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LOCTOGLOB: LocalHost To GlobalHost

A MINI-PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

Certified that this mini project "**LOCTOGLOB: LocalHost To GlobalHost**" isthe bonafide work of "**MUNEESH P (21162207701175)"** who carried out the project work under my supervision.

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Submitted for the End semester practical examination to be held on _____

INTERNAL EXAMINER **EXTERNAL EXAMINER**

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My sincere thanks to my family members, friends and other staff members of Computer Science and Engineering.

ABSTRACT

This project involves the development of a web-based application that simplifies port forwarding by using tools like ngrok and serveo. Users can log in through a secure login page, which offers options for signup and password reset. All user data is managed through a MongoDB Atlas database, ensuring secure handling of personal information. After logging in, users are directed to a dashboard where they can download the ngrok.exe and serveo.exe files, which are hosted on Mega.nz. Additionally, the dashboard provides setup instructions for configuring and running both ngrok and serveo.

When a user runs either executable, they are prompted to input their localhost URL, which is then converted into a public URL. This allows them to share their local environment with external users over the internet. The application simplifies the often-complicated process of port forwarding, making it accessible and efficient for both developers and users. By eliminating the need for manual network configurations, it streamlines workflows for those who need to expose local services like web applications, APIs, or SSH services to remote users.

Ngrok and serveo provide secure tunnels, which add an extra layer of security for users. The entire system focuses on making port forwarding not only easier but also more secure, reducing the risk of vulnerabilities. The user-friendly interface of the dashboard and the clear, step-by-step instructions for running these tools make it accessible even for individuals who may not be familiar with the technicalities of networking. The application ultimately provides a reliable, efficient, and secure method for exposing local environments to the internet.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This study focuses on developing a user-friendly port forwarding tool that leverages ngrok and serveo to allow users to access local servers remotely via public URLs, simplifying complex network configurations. The application includes a secure MongoDB Atlas-backed system for user authentication (login, signup, and password reset), and features a dashboard with download links for the ngrok.exe and serveo.exe files. Users are provided with clear setup instructions, and once they input their localhost URL, they receive a public URL for easy remote access to local services. This tool streamlines port forwarding, offering secure and accessible solutions for developers needing temporary links for testing or sharing web applications.

1.2 SCOPE OF WORK

The project involves understanding user needs and evaluating the technical feasibility of simplifying port forwarding using ngrok and serveo. It requires developing secure user authentication, with features like login, signup, and password reset, managed by MongoDB Atlas. The design includes a user-friendly dashboard where users can download executable files and access setup instructions. The system will allow users to input localhost URLs, which are converted to public URLs for easy port forwarding.

The backend will manage secure authentication, file hosting, and URL conversion logic, while the frontend will focus on building a responsive, intuitive interface for users to interact with the application. Security measures will ensure secure file handling, encrypted tunnels for port forwarding, and protection of user data. Functional, usability, and security testing will ensure the system operates smoothly. Once developed, the application will be deployed and maintained with regular updates and user feedback addressed.

Documentation will be created for both users and developers to guide system use and technical maintenance, ensuring long-term sustainability and ease of use for all stakeholders involved in the project.

1.3 AIM AND OBJECTIVES OF THE PROJECT

AIM:

The aim of this project is to develop a user-friendly web-based application that simplifies the process of port forwarding by utilizing tools like ngrok and serveo. The application provides secure access to local environments by converting localhost URLs into public URLs, allowing users to share their local services over the internet without the need for complex manual network configurations. The focus is on streamlining the process for developers and non-technical users while ensuring secure and efficient port forwarding.

OBJECTIVES:

1. Provide a secure login, signup, and password reset system with user data stored in a MongoDB Atlas database.
2. Simplify port forwarding by allowing users to easily input their localhost URL and convert it into a public URL using ngrok or serveo.
3. Offer a user-friendly dashboard for downloading ngrok.exe and serveo.exe files, along with clear setup instructions.
4. Enhance the security of local services by using secure tunnels provided by ngrok and serveo.
5. Make port forwarding accessible to both technical and non-technical users by eliminating manual network configurations.

CHAPTER 2

SYSTEM SPECIFICATIONS

2.1 HARDWARE SPECIFICATIONS

To ensure smooth operation of the web-based port forwarding application, the following hardware specifications are recommended:

- **Processor**: Intel Core i3 or higher (or equivalent AMD processors) to efficiently handle backend processes and user requests.

- **RAM**: At least 4 GB to manage multiple web requests and facilitate smooth operation of the application.

- **Storage**: 50 GB SSD for storing application files, user data, and downloadable executables (ngrok.exe and serveo.exe).

- **Network**: A stable and fast internet connection for handling real-time tunneling and URL generation tasks efficiently.

2.2 SOFTWARE SPECIFICATIONS

- **Operating System:** Ubuntu 20.04 LTS or higher (or any Linux-based server OS) for hosting the web application.

- **Web Server:** Node.js (v14 or higher) for handling backend processes and real-time communication.

- **Database:** MongoDB Atlas for secure and scalable data storage and management.

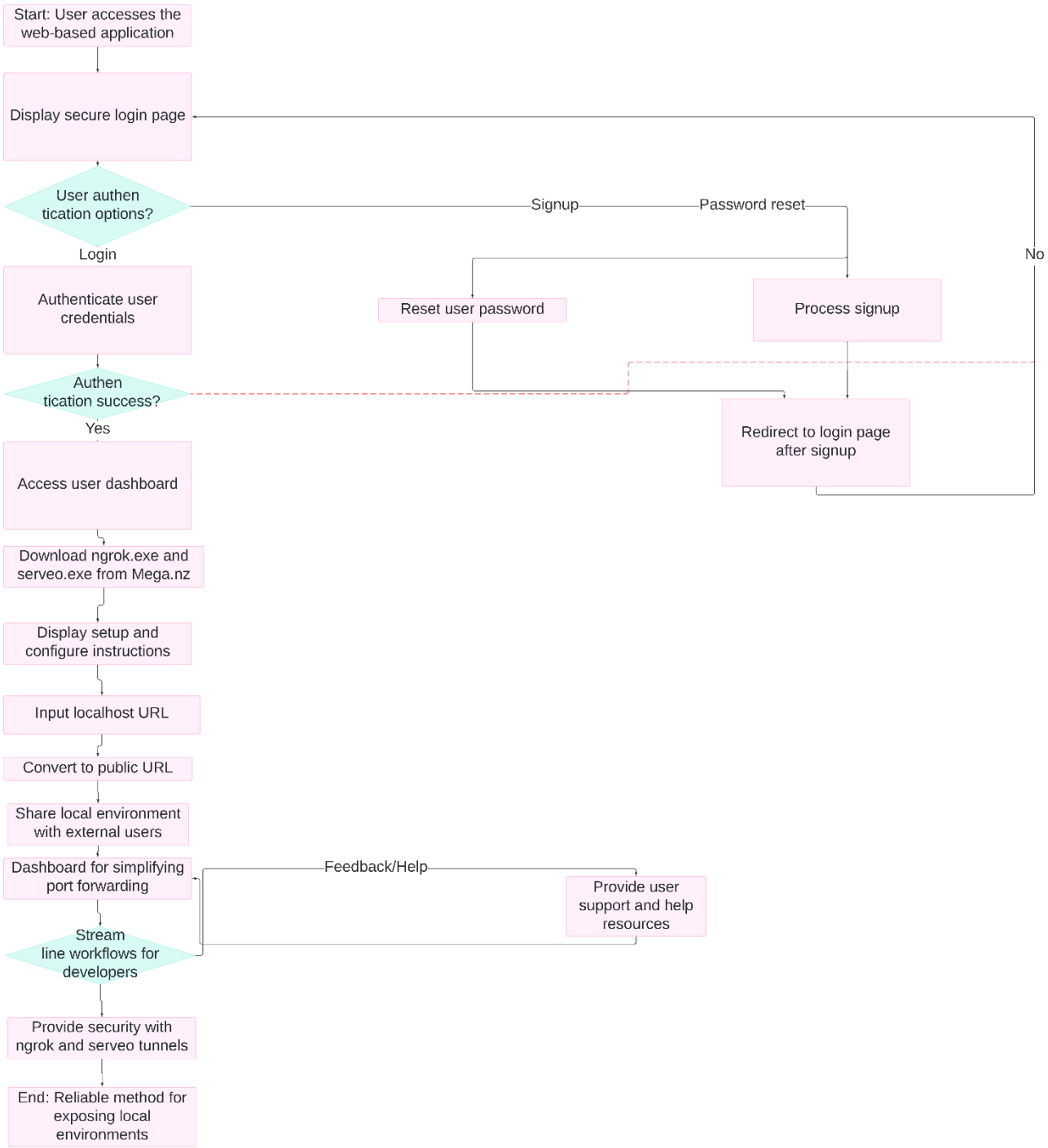
- **Frontend:** React.js for building an interactive and user-friendly interface.

- **Tools/Frameworks:** Express.js for managing API routes and backend logic, and Socket.IO for real-time event handling.

- **Version Control:** Git for managing and tracking code changes collaboratively.

CHAPTER 3

ARCHITECTURE DIAGRAM



CHAPTER 4

MODULE DESCRIPTION

4.1 LOGIN MODULE

The Login Module provides a secure authentication system for users to access the port forwarding application. Users can create an account or log in using their credentials. This module supports user management functions such as password reset and encryption for secure login, ensuring safe access to the application's dashboard and tools.

4.2 DASHBOARD MODULE

The Dashboard Module serves as the central hub for users once they log in. It provides a user-friendly interface where users can download the ngrok.exe and serveo.exe files, view setup instructions, and input their localhost URL for conversion into a public URL. The dashboard also displays system status and provides access to additional resources or settings.

4.3 PORT FORWARDING MODULE

The Port Forwarding Module is responsible for handling the conversion of localhost URLs into public URLs using ngrok or serveo. Users input their local environment URL, and the module generates a secure, shareable public URL. It streamlines the port forwarding process, eliminating the need for manual configurations and ensuring that the service is securely exposed to external users.

4.4 FILE MANAGEMENT MODULE

The File Management Module handles the secure download of ngrok.exe and serveo.exe from Mega.nz. It ensures that the files are safely accessible through the

dashboard and manages any updates or changes to the hosted files, providing users with the latest versions of the tools.

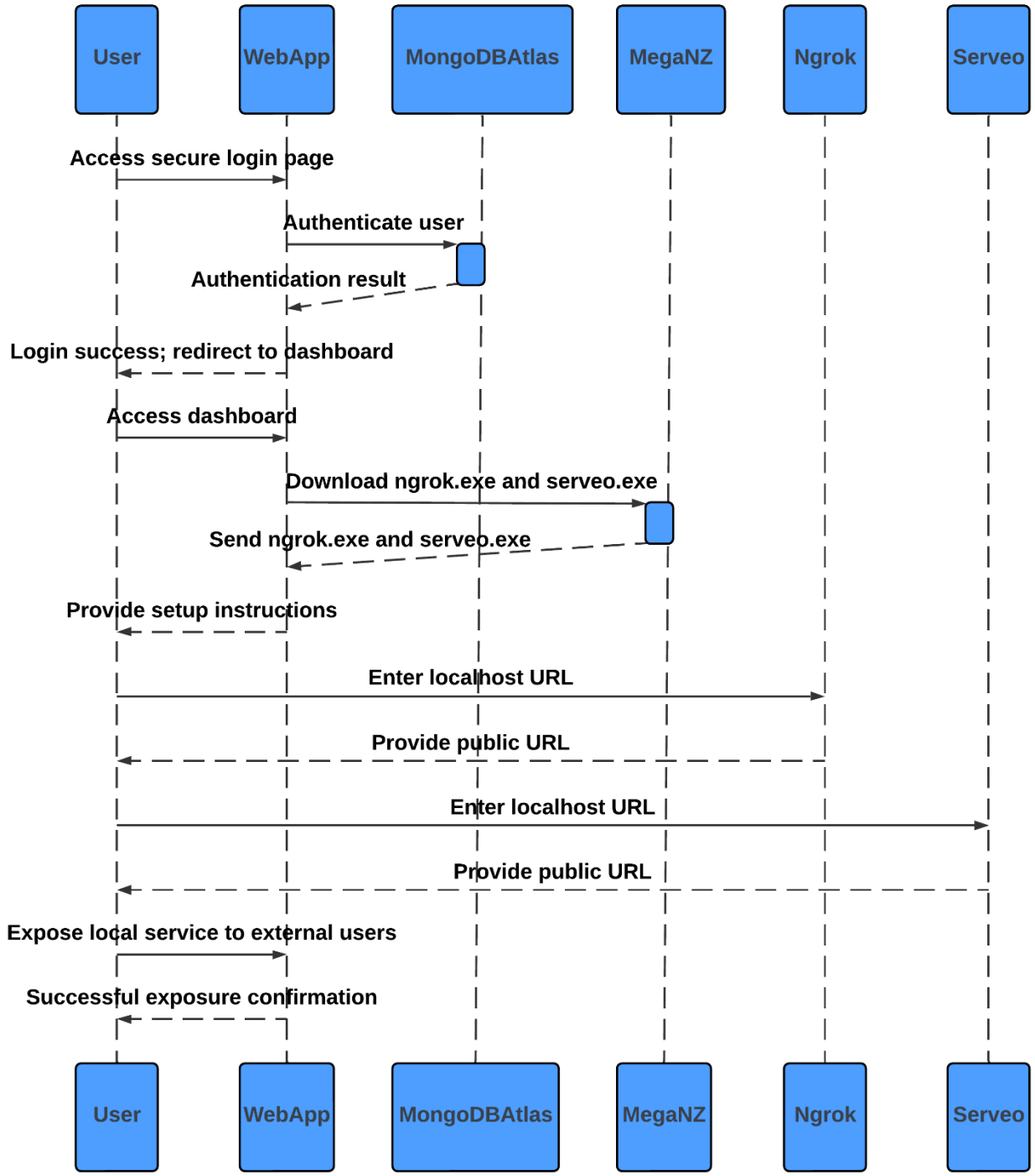
4.5 DATABASE MODULE

The Database Module manages user data such as account information, login credentials, and password recovery details. It utilizes MongoDB Atlas to securely store and retrieve this data, ensuring users can manage their accounts and access the application without any issues. This module also ensures the integrity and security of all user-related data within the platform.

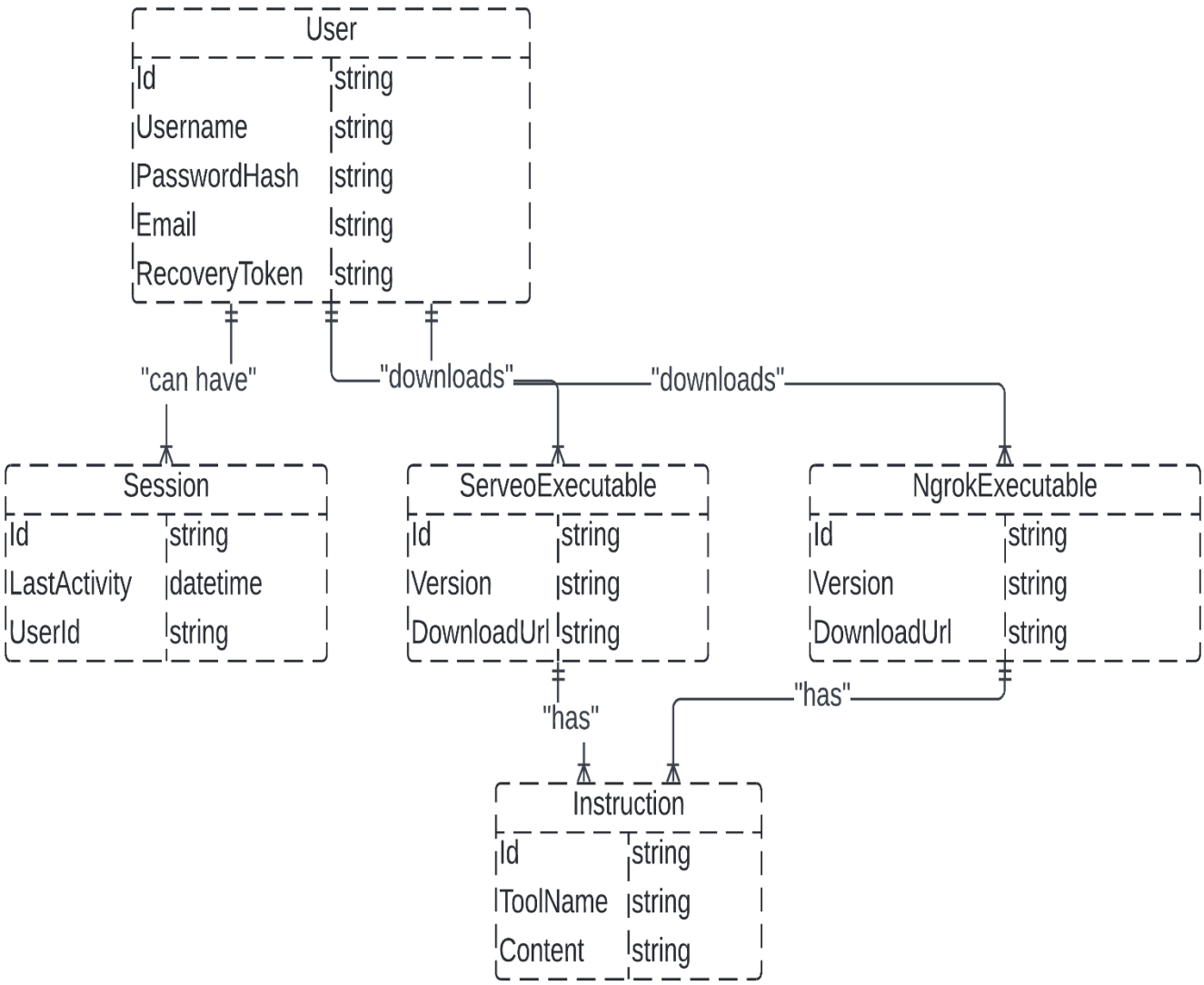
CHAPTER 5

SYSTEM DESIGN

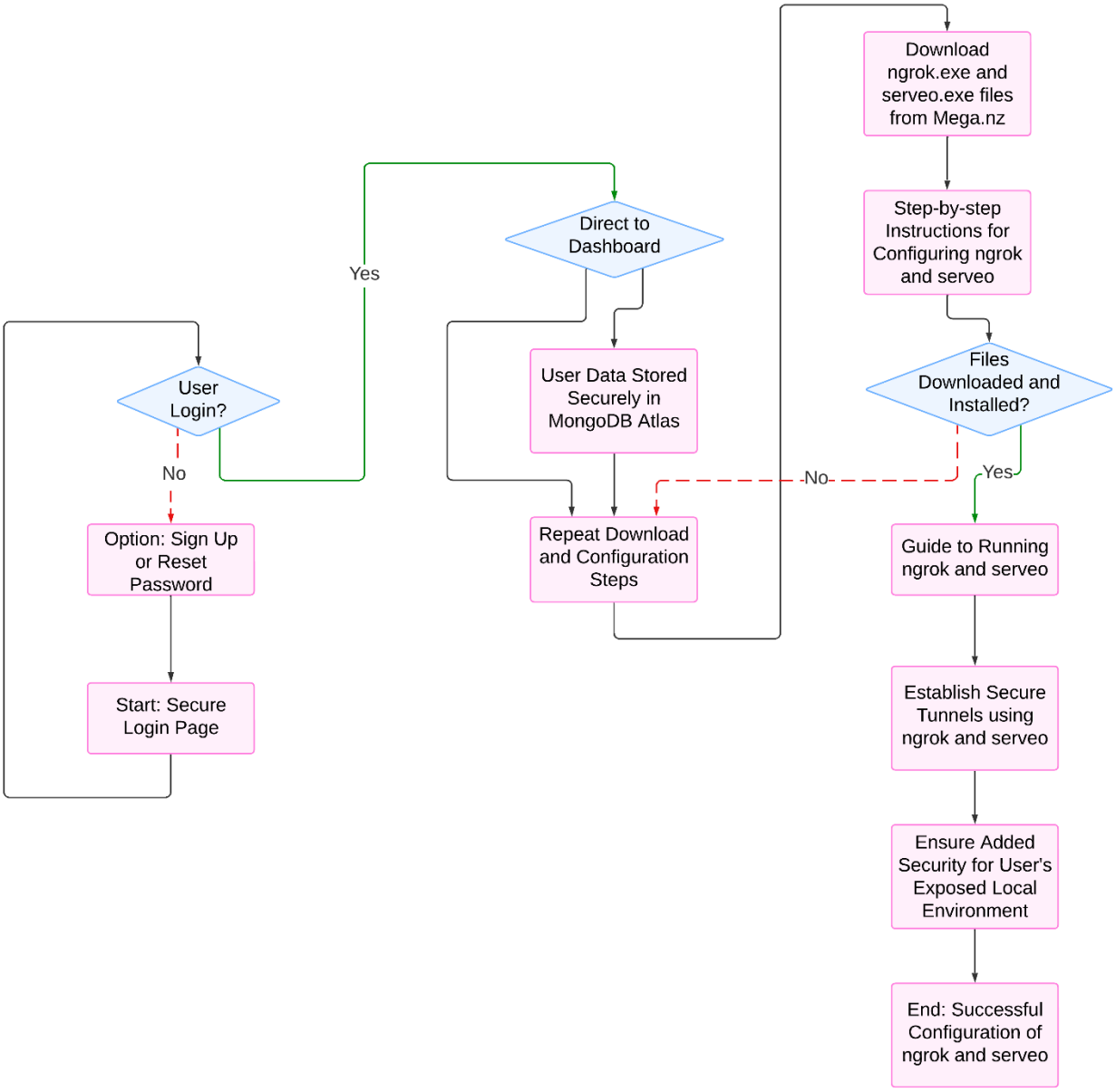
5.1 USE CASE DIAGRAM



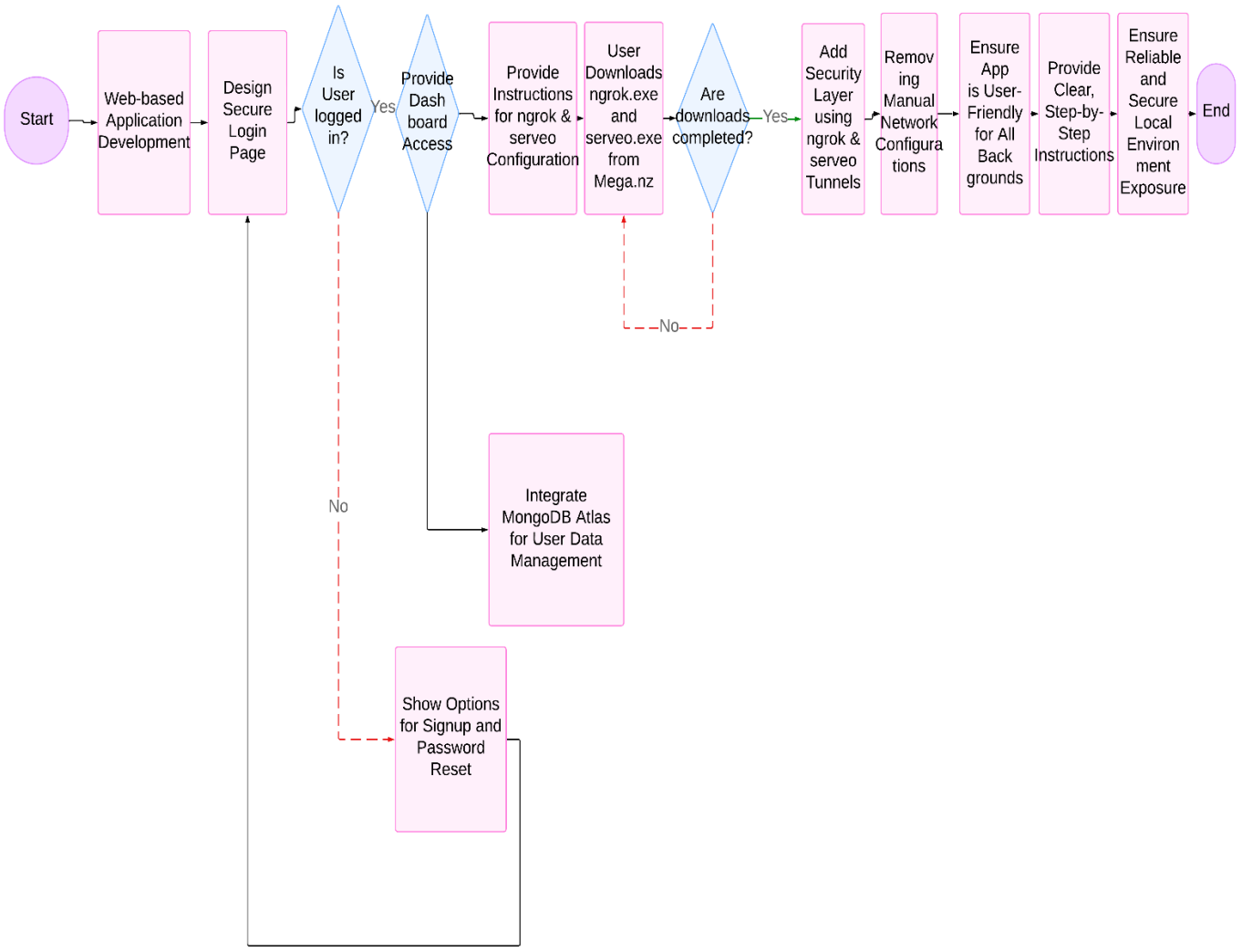
5.2 ER DIAGRAM



5.3 DATA FLOW DIAGRAM



5.4 ACTIVITY DIAGRAM



CHAPTER 6

SAMPLE CODING

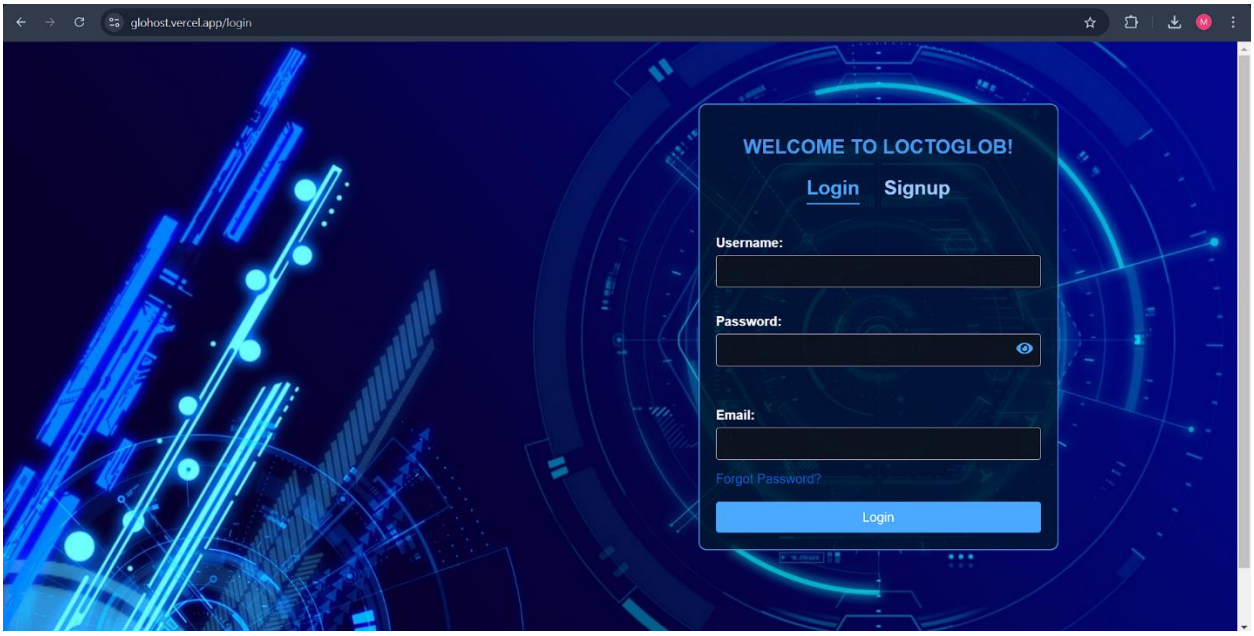
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>LOCTOGLOB</title>
    <link rel="stylesheet" href="/static/app.css">
    <link rel="icon" type="image/x-icon" href="/static/favicon.ico">
    <style>
        .logout-button {
            position: absolute;
            top: 10px;
            right: 10px;
            background-color: white;
            color:black;
            border: none;
            border-radius:50px;
            padding: 10px 20px;
            cursor: pointer;
            text-decoration: none;
        }

        .logout-button:hover {
            background-color: black;
            color: white;
        }
    </style>
</head>
<body>
    <!-- Logout button at the top-right corner -->
    <a href='/log-out' class="logout-button">Logout</a>

    <div class="container">
        <div class="App app-serveo">
            <header class="App-header">
                <h1>Download SERVEO Executable</h1>
                <button class="App-link download-button">
```

```
                                                                                <a
href="https://mega.nz/file/PV10gSLQ#VPLAIYGFevhS8wSCvebL7hlboJgyHzIiPmabpD1gTuE"
style="text-decoration: none; color: white;" target="_blank"> Download LOCTOGLOB.exe </a>
            </button>
            <p style="font-size: medium;">Need Help? <a href="/serveo">Help Centre</a></p>
         </header>
      </div>
      <div class="App app-ngrok">
         <header class="App-header">
            <h1>Download NGROK<br>Executable</h1>
            <button class="App-link db">
                                                                                <a
href="https://mega.nz/file/iUVmhSyb#o_zZNM6KnMjFwLbe5ja3SyyPyu40Xu7nqWwpO_HOIEo"
style="text-decoration: none; color: white;" target="_blank">
               Download LOCTOGLOB-ng.exe
            </a>
            </button>
            <p style="font-size: medium;">Need Help? <a href="/ngrok">Help Centre</a></p>
         </header>
      </div>
   </div>
</body>
</html>
```

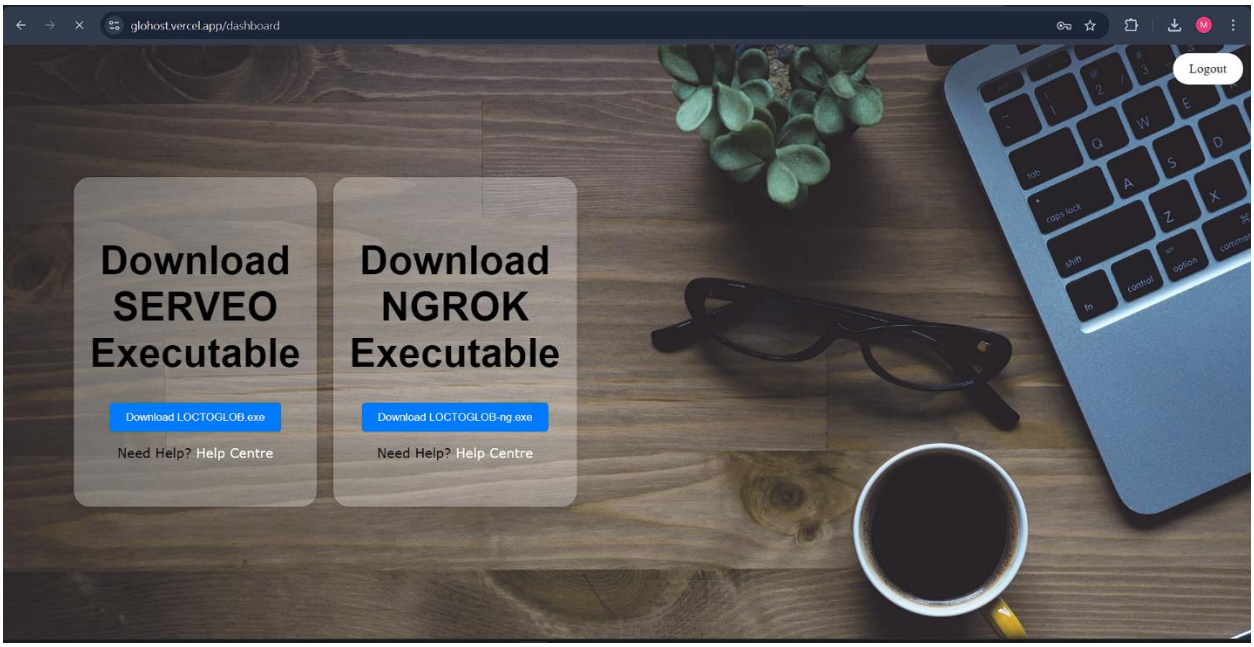
CHAPTER 7

SCREENSHOTS

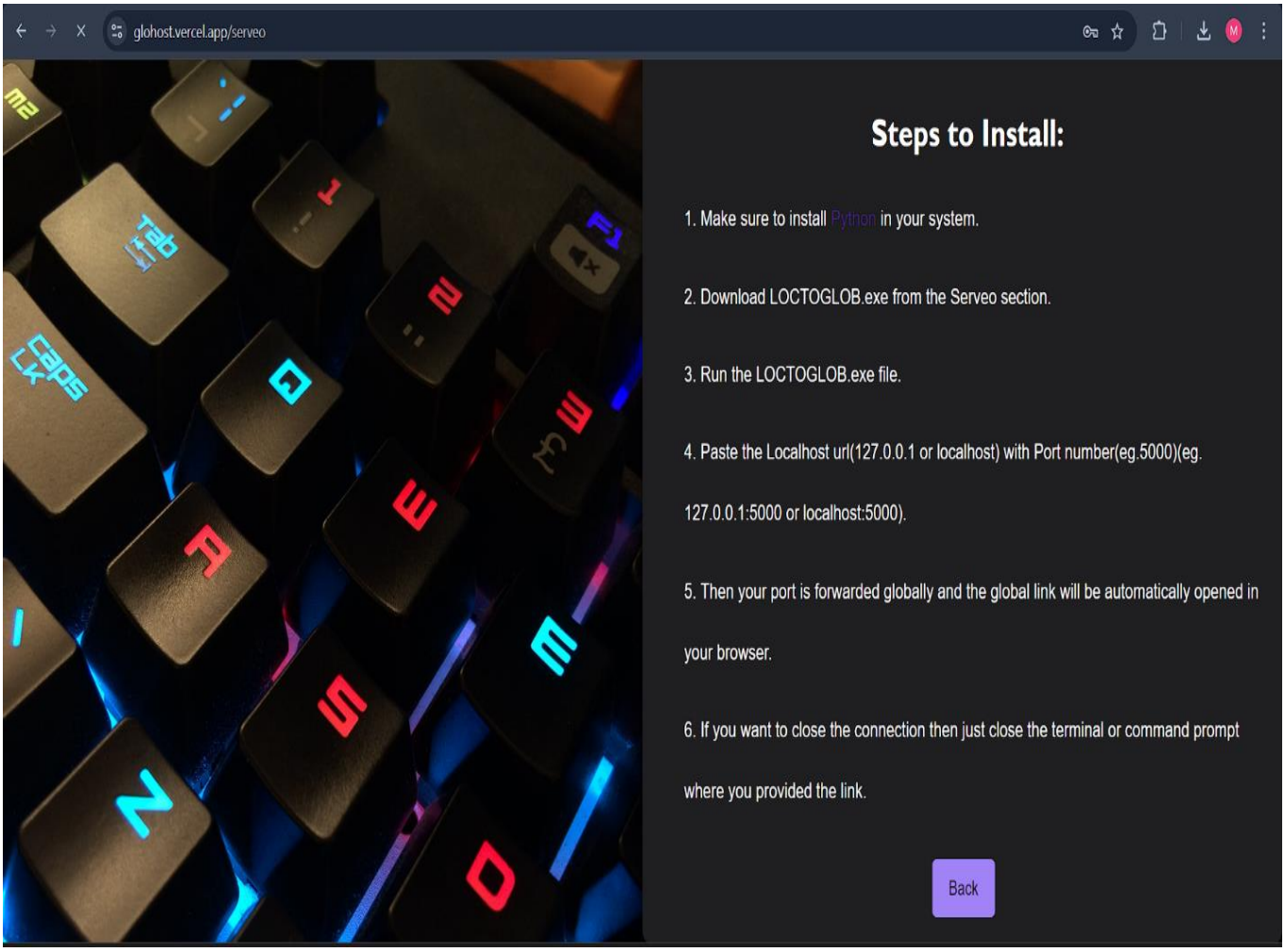
7.1 LOGIN PAGE



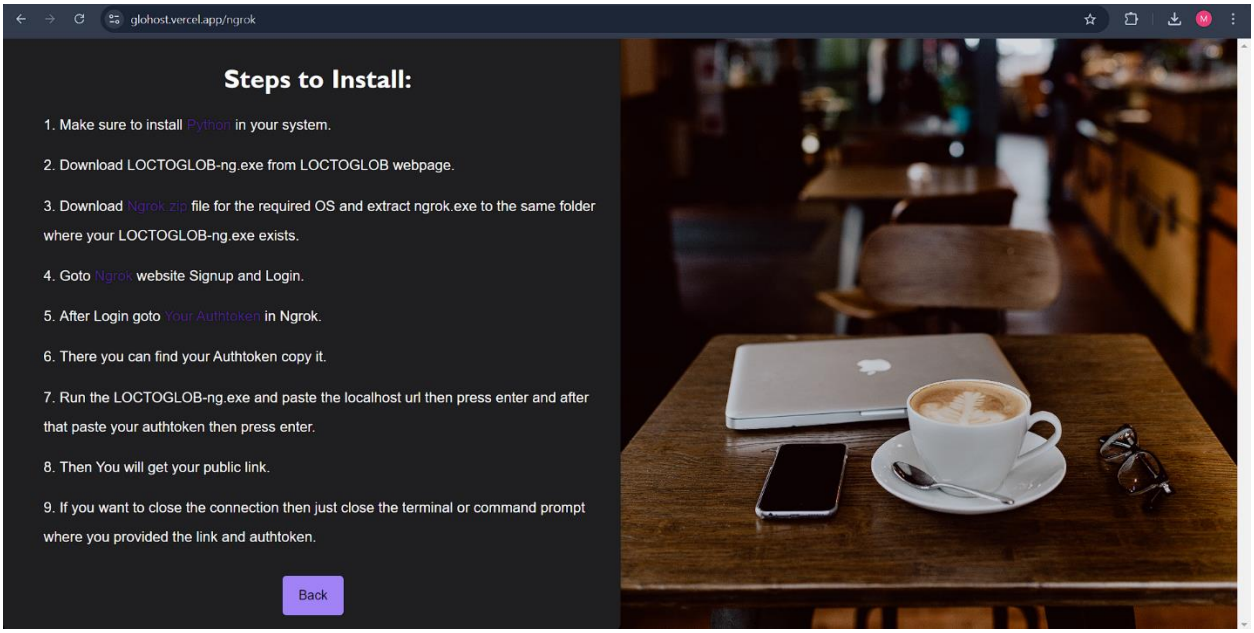
7.2 DASHBOARD



7.2 SERVEO PAGE



7.NGROK PAGE



CHAPTER 8

CONCLUSION

This web-based port forwarding application successfully simplifies the traditionally complex process of exposing local environments to the internet using tools like ngrok and serveo. By providing a secure login system, user-friendly dashboard, and automated URL conversion, the application eliminates the need for manual network configurations, making port forwarding accessible to both developers and non-technical users. The use of secure tunnels ensures that user data and exposed services are protected, while the integration of MongoDB Atlas guarantees reliable and scalable user data management. Ultimately, this project achieves its goal of streamlining port forwarding processes, enhancing security, and improving overall user experience.

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