can effectively pair volunteers with community needs. This inspired CareConnect's task assignment engine which suggests matches based on city and role relevance. [2]

- *"Secure Authentication Models in Public Web Applications", by A. Sharma and K. Patel, Journal of Cyber Ethics, 2023, recommends multi-layered login systems and user verification. **CareConnect** uses secure password-based login and plans to integrate CAPTCHA and OTP mechanisms in the future. [3]*
- *"The Rise of MEAN and MERN in Rapid Web Development", by D. Singh, WebTech Journal, 2021, compares frontend-backend tech stacks. While MERN was recommended for real-time apps, the study supports using Flask with Angular for modular projects, as done in **CareConnect**. [4]*
- *"GIS Integration in Social Platforms for Smart Cities", by P. Rathi and M. Zaveri, UrbanTech 2022, emphasizes the benefits of adding location-based visual tools in community platforms. This reinforced **CareConnect's** map-filtering and city-based task discovery feature. [5]*

## **CHAPTER: 3 DESIGN AND IMPLEMENTATION**

# Chapter 3

## Design and Implementation

### 3.1. Introduction

The **CareConnect** project followed a modular design approach using a component-based frontend and RESTful backend. Agile methodology was adopted with weekly iterations and reviews to ensure continuous integration and testing.

### 3.2. Requirement Gathering

Key functional requirements included:

- Role-based authentication (Elder/Volunteer)
- Task posting, filtering, and acceptance
- Emergency alert button for elders
- City-based filtering for location-specific help
- Volunteer profile management and elder feedback system
- Tools and technologies used:
  - **Frontend:** React, TypeScript, Tailwind CSS
  - **Backend:** Flask (Python)
  - **Database:** MongoDB Atlas
  - **Others:** Postman, VS Code, Git, GitHub

### 3.3. Proposed Design

The platform consists of the following pages:

- **Home Page** – Informative landing page with CTA
- **Elder Dashboard** – Shows task form, history, and emergency features
- **Volunteer Dashboard** – Displays available tasks with filter/search
- **Task Request Page** – Form-based multi-step help request system
- **Login & Signup Pages** – For both roles with secure authentication

### **3.4. Proposed Algorithm**

Step 1: Start

Step 2: User signs up/login with role

Step 3: Dashboard renders according to role

Step 4: Elder posts a task (with location and type)

Step 5: Volunteers browse and accept tasks

Step 6: Task status updates on both dashboards

Step 7: Emergency contact alert system available to elders

Step 8: Logout

Step 9: Exit (Refer to Data Flow Diagram)



## 3.5. Architectural Diagrams

### 3.5.1. UML Diagram

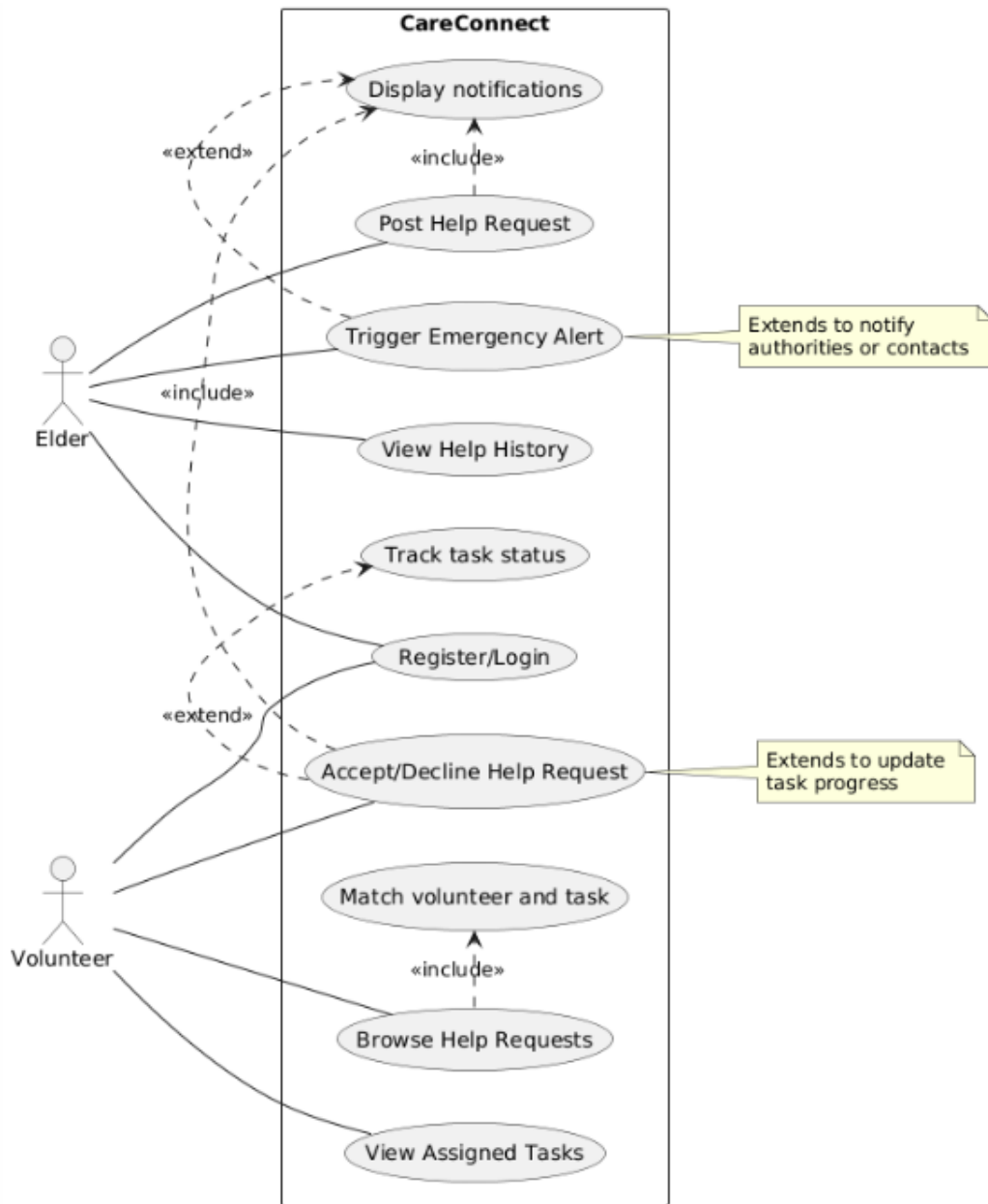


Figure 3.1: UML

### 3.5.2. Data Flow Diagram

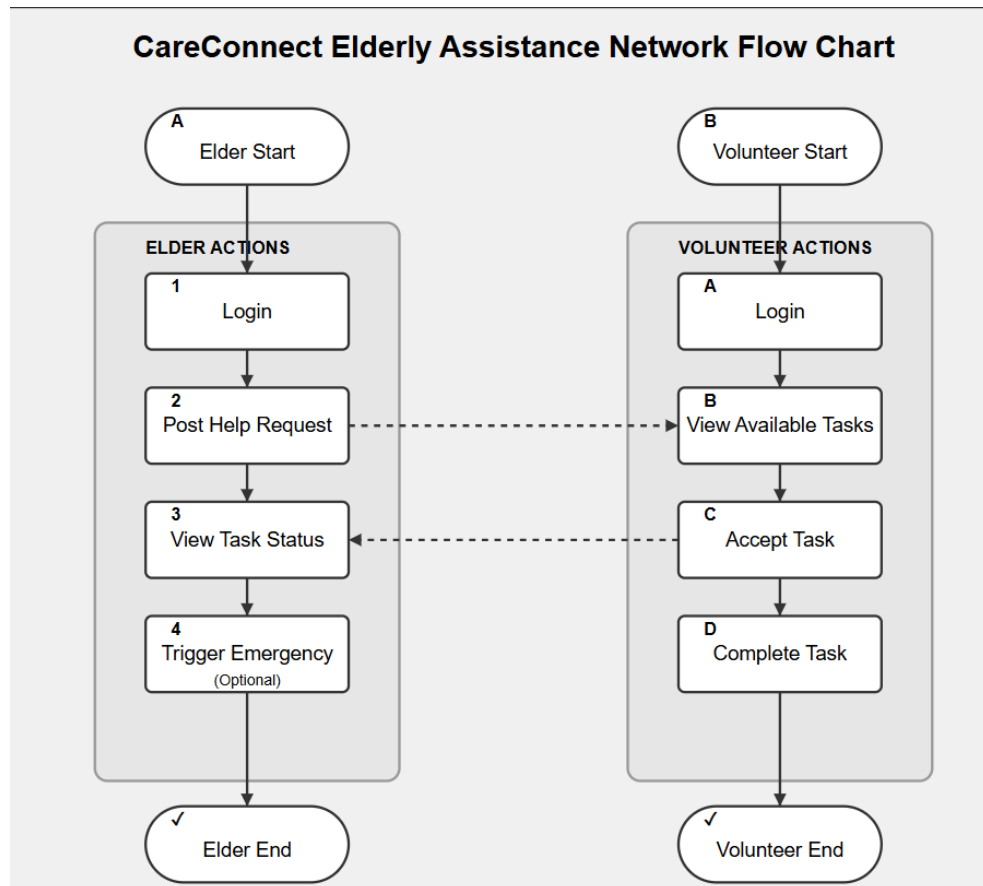
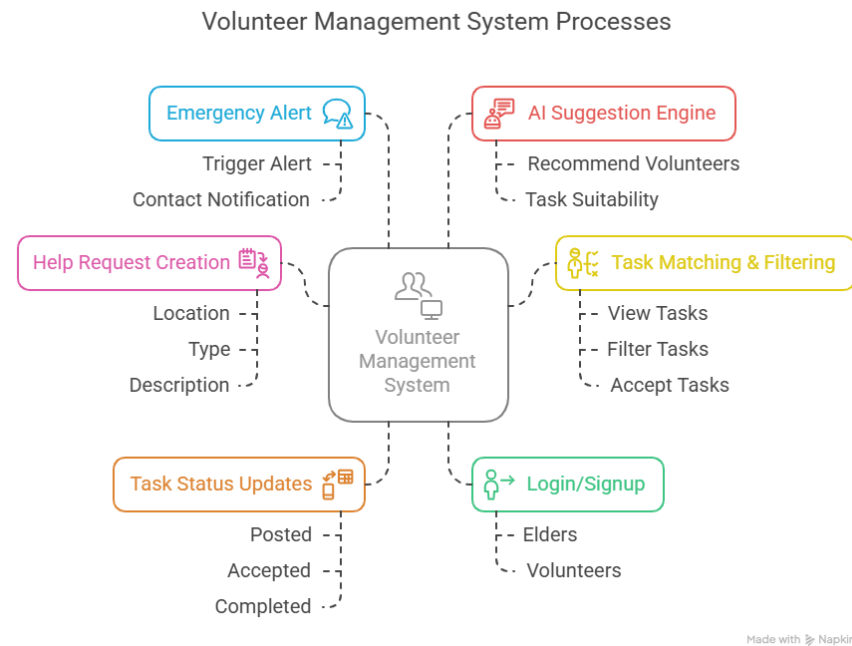


Figure 3.2: Data Flow Diagram

### 3.6. Hardware Requirements

- **Device Used:** Laptop
- **Processor:** Intel Core i5 (Quad-Core)
- **RAM:** 8 GB
- **Usage:** Suitable for initial development and testing

### 3.7. Software Requirements

- **Operating System:** Windows 11 64-bit
- **Frontend:** Angular
- **Backend:** Python 3.11+ with Flask
- **Package Manager:** Node.js v18.16.1 (with npm)
- **Database:** MongoDB Atlas (Cloud-based NoSQL)
- **Code Editor:** Visual Studio Code (VS Code)
- **Version Control:** Git & GitHub for collaboration and code management

### 3.8. Code

**GITHUB LINK** - <https://github.com/snehal-A-patil/CareConnect>

## **CHAPTER: 4 RESULTS AND DISCUSSION**

# Chapter 4

## Results and Discussion

### 4.1. Introduction

This chapter documents the major outputs and screens of the CareConnect project.

### 4.2. Results of Implementation

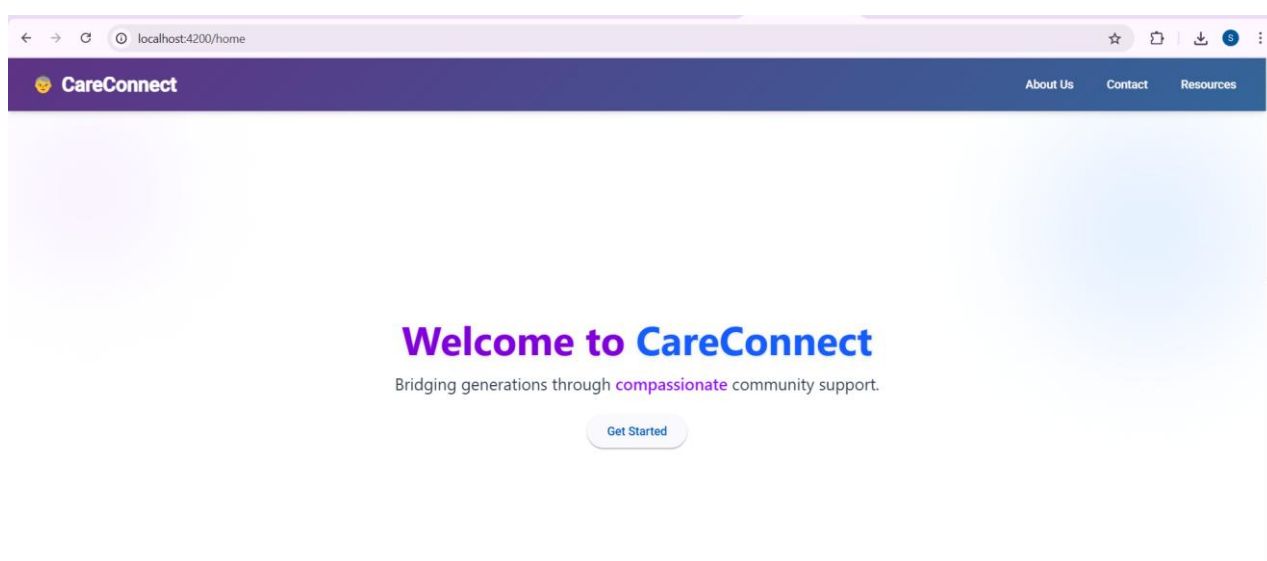


Figure 4.1: Home Page

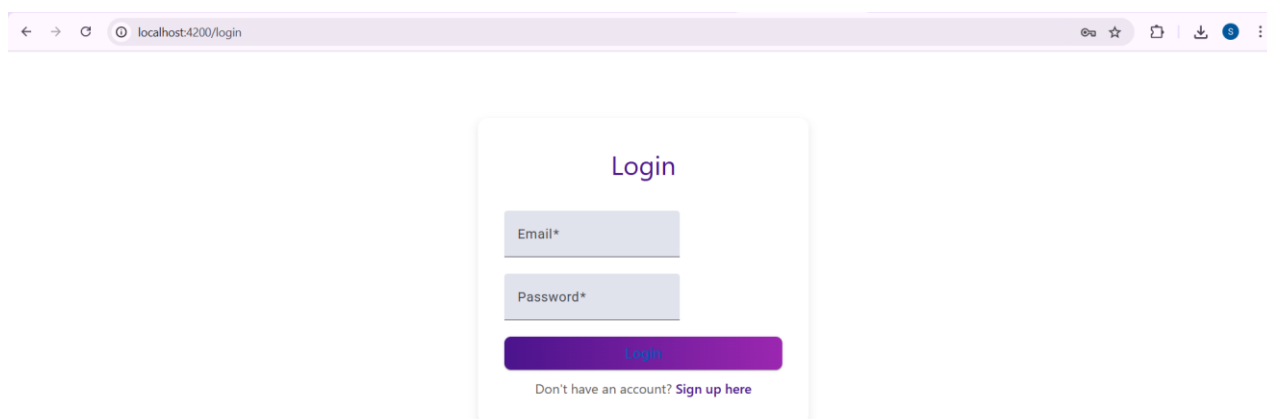
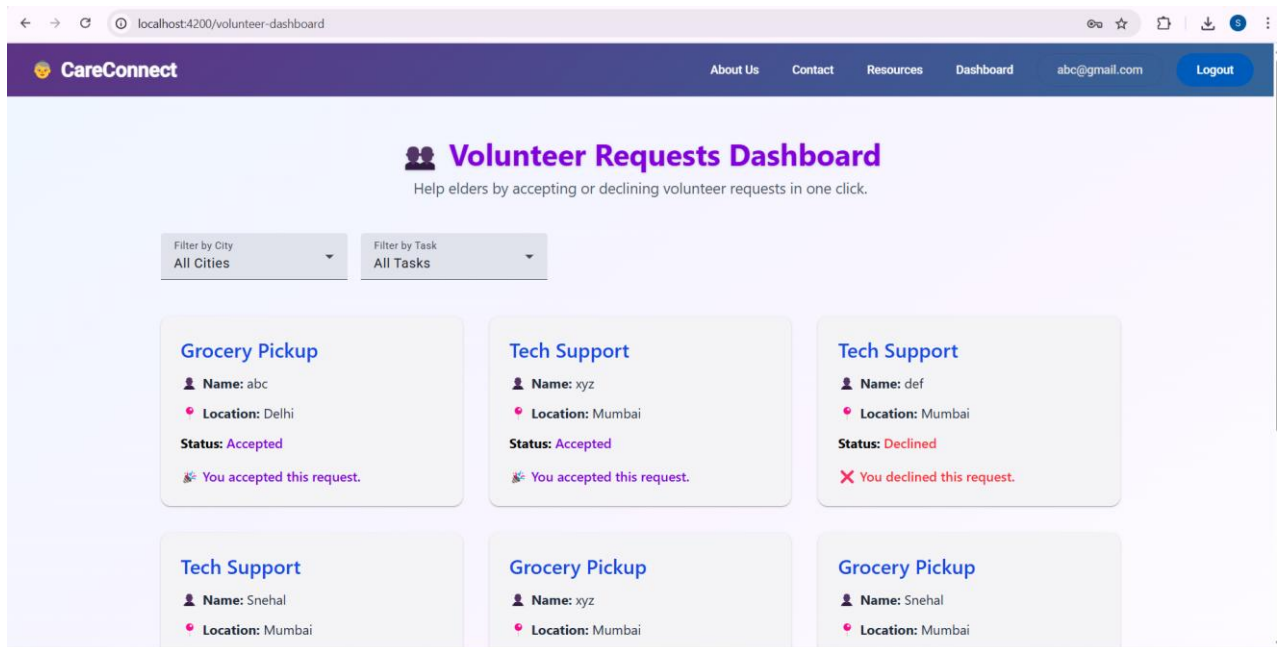


Figure 4.2: Login Page



Volunteer dashboard

The screenshot shows the 'Request Assistance' form in the CareConnect application. The form is titled 'Request Assistance' with a subtitle 'Let us know what you need help with. Our volunteers are ready to assist you'. The form fields include: 'Your Full Name' (text input), 'Select Task' (dropdown menu), 'Select City' (dropdown menu), 'dd-mm-yyyy' (date input), 'Preferred Time Between' (two time inputs labeled 'From' and 'To'), and 'Additional Notes' (text area). The form is set against a purple and blue gradient background.

Figure 4.3: request-help form

The screenshot shows the 'Login to CareConnect' form. The form is titled 'Login to CareConnect' and has a subtitle 'Enter your email:'. It features a single text input field labeled 'Email' and a purple button labeled 'Send OTP'.

Figure 4.4: Verify OTP Page

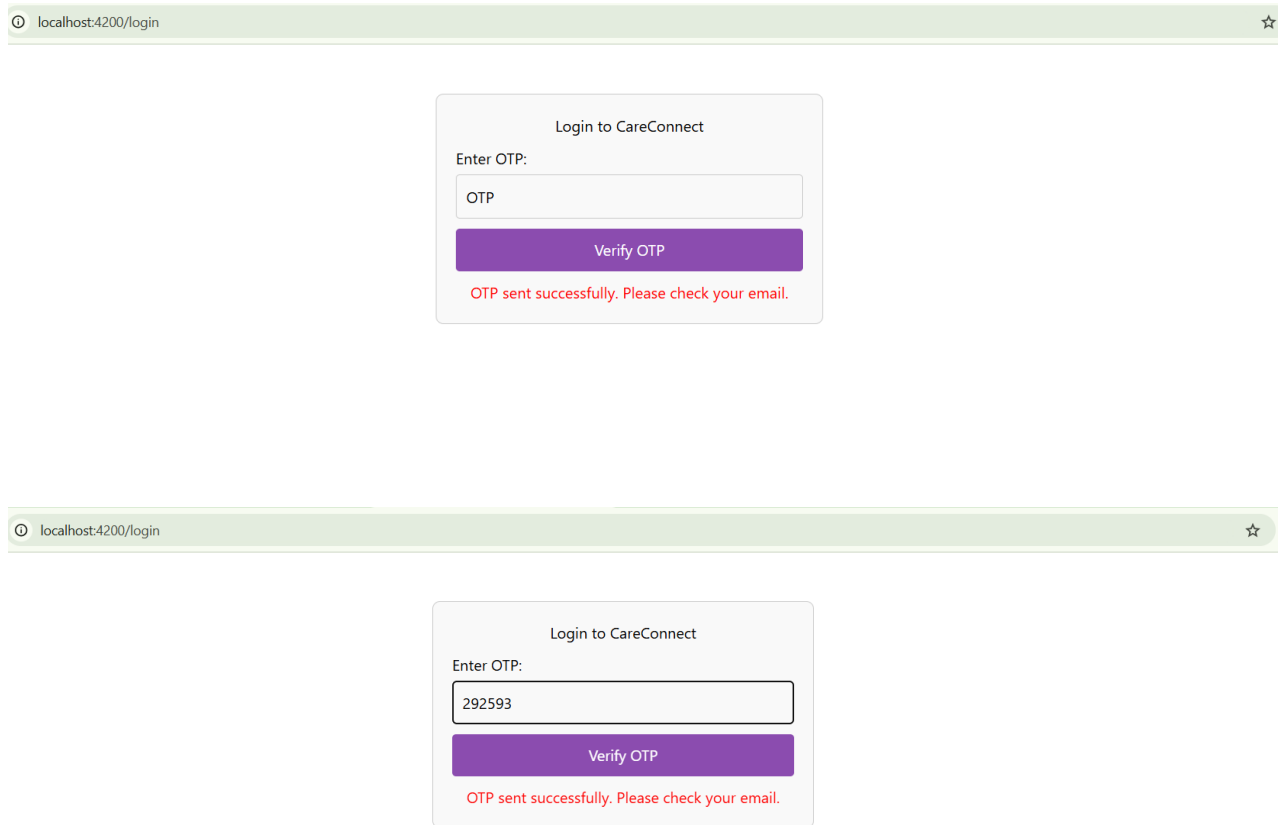


Figure 4.5: OPT generation and Sending

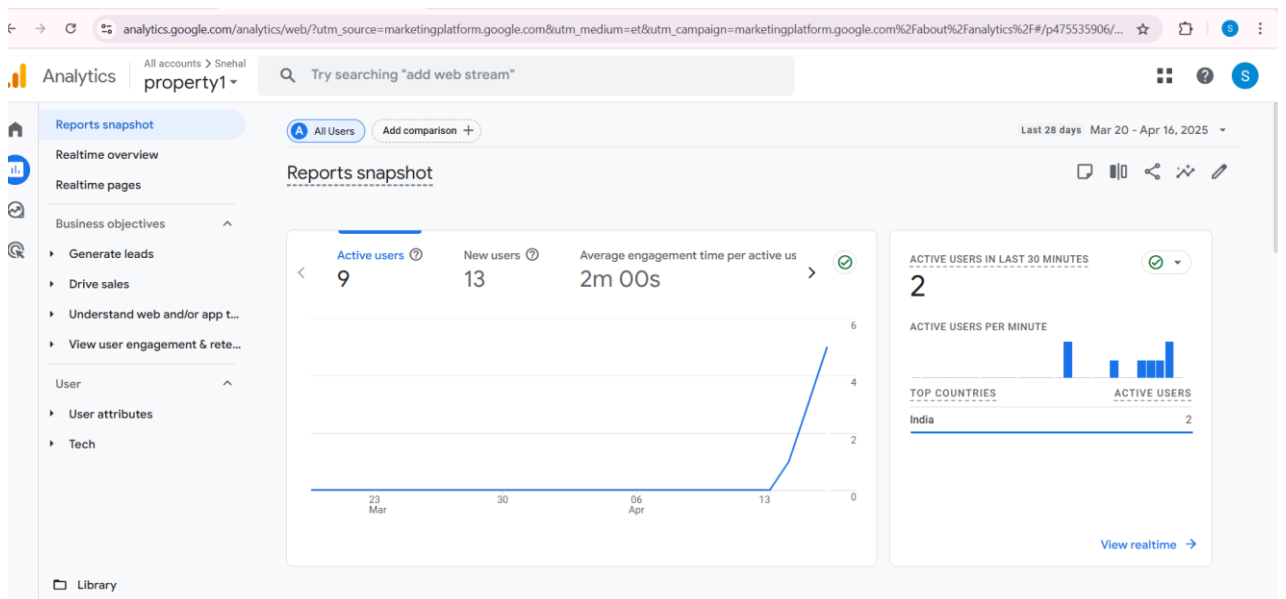


Figure 4.6: Google Analytics for the website

## 4.1. Observation/Remarks

**CareConnect** platform has proven itself to be an effective and socially impactful full-stack web application. Its strengths lie in its modular structure, accessibility-focused user interface, and seamless integration of modern technologies such as Flask for backend APIs, Angular for dynamic frontend rendering, and MongoDB Atlas for robust cloud-based data storage.

Through its thoughtful design and smooth user experience, the system simulates a real-world elder assistance network by enabling task requests, real-time volunteer engagement, and emergency contact workflows. The platform also highlighted best practices in RESTful service design, role-based rendering, and secure user data handling.

The inclusion of AI-based task suggestions, toast feedback, and map filters reflect a well-rounded understanding of modern web development and user empathy—especially crucial for accessibility in elder-focused applications.



## **CHAPTER: 5 CONCLUSION**

# Chapter 5

## Conclusion

### 5.1. Conclusion

The **CareConnect** project demonstrates effective use of modern web technologies to build a socially responsible, real-time volunteer assistance platform. Its core strengths lie in modular architecture, a compassionate user interface, and strong integration between Angular, Flask, and MongoDB Atlas. By enabling elders to post help requests and verified volunteers to fulfill them, the project successfully fosters a connected, supportive community environment.

Throughout development, the project showcased key software engineering concepts such as role-based routing, API design, mobile responsiveness, and real-time task tracking. Features like AI-suggested matches, emergency alerts, and toast feedback further demonstrated thoughtful UX design tailored to the elderly community. CareConnect reflects a practical application of full-stack skills in a meaningful real-world scenario.

## 1.1. Future Scope

The future scope of the "DMart Clone – E-Commerce Platform" project is extensive and highly promising, with several potential enhancements that could significantly elevate the platform's usability, intelligence, and commercial viability.

- The future scope of the CareConnect platform includes enhancements that will elevate its reach, security, and accessibility:
- Integration of AI-based urgency prediction algorithms to prioritize help requests based on elder health and past task behavior.
- Real-time chat between elders and volunteers for better task coordination and companionship.
- Secure OTP-based login and CAPTCHA to further strengthen authentication.
- Volunteer leaderboard, gamification, and reward-based systems to increase engagement.
- Government or NGO tie-ups for scalable city-level deployments.
- Voice-controlled interface and screen-reader support for differently-abled elders.
- Integration with services like Google Maps API for dynamic location tracking and task radius filtering.
- Biometric or Aadhaar-based verification for volunteers in future production-ready builds.
- Real-time chat between elders and volunteers
- Volunteer leaderboard and reward system
- Integration with government elder-care initiatives
- SMS-based notifications and updates
- Voice interface for visually impaired elders

## Bibliography

- [1] S. Iyer and T. Khandelwal, "Bridging Digital Divide for the Elderly: Opportunities and Challenges," *International Journal of Gerontechnology*, vol. 8, no. 1, pp. 45–52, 2022.
  
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