Industry Internship Report

An Internship Report for

Course code and Course Title: CSA-652 Industry Internship

Credits: 16

Submitted in partial fulfilment of Master's Degree

Master of Computer Applications

by

AMBERLY CHELCIA SILVA

Seat Number: 2246

ABC ID: 158144664524

PRN: 201706821

Under the Mentorship of

Mr. ALLI AGA

Computer Science & Technology

Goa Business School

GOA UNIVERSITY

June 2024

Examined by:

Seal of the School/Dept

DECLARATION BY STUDENT

I hereby declare that the data presented in this Internship report entitled, “Industry Internship Report” is based on the results of investigations carried out by me at S.S. Technologies, Goa, under the mentorship of Mr. Alli Aga and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities will not be responsible for the correctness of observations / experimental or other findings given in the internship report/work.

I hereby authorize the University authorities to upload this internship report on the University repository or anywhere else as the UGC regulations demand and make it available to anyone as needed.

Date: 13 June 2024
Place: Goa University

Amberly Chelcia Silva
Seat no: 2246

COMPLETION CERTIFICATE

This is to certify that the internship report “Industry Internship Report” at S.S. Technologies, Goa, is a bonafide work carried out by Ms. Amberly Chelcia Silva under my mentorship in partial fulfillment of the requirements for the award of the degree of Master of Computer Applications in the Discipline of Computer Science and Technology at Goa Business School, Goa University.

Date: 13 June 2024 Name of Mentor: Mr. Alli Aga

Place: Margao, Goa

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OFFER LETTER

S.S.TECHNOLOGIES
AN AGARWAL GROUP ENTERPRISE

Ref No: SST/HR/24/003

Date: 4th May 2024

To,

Department of Computer Science & Technology,
Goa Business School, Goa University.
Taleigao Plateau, Goa, India, 403206

Sub: Internship Letter.

We are pleased to offer an internship to **Ms. Silva Amberly Chelcia**, a student at Department of Computer Science & Technology, Goa Business School, Goa University, Goa. for **React JS & Flutter** at S S Technologies, Margao-Goa. Based on the interview Ms. Silva Amberly Chelcia seems to be a curious learner, hope our company will be able to add value and help her to skill-up with hands-on experience on live projects.

Office Time: 9:00am to 6:00pm
Start Date: 5th January 2024
End Date: 6th July 2024

Thank you,

Warm regards,
For S S TECHNOLOGIES

S.S. TECHNOLOGIES MARGAO-GOA

Ekta Agarwal
CEO

INTERNSHIP CERTIFICATE

S.S.TECHNOLOGIES
AN AGARWAL GROUP ENTERPRISE

To Whomsoever It May Concern

This is to certify that Ms. Silva Amberly Chelcia, student of Master of Computer Applications (MCA) of Goa University, Goa. is currently undergoing her final semester- Industry Internship (Semester IV) at our company, S S Technologies from 5th January till 6th July 2024.

During her tenure she has met the expectations of her team lead and found to be regular and sincere.

This certificate has been issued on her request to submitted with the internship report at Goa University.

Yours Sincerely,

S.S. TECHNOLOGIES * MARGAO-GOA *

Ekta Agarwal
(S S Technologies)
CEO

IT Service
| Web Development | Web Hosting | Digital Marketing | Mobile App Development |

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Email: jitendra@agarwalgroupco.com | Website: www.agarwalgroupco.com

ACKNOWLEDGEMENTS

I would like to extend my heartfelt gratitude to everyone who contributed to making my internship a resounding success.

First and foremost, I am deeply grateful to Ekta Agarwal, our Founder and CEO, for providing me unwavering support throughout the internship. I am grateful to Ankita Korgaonkar, our diligent Administrator, for her assistance in coordinating various aspects of the internship.

Special thanks to Alli Aga, who served as both a Full Stack Developer and Project Manager, for his invaluable mentorship and guidance. His support was instrumental in shaping my skills and guiding me through the intricacies of project management. I would also like to extend my heartfelt gratitude to Sakshee Agarwal for her invaluable guidance in data analytics. Despite her busy schedule, she always found time to assist me, providing insightful advice that greatly enhanced my understanding and skills in this field. I would also like to express my sincere gratitude to our development team for their invaluable support and collaboration throughout the internship journey.

Additionally, heartfelt appreciation goes to Komal Devkar, our Creative Designer and Marketing Lead, and the marketing team for their creative insights and contributions, which significantly enhanced our projects.

Lastly, I extend my gratitude to my college professors and classmates for their continuous encouragement and support throughout my academic and internship journey.

EXECUTIVE SUMMARY

Organization Overview

S.S. Technologies, based in Goa, India, specializes in software development, offering customized solutions to align with clients' digital goals. Their comprehensive suite of IT services includes modern website design, digital marketing strategies, mobile app development, and branding solutions. Notable projects include My Doctors Desk, Agarwal Samaj, PharmSeva and Powerland. Within the organization, departments such as Administration, Development, Design and Marketing are responsible for various aspects of operations, ensuring quality service delivery and client satisfaction.

Tasks Handled

I gained hands-on experience in mobile app development, web development (specifically front-end), and data analytics. Under the guidance of my mentor, I underwent intensive training in Flutter and React JS for app development, alongside a data analytics project. In Flutter, I tackled tasks ranging from UI cloning to API integration, utilizing tools like FutureBuilder for asynchronous operations. React JS training covered areas like form handling, API calls, and state management using Zustand. Additionally, I worked on a data analytics project focusing on visualization using Python, Tableau, and Excel. These tasks deeply resonated with some of my college courses. Overall, the internship provided a comprehensive learning experience, enriching my skill set and solidifying my understanding of key concepts in software development and data analytics.

Learnings

The hands-on approach in flutter, react JS and data analytics revealed how concepts merge to build functional applications, emphasizing collaboration, communication, and problem-solving. I prioritized official documentation for efficient learning and practical examples. Innovative task management in the My Doctors Desk project demonstrated my adaptability and problem-solving skills, delivering solutions within set timelines. Reflecting on my abilities, I recognized strengths in adaptability, communication, and practical learning, as well as the importance of continuous learning, feedback, work-life balance, and effective time management.

Challenges Faced

Initially unaware of monthly retrospective meetings, I found them crucial for team transparency and collaboration. These CEO-led sessions allowed the entire team to reflect on project progress, share insights, and solve problems collectively, enhancing my professional growth and integration. During Play Store deployment, our app was rejected due to a permissions issue. Despite re-submissions, we faced repeated rejections. To meet the April deadline, we disabled the download button temporarily and pushed the app for review, planning to enable the feature later.

Overall, my internship was a professionally enriching learning opportunity

CHAPTER 1: ORGANIZATION/COMPANY

1.1 BIRDS-EYE-VIEW

S.S. Technologies, located in Goa, India, is a software development company that aligns business objectives with digital initiatives. Their approach involves direct collaboration with clients to define, design, develop, and deploy customized solutions that leverage the latest technologies to achieve business goals. They also design creative strategies and holistic digital marketing campaigns to help businesses grow, offering a comprehensive suite of IT solutions designed to enhance operational performance and provide competitive advantages. Their philosophy emphasizes growth through empowering clients with technology tailored to their specific business needs. The company prides itself on delivering quality service and ensuring customer satisfaction.

1.2 PRODUCTS/SERVICES

1.2.1 Company Products

The company offers the following products:

1. My Doctors Desk
    a. Web Application**:** My Doctors Desk software is a dependable and secure medical practice management solution, transforming clinics into fully paperless operations. It offers a range of features, including patient health records management for tracking treatment plans and health records, appointment scheduling displaying monthly appointments with patient details, inventory tracking for resource management, and financial

management with comprehensive reports and expense tracking. Moreover, the software prioritizes data privacy with military-grade 256-AES bit encryption, safeguarding sensitive personal information effectively.

b. Mobile Application: My Doctors Desk app is an all-in-one patient portal that streamlines healthcare management. Users can seamlessly register and manage their profiles, schedule, view, and modify appointments directly within the app, and conveniently access prescriptions and receipts in PDF format. Additionally, the app provides access to detailed medical histories, empowering users to make informed healthcare decisions. Clinic listings facilitate easy appointment scheduling by allowing users to navigate through registered and additional clinics. Moreover, curated health blogs keep users updated on relevant health topics, enriching their wellness journey.

2. Agarwal Samaj

At the regional level, all Agarwal Samaj branches are involved in various activities. All these activities are fundamentally linked to programmes such as human service or member-to-member reconciliation. Although the Central Committee of the Society is involved in many branch activities, there are still many functions held at the Central Committee of the Society level in which the branches must be directly or indirectly involved.

1.2.2 Services Offered

The services by S.S. Technologies are designed to be comprehensive and tailored to meet the unique needs of each client.

1. Website Design & Development: The company provides modern, responsive website design using WordPress and MVC frameworks. Their services include e-commerce solutions, Google Analytics, and social media integration, along with domain registration, SSL certification, and secure cloud hosting.
2. Digital Marketing: Their digital marketing services include setup and organic promotion on platforms like Facebook, Instagram, Google My Business, and LinkedIn. They manage reach-based and lead-based promotions, email, Google AdWords, SMS, and YouTube marketing to boost online visibility and engagement.
3. Mobile Application Development: They develop secure Android applications featuring OTP registration, token-based authentication, barcode integration, Google API, email and Excel integration, and payment gateway integration. They ensure secure cloud hosting for the apps.
4. Social Media Marketing: They create strategies for social media marketing to increase brand awareness and customer engagement across various social platforms.
5. Branding Package: They offer branding solutions to help businesses establish a strong brand identity.
6. Search Engine Optimization (SEO): They optimize websites to improve search engine rankings and attract more organic traffic.

7. Hosting and Maintenance: They provide reliable web hosting and maintenance services to ensure websites remain up-to-date and secure.
8. Pay Per Click (PPC) Ads: They manage PPC advertising campaigns to generate immediate traffic and leads.
9. Graphic Design: Professional graphic design services are offered to create visually appealing and effective marketing materials.

These services are part of S.S. Technologies' commitment to delivering quality IT solutions that add value to their clients' businesses.

1.2.3 Notable Projects

1. PharmSeva: It is a one-stop medical solution in Nepal. Offering a diverse range of products from various manufacturers, including generic medicines, OTC items, wellness products, vitamins, Ayurveda remedies, and surgical consumables. You can conveniently purchase medicines online and receive delivery within 24-48 hours in selected cities. Currently operational in Kathmandu valley, PharmSeva has plans for expansion into other locations soon.
2. Powerland: A mobile application for Powerland EV customers, providing data analytics for their vehicle while on board, with features like a mobile view dashboard and the ability to track and record trails taken while riding the ATV.
3. Vehicle Access Management System: A smart and secure system to monitor and capture images of vehicles at entry and exit points, record geo-location and timestamps in real-time, authenticate drivers, and provide analysis and reports with filters.

4. Zaiteey: It is an ultimate solution for hassle-free rental vehicle services tailored to your location. You can seamlessly navigate through a vast array of vehicles available for rent, all conveniently accessible based on your current whereabouts.

These projects demonstrate SS Technologies Goa's commitment to providing innovative IT solutions across various verticals.

1.3 SECTIONS WITHIN THE ORGANIZATION

1. Administration (Human Resource Management)
2. Development
    a. Website Development
        i. Front-End
        ii. Back-end
    b. Mobile Application Development
        i. Front-End
        ii. Back-End
    c. Hosting and Maintenance
3. Design and Marketing
    a. Graphic Designing
    b. Social Media Management
    c. Business Development
    d. Search Engine Optimization
    e. Pay Per Click Ads

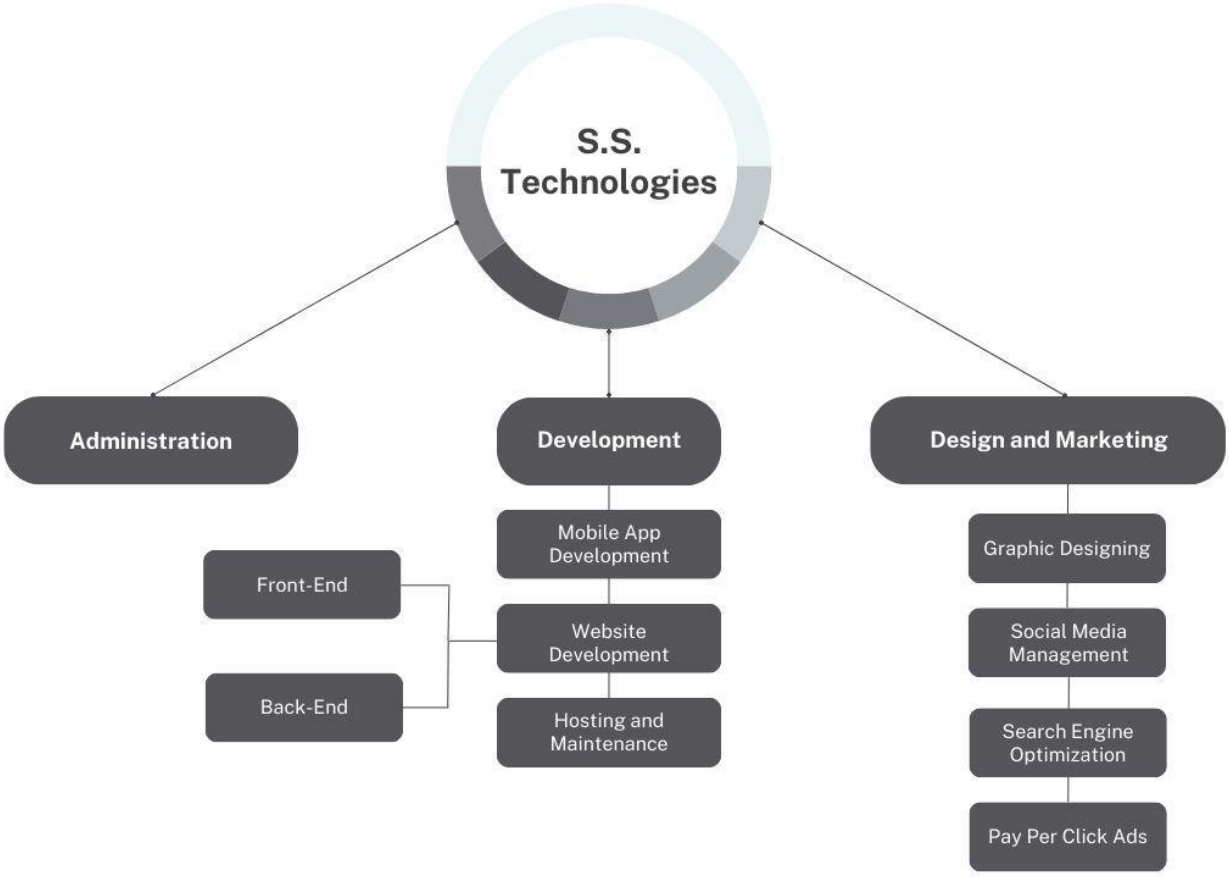


Figure 1.1 Organigram of the Sectional Divisions within the Organization

CHAPTER 2: TASKS HANDLED

2.1 SECTIONS WORKED IN

Mobile App Development - Tasks and Project

Website Development (Front-End) - Tasks

Data Analysis – Tasks

2.2 WORK SCHEDULE OVERVIEW

The working schedule is as follows:

Duration: January 5th to July 6th 2024

Working Days: Monday to Saturday

Working Hours: 9:00 AM to 6:00 PM

Note: The schedule excludes public holidays, on which there were no professional engagements.

2.3 TOOLS AND TECHNOLOGIES LEARNT/USED

VS Code (Visual Studio Code) is a popular open-source code editor developed by Microsoft. It's highly customizable, supports various programming languages, and has a rich ecosystem of extensions.

Dart is a free and open-source programming language developed by Google. It is a client-optimized language for developing fast apps on any platform and is type safe. It also forms the foundation of Flutter.

Flutter, also by Google, is an open-source framework for building natively compiled, multi-platform applications from a single codebase. It's fast, productive, and supports mobile, web, and desktop development.

ThunderClient is a lightweight REST API client extension for Visual Studio Code. It supports collections, environments, Git collaboration, and local storage.

Postman is an API client that simplifies testing and debugging APIs. It allows you to organize requests into folders, use variables, and inspect responses efficiently.

Git is a distributed version control system used for managing changes to code. It's efficient, flexible, and widely used by developers for tracking code changes and collaborating on projects.

Vite JS is a fast and lightweight front-end development tool with TypeScript support and lightning-fast Hot Module Replacement (HMR).

React (also known as React.js) is a free and open-source front-end JavaScript library. It's used for building user interfaces based on components.

TypeScript is a strongly typed programming language that enhances JavaScript, providing better tooling and catching errors early. It is strict when it comes to checking types, ensuring type safety and reducing runtime issues.

Tailwind CSS is a utility-first CSS framework that lets you build modern websites directly in your HTML using predefined classes.

Vercel is a Frontend Cloud platform for deploying and hosting web applications globally with ease.

Zustand is a lightweight state management library for React applications, emphasizing simplicity and performance.

Yup is a JavaScript schema validation library commonly used for form validation in web applications.

Python is a versatile, high-level programming language known for its readability and extensive libraries. It's widely used in data analysis, machine learning, and artificial intelligence projects.

Tableau Public is a free data visualization tool for creating interactive charts, graphs, and dashboards.

MS Excel is a widely used spreadsheet application for data analysis, calculations, and reporting.

Jupyter Notebook is an interactive environment for writing and executing code, especially popular for data science and machine learning.

SQL (Structured Query Language) is a programming language designed to manage data stored in relational databases (RDBMS). It allows you to query, manipulate, and interact with data efficiently.

2.4 TASKS EXPOSURE OVERVIEW

Over the course of my internship, I underwent intensive training in two leading frameworks for app and web development: Flutter and React JS. Under the guidance of my mentor, the training sessions were meticulously structured to provide a solid foundation in these technologies. After completing the app and web development tasks, I also had the opportunity to work on a data analysis project. The weekly modules covered specific aspects of development, including theoretical discussions, practical demonstrations, and hands-on assignments.

2.4.1 Flutter

The Flutter training started with a solid foundation in the Dart programming language, covering essential concepts including variables, data types, and functions. Then, emphasis was placed on structuring and organizing project files effectively, to ensure a streamlined and collaborative development workflow. With a strong grasp of Dart and project folder organization, the training seamlessly transitioned into Flutter basics, where fundamental concepts were explored in depth, paving the way for advanced topics. Tasks assigned under Flutter were as follows:

1. **UI Cloning (YouTube Landing Page):** I was tasked with cloning the design of the YouTube app's landing page. This task involved closely examining the layout, styling, and components of the YouTube app and implementing them using Flutter widgets. Through this assignment, I gained practical experience in widget composition, layout structuring, and UI design principles in Flutter.

2. **UI with a Screen and a Custom-designed Keyboard**: I developed a custom-designed keyboard integrated with a screen. The keyboard was designed to display typed text in real-time on the app screen, enhancing user interaction with responsive keyboard input. This assignment required me to implement custom UI components and handle user input events efficiently.
3. **Forms Implementation:** I learnt to design and implement forms with validations in Flutter. This involved creating input fields, defining validation rules, and handling user input events. Additionally, I explored techniques for seamless data transfer between different screens in the app, ensuring continuity of information for users as they navigate through the application.
4. **CRUD Assignment (To-do App with Tabs):** I created a to-do app with intuitive tabs for pending, ongoing, and completed tasks. I could seamlessly add, edit, and delete tasks, including titles and descriptions. Also, I introduced a feature to update task statuses, automating their movement across tabs. This assignment helped me in implementing CRUD functionalities, managing state across multiple screens, and enhancing task tracking and organization.
5. **API Testing with Postman and Thunder Client:** I gained practical API testing experience using Postman and Thunder Client, sending requests, inspecting responses, and validating API behavior. The process involves configuring API endpoints, specifying request methods (GET, POST, PUT, DELETE, etc.), headers, and parameters. These tools offer detailed response views, including status codes

and headers. Validation includes ensuring correct API responses to various requests, confirming expected outcomes.

6. **Worked with APIs for Data Integration using Dio Package:** Integrating APIs into the front end is crucial for connecting the user interface with server-side functions. I utilized Dio, a robust HTTP client for Flutter, to integrate data APIs. This included fetching data, processing responses, and presenting dynamic content in Flutter apps, ultimately boosting user engagement with real-time information.
7. **Implementing Providers for Efficient State Management**: I utilized providers to streamline state management across three screens featuring counters in the app. Changes made to a counter on one screen are instantly reflected on all screens. State management entails handling data that dictates UI appearance and behavior, which can alter user interactions or internal events. Providers simplify data access and updates throughout the app's widget tree, separating UI components from state logic. This segregation enhances application maintainability and scalability.
8. **Future Builder for Handling Asynchronous Operations:** I implemented FutureBuilder in my previous asynchronous tasks as it elegantly manages asynchronous data operations. It facilitates executing tasks like fetching data from APIs or file operations asynchronously, updating the UI based on task completion. It handles three stages: displaying error messages if an error occurs, showing loading indicators while resolving the Future, and updating the UI with received data upon successful completion.

2.4.2 React JS

The React training started with revising JavaScript basics, establishing a strong foundation before delving into React JS, a potent UI library. Emphasis was placed on hands-on learning, enabling practical application of concepts. Tasks in React JS training included:

1. **Using Vite JS to Create New React Applications**: I employed Vite JS, a fast and lightweight development server, to build React applications, benefiting from its optimized setup for seamless development and efficient code compilation. Utilizing BrowserRouter, I established page navigation and implemented routing mechanisms. Additionally, I honed my skills in creating reusable components, organizing them for scalability and maintainability. By effectively passing props across pages and components, I ensured efficient data flow, contributing to a robust architecture.
2. **Personal Portfolio Website using React JS and Tailwind CSS:** I was tasked with creating a responsive personal portfolio website using React JS, along with exploring Tailwind CSS. Tailwind CSS significantly improved the UI compared to traditional approaches like Bootstrap or pure CSS. The familiarity gained with Tailwind CSS provides reduced file size and improved maintainability.
3. **React Forms with React Hooks and Yup Validations:** I explored React forms using React Hooks for state management, avoiding external packages to delve into form handling's intricacies. This allowed me to understand the inner workings of form handling in React and how React Hooks are used for managing form state.

Additionally, I implemented the same form validations with the Yup library, a JavaScript schema validation tool. Yup offers a straightforward method to define rules, ensuring data integrity in React forms with ease.

4. **Implementing API Calls in React with Fetch and Axios:** I was tasked with integrating external dummy APIs into our application using both Fetch and Axios.
5. **Spotify Clone with Tailwind CSS and TypeScript:** To hone my skills further, I built a responsive Spotify clone using Tailwind CSS for styling and integrated TypeScript instead of plain JavaScript for type safety and to minimize runtime errors. This project not only improved my proficiency in React development and Tailwind CSS but also showcased the advantages of TypeScript, such as enhanced code readability and scalability.
6. **Hosting Spotify Clone on Vercel:** After completing the Spotify clone, I deployed it online using a hosting platform: Vercel. This step allowed me to showcase my project to a wider audience and gain practical experience in deploying React applications to production environments.
7. **Zustand for Efficient State Management:** I utilized Zustand for efficient state management across three counter pages in the React app. Like the approach in a Flutter assignment utilizing providers, where incrementing or decrementing on one page reflects changes on other pages, Zustand's lightweight and straightforward API provided a seamless solution for managing application state, ensuring scalability and maintainability.

2.4.3 Data Analysis

The tools/technologies learnt during the Data Analysis training were Python, Tableau Public, MS Excel, Jupyter Notebook, SQL

I was tasked with a **visualization challenge to create a data dashboard for the US Department of Transportation (DOT) to identify optimal infrastructure investment areas**. Given the increased remote and flexible work schedules following the COVID-19 pandemic, the analysis focuses exclusively on 2020 data. I had to utilize Python for data cleaning and exploratory data analysis (EDA), Tableau for visualization, and Excel if needed.

Key analysis objectives included:

1. Identifying locations with the highest accident rates.
2. Determining the main contributors to accidents.
3. Highlighting any other significant findings.

Steps followed for the Analysis:

1. Understanding the Problem Statement: I began by thoroughly understanding the problem statement and the requirements of the DOT.
2. Dataset Acquisition: I visited Kaggle to download the dataset and read about its characteristics. The dataset is a countrywide car accident dataset that covers 49 states of the USA. It contains data from February 2016 to March 2023, collected using multiple APIs that provide streaming (Real Time) traffic incident data. These APIs capture traffic data from various sources, including US and state

departments of transportation, law enforcement agencies, traffic cameras, and traffic sensors. The dataset includes approximately 7.7 million accident records.

3. Initial Data Handling: After downloading the dataset, I attempted to view it in Excel. However, due to its large size (approximately 2.8 GB), Excel was unable to load it. I then tried to read the CSV file in Jupyter Notebook, but it caused the notebook to stop responding.
4. Data Loading with Chunking Method: To handle the large dataset, I used the chunking method, which involves breaking the dataset into smaller chunks that can be read incrementally. This allowed me to load the data into a Data Frame without overwhelming my system.
5. Data Exploration and Cleaning: Once the dataset was loaded, I explored it to understand its structure and contents. I checked for missing values, data type conversions, and duplicate values. I filtered the dataset to include only 2020 data. I researched the columns to understand their significance and determined which columns were important for the analysis. Unnecessary columns were dropped to streamline the dataset.
6. Ensuring Data Readiness: After cleaning the data, I ensured it was ready for the visualization process. This involved final checks and validations to make sure the dataset was accurate and complete.
7. Exporting Cleaned Data: Once the dataset looked clean, I attempted to export it in Excel format (.xlsx). However, due to file size restrictions (the file was 110 MB), I encountered issues. I then exported the cleaned data in CSV format and opened it

in Excel. Using commas as delimiters, I successfully converted the data into rows and columns. After saving the file in Excel format, I imported it into Tableau for further steps.

8. With the data cleaned and prepared, I proceeded to create visualizations using Tableau to address the key analysis objectives. In Tableau, I imported the csv file and started making visualizations according to the needs of the problem statement, we can create new fields as per our needs by using calculations needed for the column and row panel, we can then easily plot the data to create visualizations. A worksheet in Tableau Public is like a canvas where you build individual visualizations (charts, graphs, maps, etc.). Dashboards allow you to combine multiple visualizations (worksheets) into a single interactive view. You can create a dashboard by dragging your existing worksheets onto it.
9. After the dashboard was completed and organized to meet my specifications along with the findings and necessary captions, I saved it and published it on Tableau Public. By publishing on Tableau Public, the DOT and other interested parties could access the dashboard online, enabling them to interact with the visualizations and gain valuable insights into optimal infrastructure investment areas.

2.4 HANDS-ON PROJECT EXPERIENCE IN FLUTTER

Project Overview (My Doctors Desk App)

I worked on an in-house project that focused on developing a dedicated app for the company's My Doctor Desk software along with my colleague, with a primary focus on the patients' module. The project aimed to streamline patient care by addressing challenges such as the loss of physical prescriptions and receipts, while providing a user-friendly experience. The key stages of our project journey are as follows:

1. Requirements Gathering and Feature Definition (Problem statement): I collaborated with my colleague to outline the requirements and features of the dedicated app for My Doctor Desk software. The core features to be included in the app included seamless login, patient registration, appointment management, prescription and receipt viewing, downloadable prescriptions and receipt documents in PDF format, medical history access, category-wise clinic listing, and curated health blogs.
2. Design and UI Development: We explored various design concepts on websites including Dribbble and Behance, to create a user-friendly and visually appealing interface. Our goal was to create an interface that was intuitive and inviting, avoiding overwhelming elements. We followed the company's branding guidelines and incorporated logo colors for brand consistency We also focused on other crucial aspects of UI design such as ensuring clear navigation, clean layout, intuitive user interactions, legible typography, and accessible color schemes.

3. Folder Structuring: Ensured clean file structuring to optimize collaboration between team members and maintained regular communication with my colleague to coordinate tasks and ensure consistency in coding standards and project organization.
4. GitHub: Created a repository on GitHub and established branches for both team members (my colleague and I) to facilitate collaborative development. Utilized version control features such as pushing, pulling, and merging, while regularly resolving conflicts to ensure code synchronization.
5. Development and Testing:

   Initial Development Phase:

   During this phase, we tested the app in debugging mode on the local server. Debugging mode allows us to use hot reload to quickly see changes without restarting the app and to run the app with assertions. For wireless connection to the phone as an emulator during debug mode, we use the command adb connect <IP>:<Port>. For example, adb connect 192.168.1.2:5555 establishes a connection to the device with the specified IP address and port number. In debug mode, we typically work with individual APK files, which are larger because they contain all the resources for all device configurations.

   Quality Assurance (QA) Phase:

   Before transitioning to release mode, we perform rigorous internal testing. Our manual testing process involves developers and team members using the app to identify flaws or unexpected behaviors.

We perform various tests, including:

1. Functional testing: Ensuring all features work correctly.
2. Usability testing: Evaluating user experience.
3. Interface testing: Verifying UI elements.

Once the app passes internal testing, it undergoes a final review by the company CEO or product team. Feedback may lead to last-minute feature additions or changes.

Release Mode:

When the app is ready for users, we switch to release mode. Release mode turns off all debugging and assertions and optimizes the app for fast startup, execution, and a small package size. We generate an Android App Bundle (AAB). AAB allows Google Play to optimize delivery by serving only necessary resources for specific devices. It includes all code and resources needed for the app but doesn't create a single APK file. AAB is not directly installable on a device like an APK file. When distributing the app to users, it's recommended to use the AAB format for better optimization and smaller download sizes. After completing the steps mentioned earlier, we successfully deployed the app on both the Google Play Store and the Apple App Store, ensuring compliance with their respective guidelines. Additionally, we crafted compelling app descriptions, uploaded engaging screenshots, and addressed any other necessary questions during the submission process.

Features of the App: My Doctors Desk

1. Patients can seamlessly log in with their registered email ID and effortlessly access a wealth of essential features.
2. Effortless appointment management, whether they're upcoming, completed, or canceled appointments. Patients can get comprehensive details such as date, time, doctor's name, clinic, and purpose. They can also make changes, including cancellations and rescheduling, by making calls directly within the app.
3. Patients can access their prescriptions and receipts conveniently within the app, allowing seamless viewing. (With the option to download them in PDF format, they can effortlessly save them directly to their phone's download folder for easy reference whenever needed), eliminating the hassle of losing physical receipts and prescriptions.
4. Comprehensive Clinic Listing wherein patients can effortlessly navigate clinic details with the app. They can explore their registered clinics under "My Clinics" or discover additional options listed under "All Clinics," sourced from My Doctors Desk Admin Panel. This seamless access empowers the patients to schedule appointments with ease, anytime, and from anywhere, simply by placing a call directly through the app.
5. Patients can effortlessly explore their medical history with the app.
6. Patients can stay informed and empowered with curated health blogs within the app.

2.5 RELATIONSHIP OF THE TASKS WITH THE CLASSROOM CLASSES

1. Web Development:

   In college, we were introduced to the basics of web development, covering HTML, CSS, and JavaScript, alongside popular stacks like MERN and MEAN. However, it was during my internship that I deepened my knowledge, particularly with React JS. The hands-on experience allowed me to explore React's component-based architecture and state management. Additionally, I leveraged my college foundation in HTML, CSS, and JavaScript to learn TypeScript and Tailwind CSS, enhancing my skills in modern web development. Overall, the internship bridged the gap between theoretical knowledge and practical application, solidifying my understanding of web development concepts.

2. Mobile App Development (Flutter):

   Despite not opting for Mobile App Development during my MCA course, I had the enriching opportunity to immerse myself in this dynamic domain during my internship. Working extensively with Flutter provided invaluable insights and hands-on experience that complemented my coursework. Surprisingly, many concepts in mobile app development overlapped with web development. Both domains emphasize user interface design, state management, and asynchronous communication with servers. Transitioning from web development to mobile app development felt intuitive and natural, owing to the shared principles and practices across both domains.

3. Data Science and Machine Learning:

   During these courses during college, we regularly engaged with datasets sourced from Kaggle, employing Python and its libraries for data cleaning and visualization tasks. The concepts and techniques learned in these courses formed the foundation for approaching the data analytics tasks during my internship.

4. Internet Technologies:

   The concepts learned in my college's Internet Technologies subject formed the foundation for understanding web development and communication protocols. This included TCP/IP, HTTP protocols, and client-server architecture. During my internship, this knowledge enabled me to effectively interact with backend servers using tools like Dio, Fetch, and Axios. Understanding web services and APIs from college facilitated deeper exploration during the internship, underscoring their importance in modern app and web development.

5. Software Testing:

   Knowledge of software testing methodologies and techniques, including manual and internal testing, guided the quality assurance process during the app development. Concepts such as unit testing, integration testing, and user acceptance testing were applied to ensure the reliability, performance, and usability of the Doctor Desk app before deployment to production environments. Internal testing involved rigorous manual examination by developers and team members to identify flaws or unexpected behaviors, ensuring a robust and user-friendly application experience.

CHAPTER 3: LEARNING

3.1 PRACTICAL EXPOSURE

From the practical exposure, I learned invaluable lessons that significantly differed from my college experience. I gained practical experience in two leading frameworks for app and web development: Flutter and React JS. In my college experience, theoretical knowledge was often supplemented with practical sessions. However, the internship emphasized practical learning over theoretical knowledge. Unlike the structured environment of college, where the focus is often on understanding concepts in isolation, the practical exposure enabled me to see how these concepts come together to build functional applications. Additionally, working on projects like the Doctor Desk app allowed me to understand the importance of collaboration, communication, and problem-solving in a professional setting. Unlike college projects, where the scope and objectives are predefined, real-world projects present dynamic challenges that require adaptability and critical thinking. This contrast underscored the importance of being ready to apply theoretical knowledge in practical scenarios and the significance of hands-on experience in bridging the gap between academia and industry, providing a holistic understanding of software development.

Moreover, during my practical exposure, I learned the importance of efficient learning strategies. In the past, I often spent significant time searching for tutorial videos on platforms like YouTube to learn new concepts or frameworks. However, through this internship experience, I realized the value of referring to official documentation for languages and libraries. Utilizing documentation not only provided comprehensive and

accurate information but also offered practical examples and usage scenarios. This approach not only saved time but also enhanced my understanding and proficiency in implementing various features and functionalities.

3.2 INNOVATIVE APPROACHES TO TASK MANAGEMENT

In My Doctors Desk project, we faced a significant challenge when considering a feature proposal to enable patients to schedule and cancel appointments directly through the app. However, given the current structure of the software where only clinics could manage appointments, implementing this feature would have required a major restructuring and thorough testing, potentially delaying the product release scheduled for the end of April.

To address this challenge efficiently, we brainstormed alternative solutions that could achieve similar outcomes without disrupting the project timeline. Recognizing the urgency of the situation, we opted to introduce a feature that listed patients' clinics and all available clinics within the app, eliminating the need for users to search for clinic details externally. Additionally, we integrated a call option for appointment management, allowing patients to directly contact their clinics through the app to schedule/reschedule/cancel appointments, streamlining the process and enhancing convenience. By implementing these innovative solutions, we not only avoided potential delays but also enhanced the functionality and usability of the app, ultimately delivering a high-quality product within the designated timeframe.

3.3 SELF-REFLECTION: ABILITIES, EXPECTATIONS, LIKES, AND DISLIKES

Through my internship experience, I gained valuable insights into myself and how I align with the expectations of my reporting officer, as well as my likes and dislikes. Here's what I learned:

1. Adaptability and Problem-Solving Skills:

   I discovered that I possess strong adaptability and problem-solving skills. The internship presented dynamic challenges that required thinking on my feet and finding innovative solutions, such as the feature proposal for the Doctors Desk app. By effectively addressing challenges and introducing alternative solutions, I demonstrated my ability to adapt to changing circumstances and overcome obstacles.

2. Communication and Collaboration:

   Participating in activities like retro meetings highlighted the importance of communication and collaboration in a professional setting. I learned that I am adept at expressing my insights, concerns, and suggestions during team discussions, contributing to a culture of transparency and continuous improvement. My ability to communicate effectively and collaborate with team members enhanced my overall performance and integration within the team.

3. Preference for Practical Learning:

   The internship reinforced my preference for practical learning over theoretical knowledge. Unlike college projects, where the scope and objectives are predefined, real-world projects allowed me to apply theoretical concepts in

practical scenarios, deepening my understanding of software development. I realized that hands-on experience not only bridges the gap between academia and industry but also provides a holistic understanding of the subject matter.

4. Value of Continuous Learning:

   Engaging in efficient learning strategies, such as referring to official documentation for languages and libraries, underscored the value of continuous learning. I recognized the importance of staying updated with emerging technologies and industry best practices to enhance my skills and proficiency in software development.

5. Appreciation for Feedback and Reflection:

   Participating in retro meetings and reflecting on project progress allowed me to appreciate the value of feedback and self-reflection. I learned to embrace feedback as an opportunity for growth and improvement, recognizing the importance of continuous self-assessment in achieving personal and professional development goals.

6. Maintaining Work-Life Balance:

   Balancing work commitments with personal life is crucial for overall well-being and productivity. During the internship, I learned to set boundaries and allocate time for relaxation and leisure activities, ensuring a healthy work-life balance.

7. Importance of Taking Short Breaks:

   Recognizing the significance of breaks in between work sessions, I incorporated short breaks into my daily routine. These breaks allowed me to recharge and

maintain mental clarity, ultimately enhancing my overall productivity and well-being.

8. Effective Time Management and Planning in Advance:

   Through the internship experience, I honed my skills in time management and learned the importance of planning tasks in advance. By allocating time for each task and prioritizing based on urgency and importance, I was able to maximize productivity and ensure timely completion of projects.

CHAPTER 4: CHALLENGES

4.1 THE ACTIVITY THAT I WAS UNAWARE ABOUT

At the company, I was initially unaware of the monthly retrospective (retro) meetings, which turned out to be a valuable activity for fostering transparency, collaboration, and continuous improvement within the team. These meetings, facilitated by our CEO and attended by the entire development and marketing team, including interns like me, served as a platform to reflect on the progress of completed, ongoing, and upcoming projects. During these retrospectives, each team member had the opportunity to share their insights, concerns, and suggestions regarding various aspects of the projects and the overall work environment. This open dialogue not only encouraged transparency but also facilitated a deeper understanding of the challenges and achievements across different departments.

One of the most beneficial aspects of these meetings was the collective problem-solving approach adopted by the team. By openly discussing challenges and brainstorming solutions together, we were able to address issues more effectively and implement improvements proactively. Additionally, these retrospectives provided a forum for celebrating successes, recognizing individual and team contributions, and fostering a sense of camaraderie among team members. Moreover, participating in these meetings allowed me to gain valuable insights into the company's operations, project dynamics, and organizational culture. It provided me with a broader perspective on how various teams collaborate and align their efforts to achieve common goals.

Overall, the retro meetings proved to be an enlightening experience, offering not only a platform for reflection and feedback but also contributing to my professional growth and integration within the team.

4.2 MEETING THE DEADLINES

Meeting deadlines is paramount in the fast-paced environment of software development. One instance where we demonstrated our ability to meet deadlines effectively occurred during the final stages of our project, particularly when preparing our app for deployment on the Play Store. Our deadline was set for the end of April. As the deadline approached, we encountered a setback during the hosting process on the Play Store. Our app featured a "view and download" option for prescriptions and receipts, which required the MANAGE EXTERNAL STORAGE permission. However, during the review process, our app was rejected due to this permission requirement. Despite our efforts to rectify the issue by reentering descriptions and explanations, our app faced rejection once again. Given the time constraints, we made a strategic decision to proceed with pushing the app for review once more, even with the download button disabled. This temporary measure allowed us to meet the deadline while addressing the immediate concern raised by the Play Store review process. Additionally, we devised a plan to introduce the download button functionality through a subsequent update, ensuring that the app remained compliant with Play Store guidelines without compromising on functionality.

By making informed decisions and prioritizing crucial features, we successfully navigated the obstacle and met our deadline despite the setback encountered during the Play Store review process.

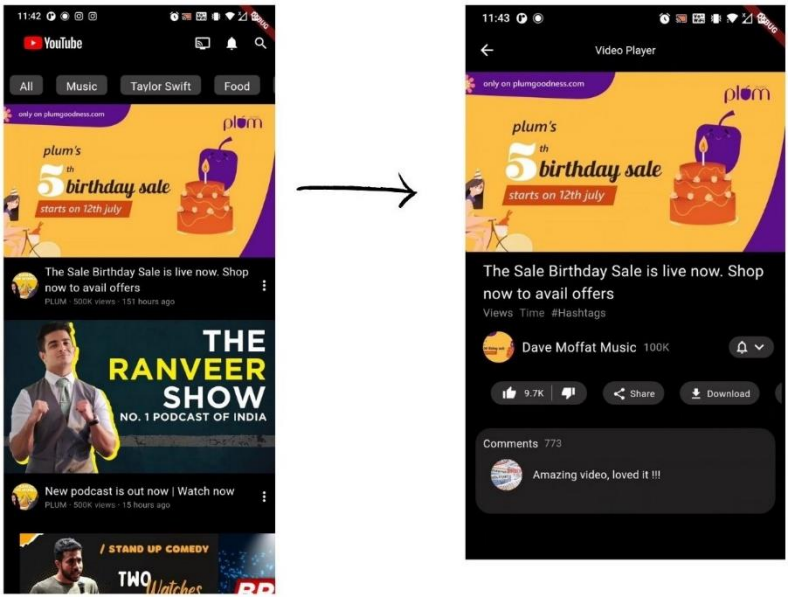
APPENDIX I: SAMPLES OF THE WORK DONE

Screenshots or links showcasing some of my work:

Flutter:

1. UI Cloning (YouTube Landing Page)

On Tap:



Home Page on scrolling:

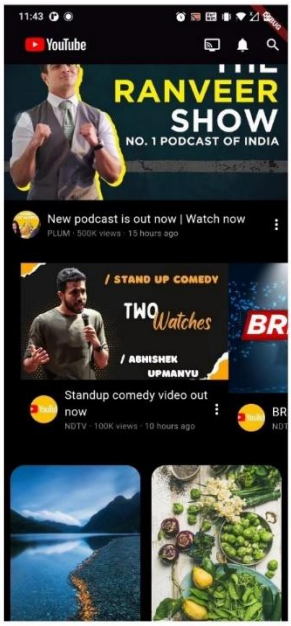
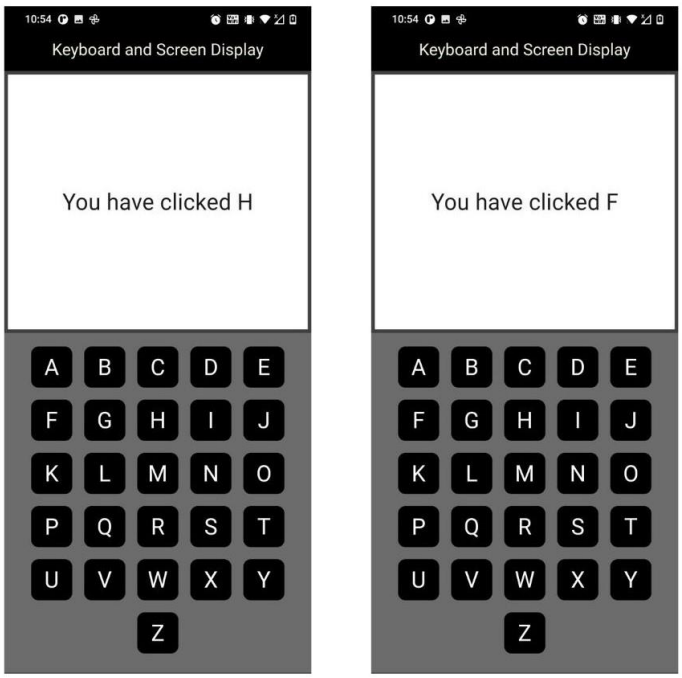
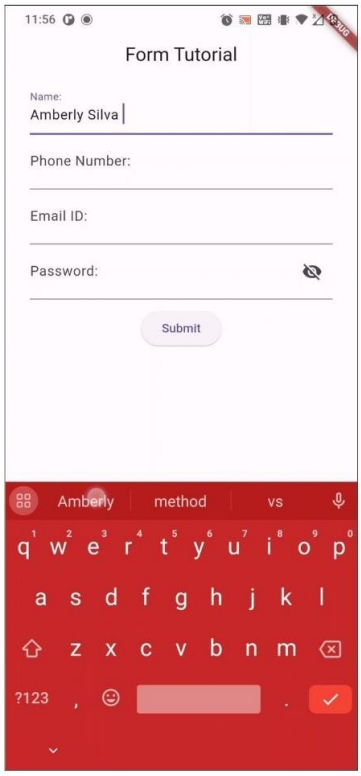


Photo Slideshow on swiping at the bottom section of screen:

2. UI with a screen and a custom-designed keyboard that displays typed text in real time on the app screen



3. Forms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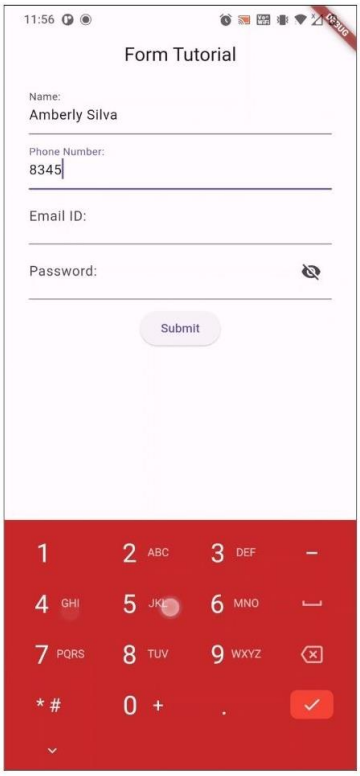
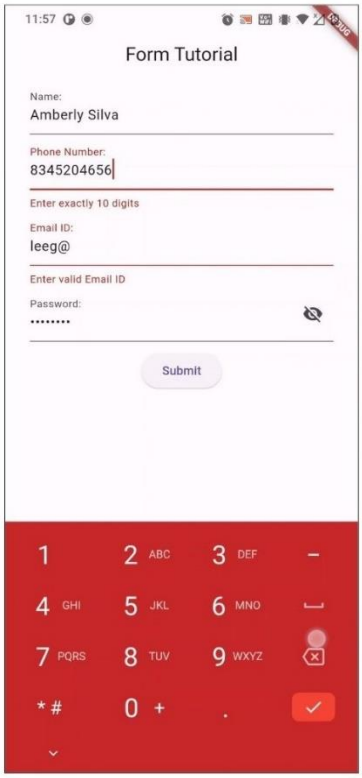
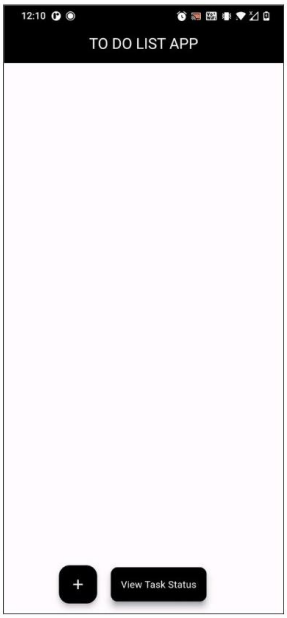
Form Tutorial
Name:
Amberly Silva
Phone Number:
Email ID:
Password:
Submit
Amberly
method
vs

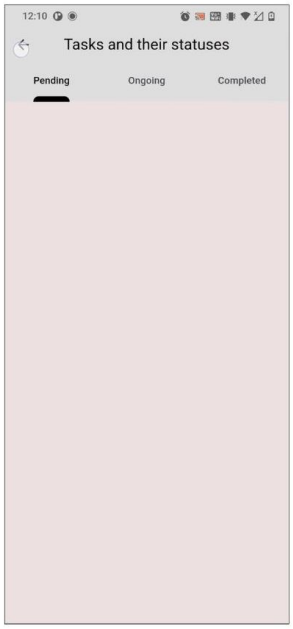

11:56
Form Tutorial
Name:
Amberly Silva
Phone Number:
8345
Email ID:
Password:
Submit

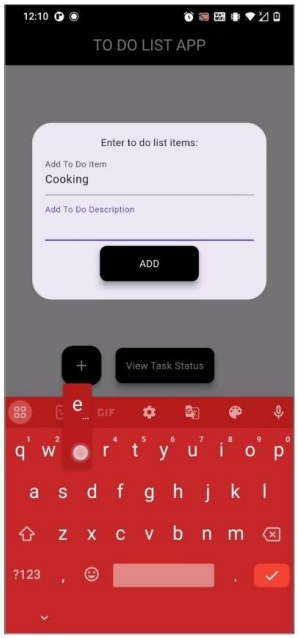

11:57
Form Tutorial
Name:
Amberly Silva
Phone Number:
8345204656
Enter exactly 10 digits
Email ID:
leeg@
Enter valid Email ID
Password:
Submit

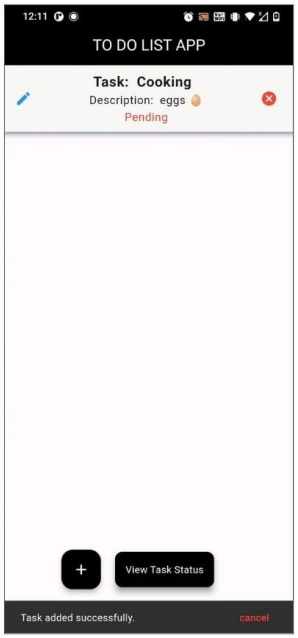

11:57
Form Data
Name: Amberly Silva
Phone: 8345204656
Email ID: leeg@gmail.com

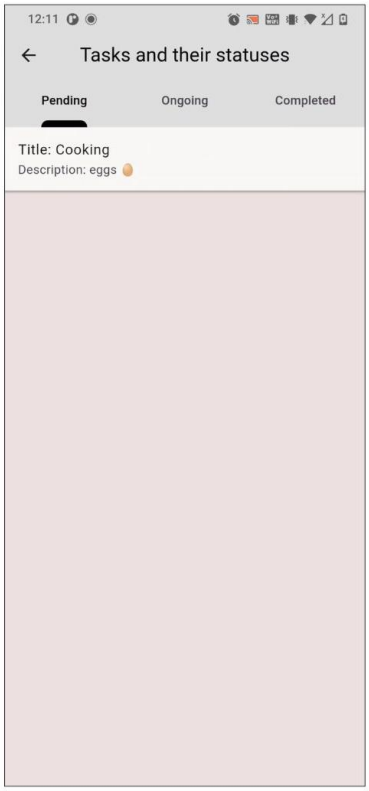
4. CRUD assignment: To-do app with tabs for pending, ongoing, and completed tasks

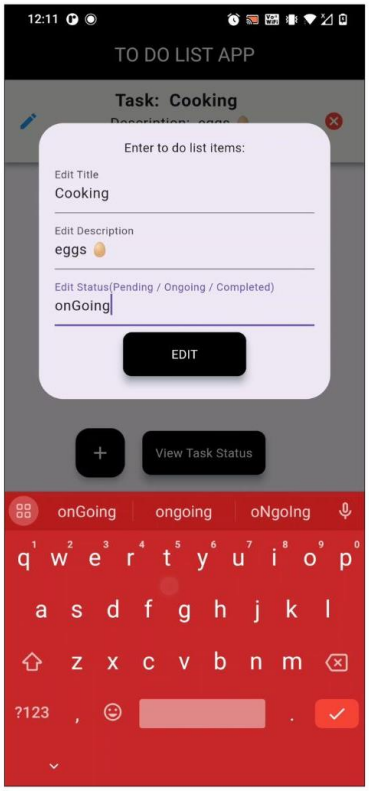


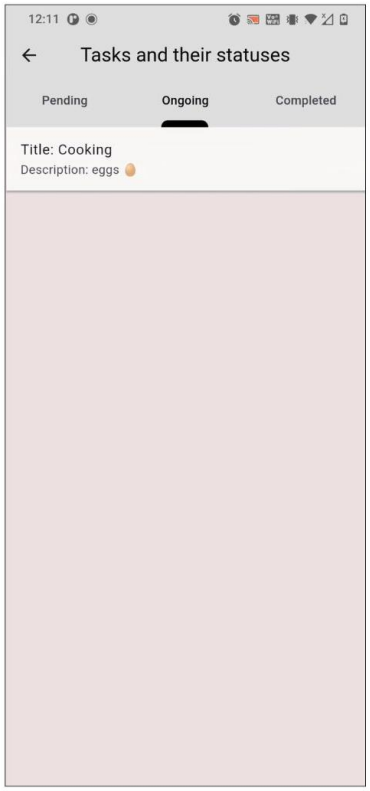




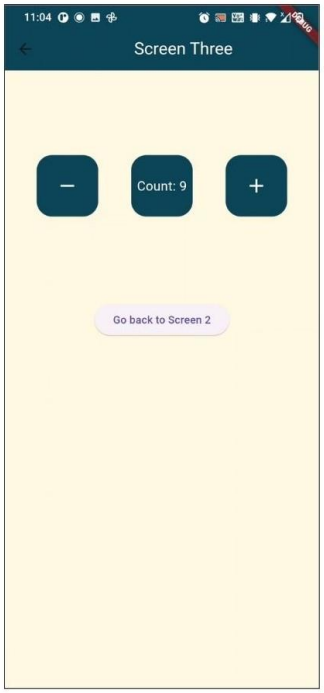






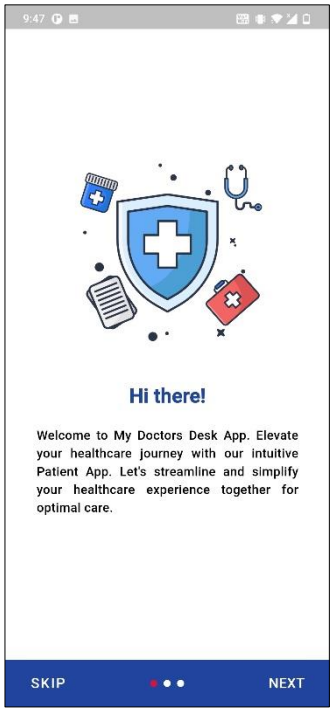


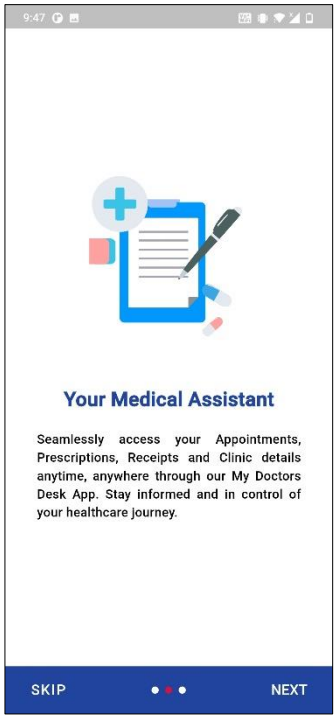
5. State Management using Providers



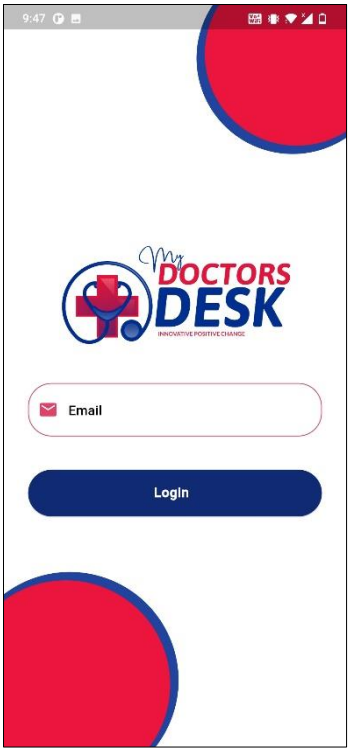
6. My Doctors Desk App

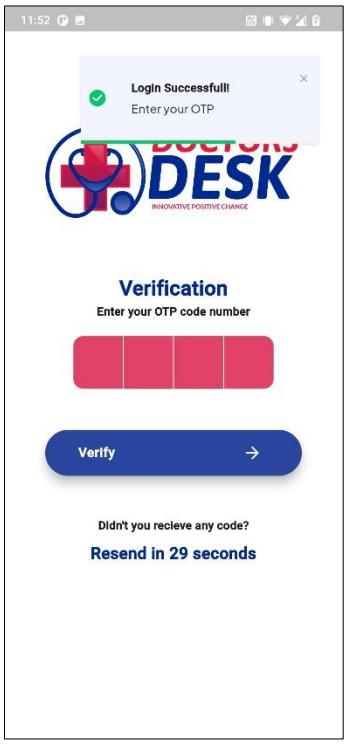
Onboarding Screens



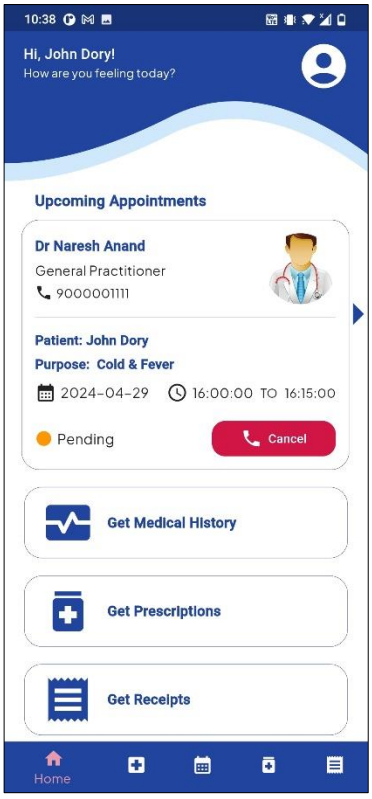


Login and OTP Screens

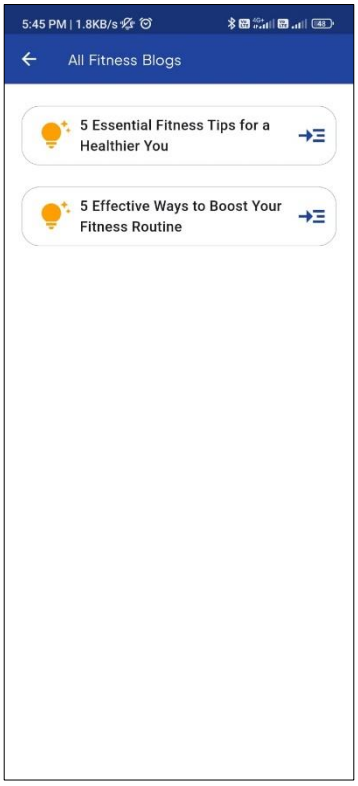


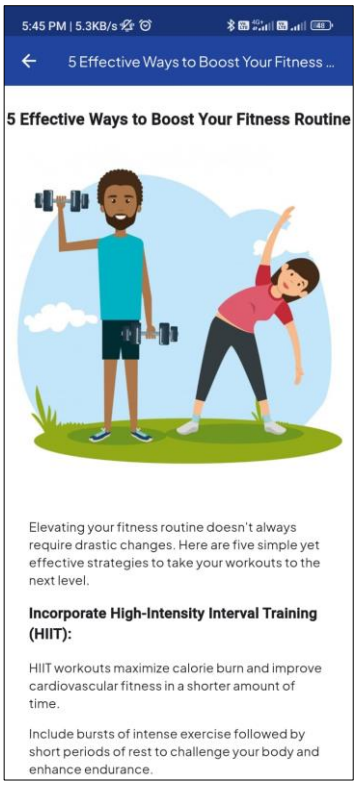


Home Screen

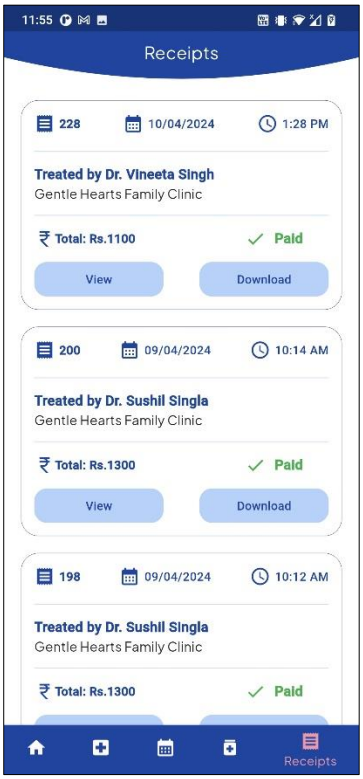


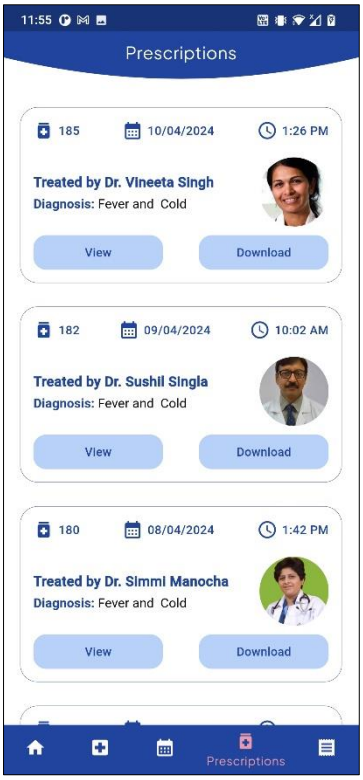
Blogs' Screens



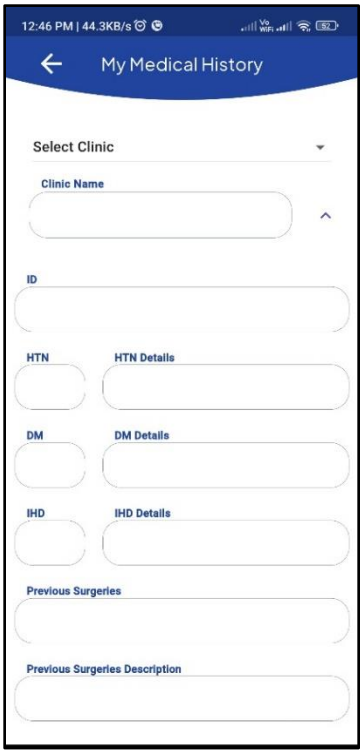


Receipts and Prescription Screens



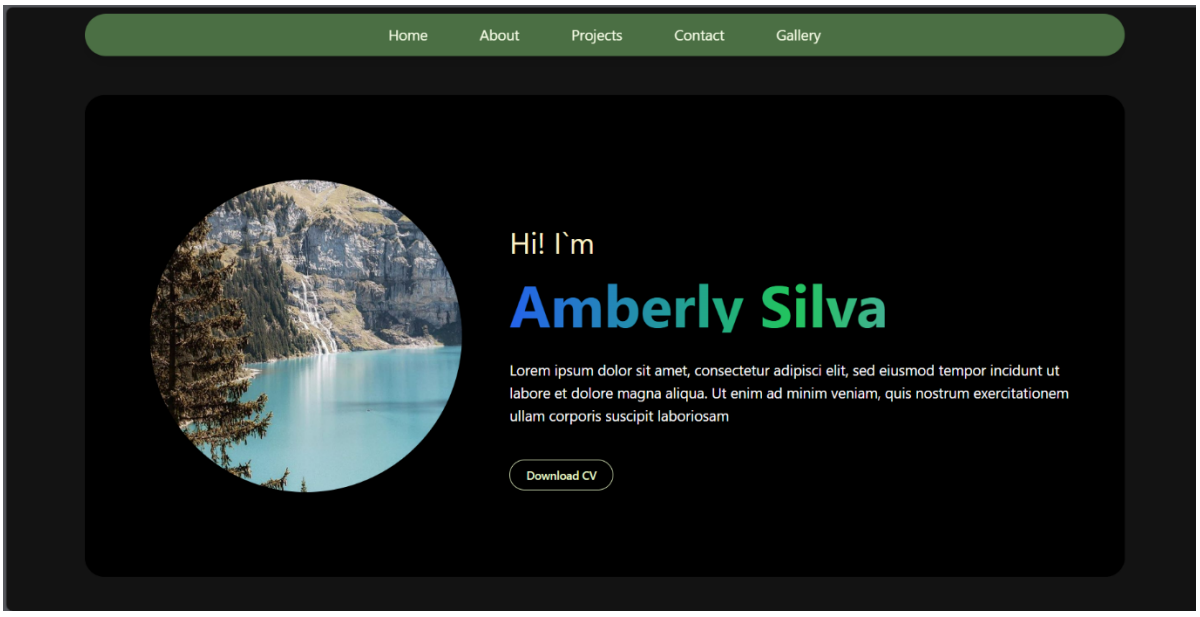


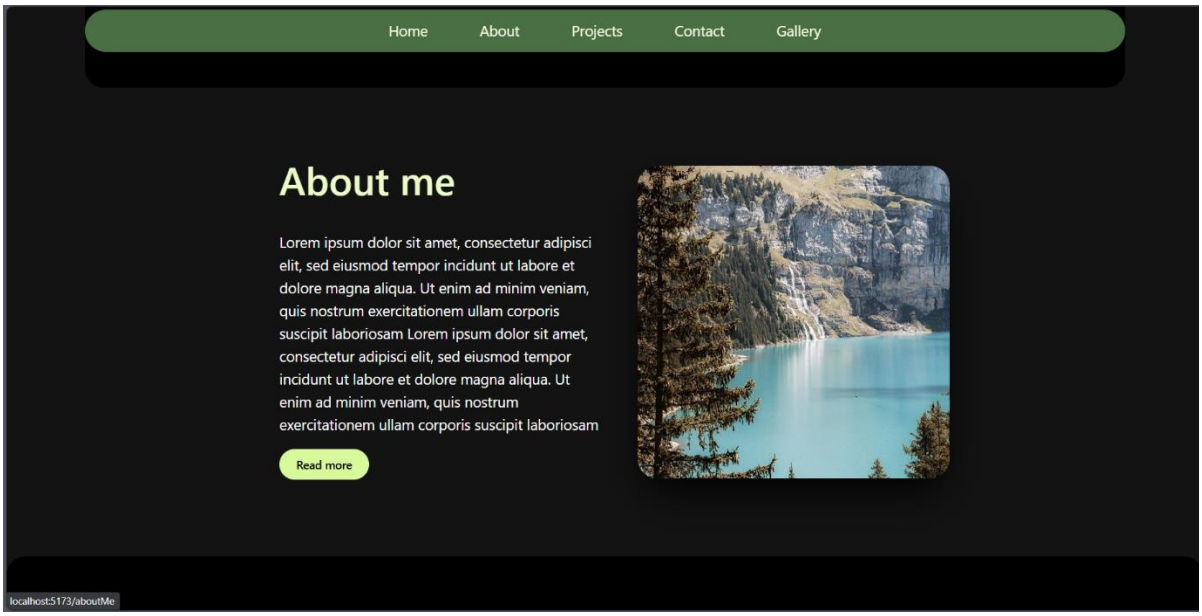
Medical History Screen



React JS

1. **Personal Portfolio Screenshots**




Home
About
Projects
Contact
Gallery
About me
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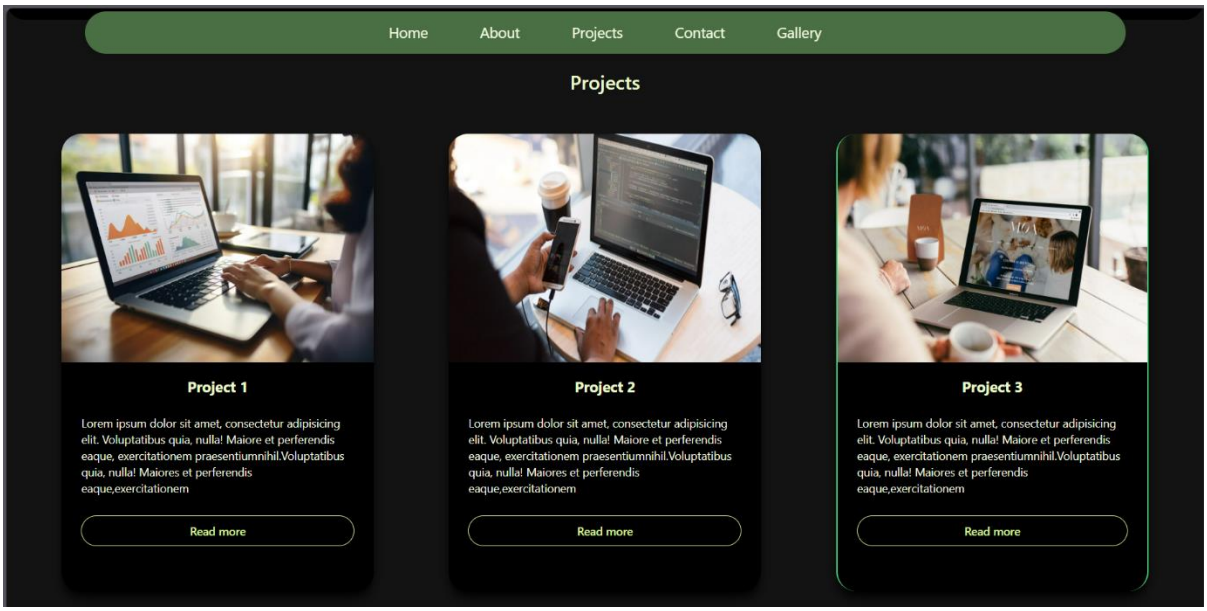
Read more
localhost:5173/aboutMe


Home
About
Projects
Contact
Gallery
Projects
Project 1
Lorem ipsum dolor sit amet, consectetur adipisicing elit. Voluptatibus quia, nulla! Maiore et perferendis eaque, exercitationem praesentiumnihil.Voluptatibus quia, nulla! Maiores et perferendis eaque,exercitationem
Read more
Project 2
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Read more
Project 3
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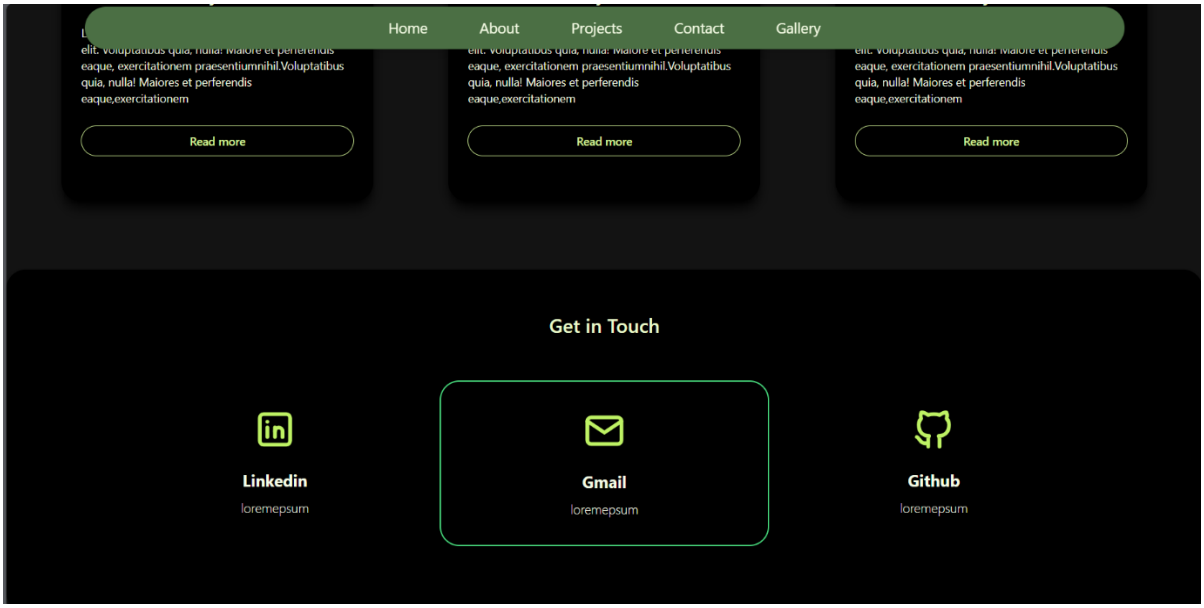
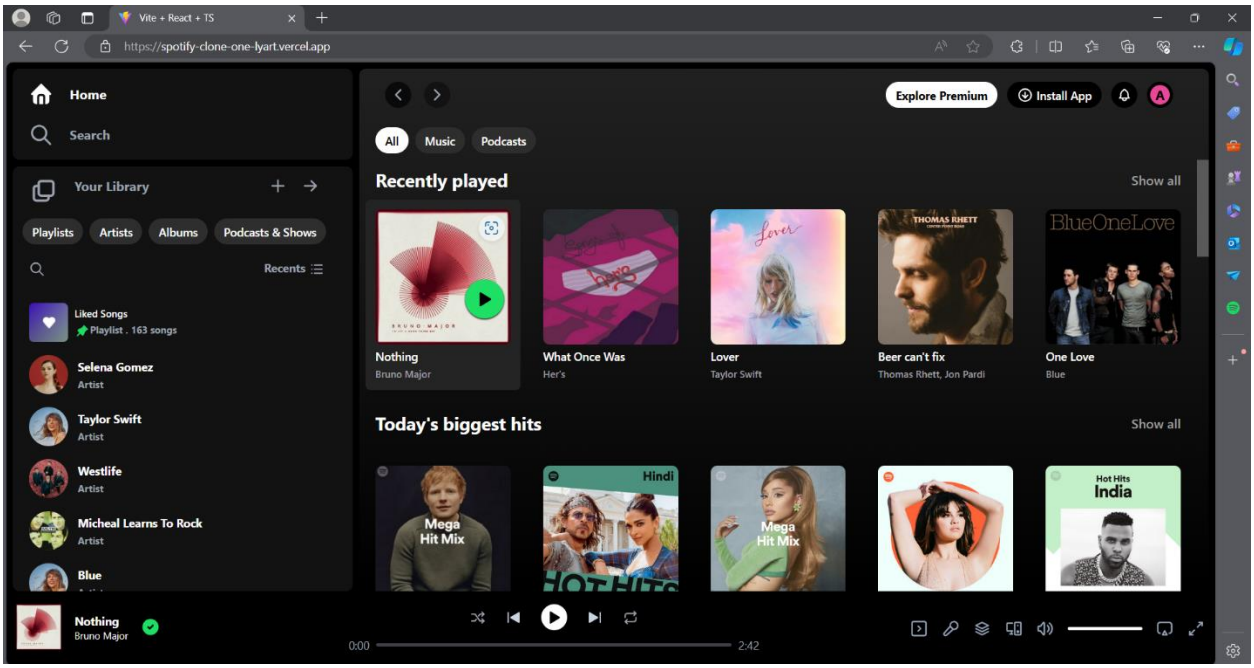
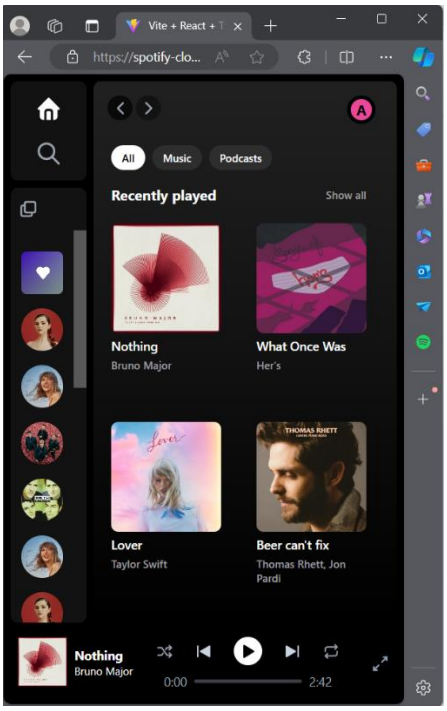


2. Spotify Clone Link and Screenshots

Vercel Link: https://spotify-clone-one-lyart.vercel.app/

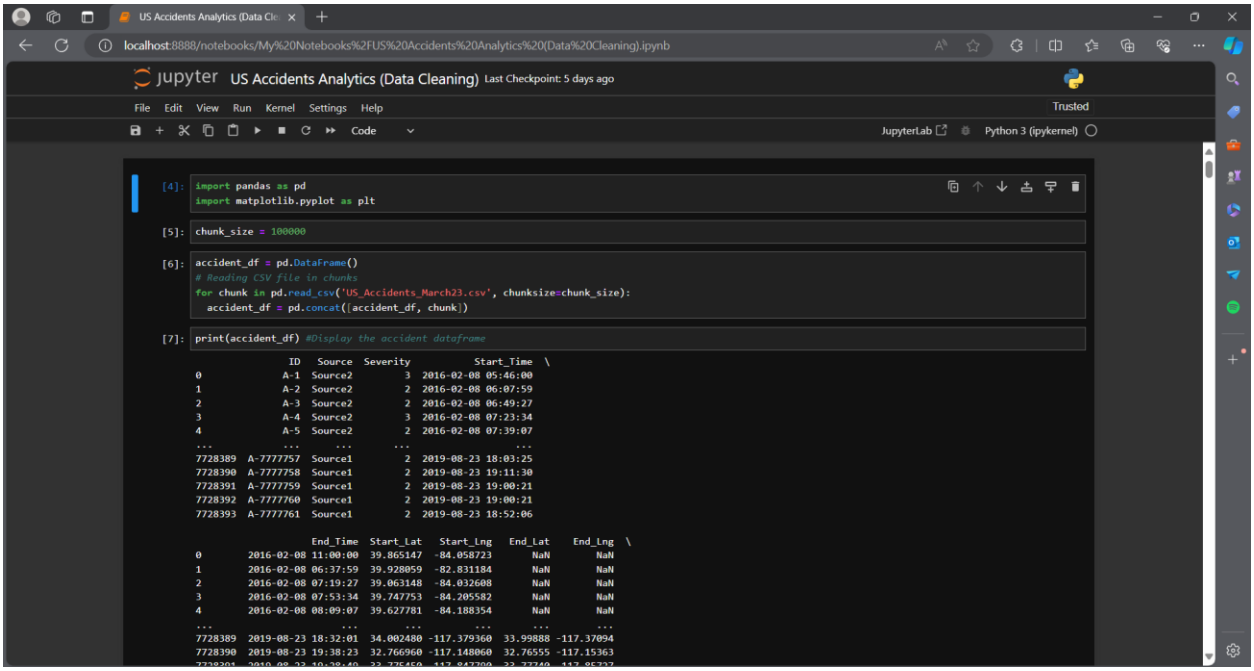


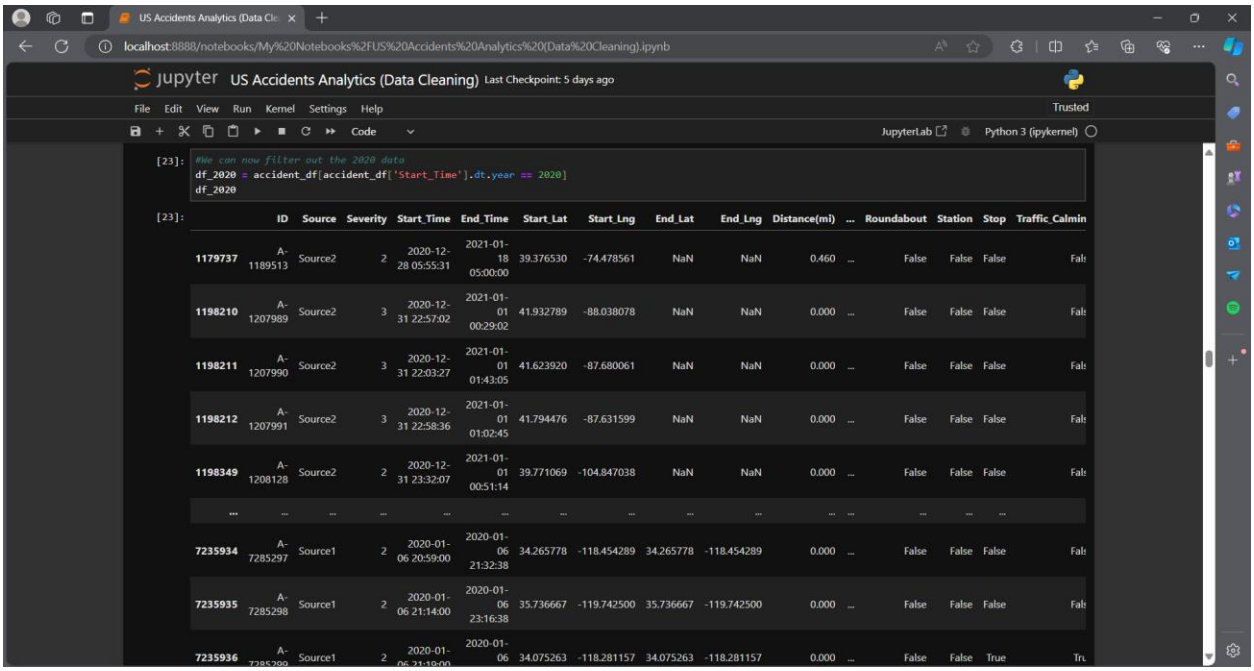


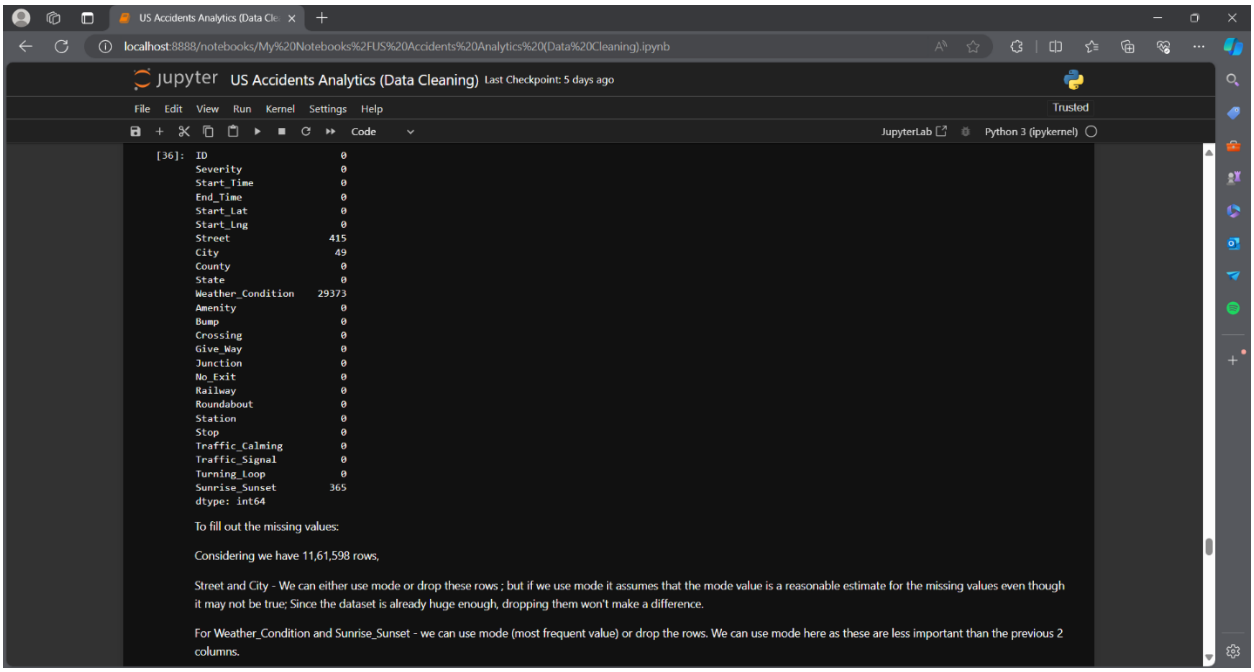
Data Analytics:

1. **US Accidents Analytics Link and Screenshots**

Data Cleaning in Jupyter Notebook





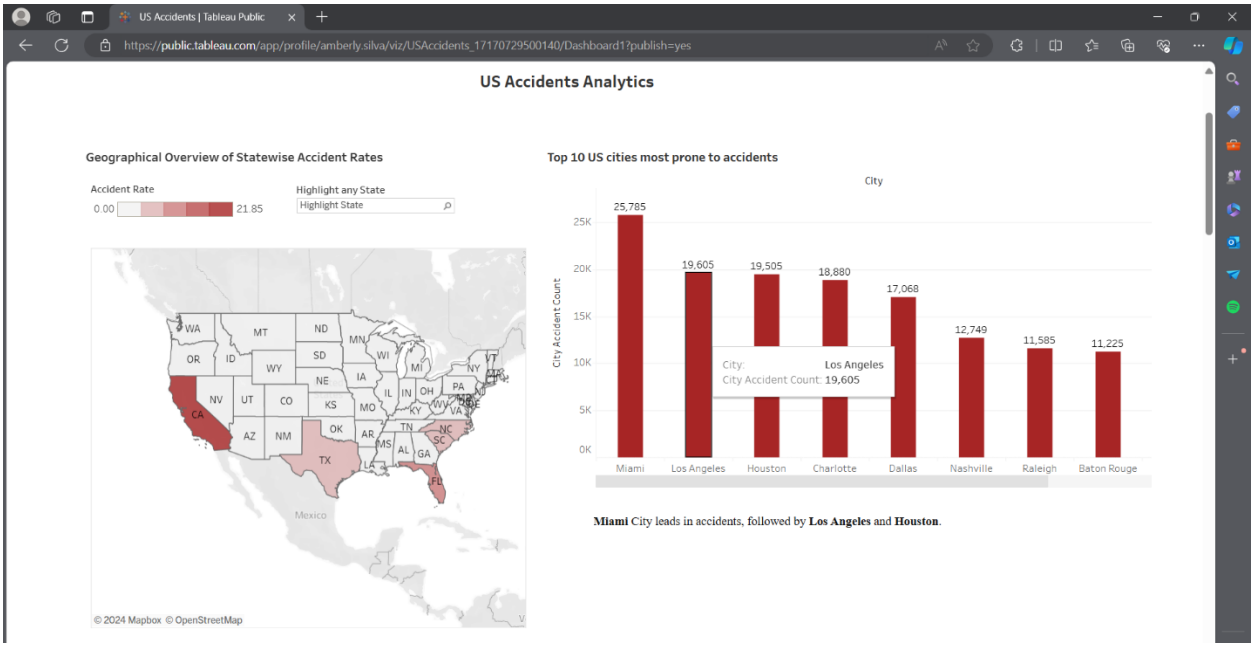


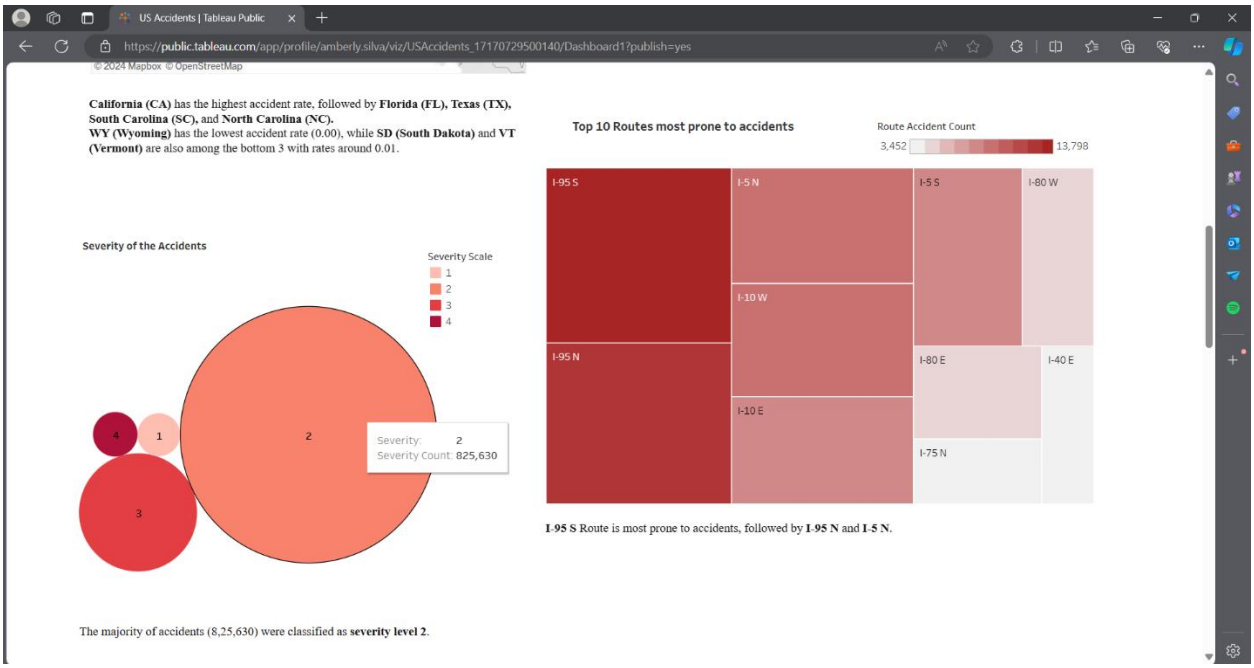
Interactive Data Visualization in Tableau

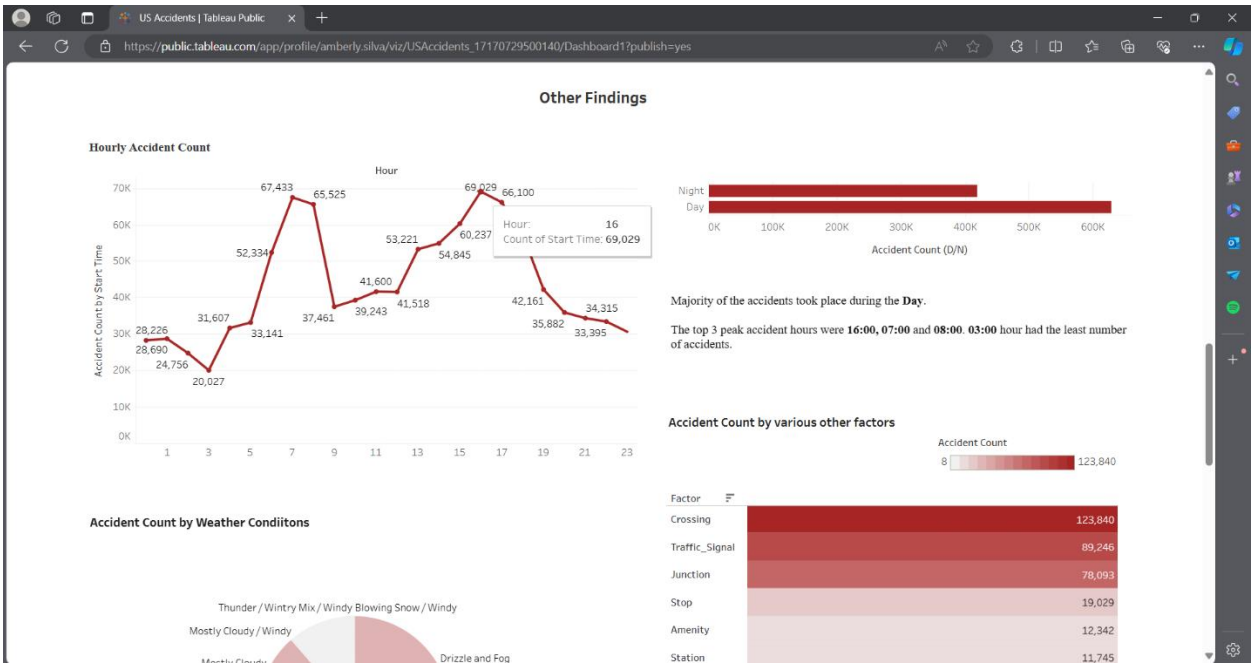
Tableau Public Link:
https://public.tableau.com/app/profile/amberly.silva/viz/USAccidents_17170729500140/Dashboard1?publish=yes

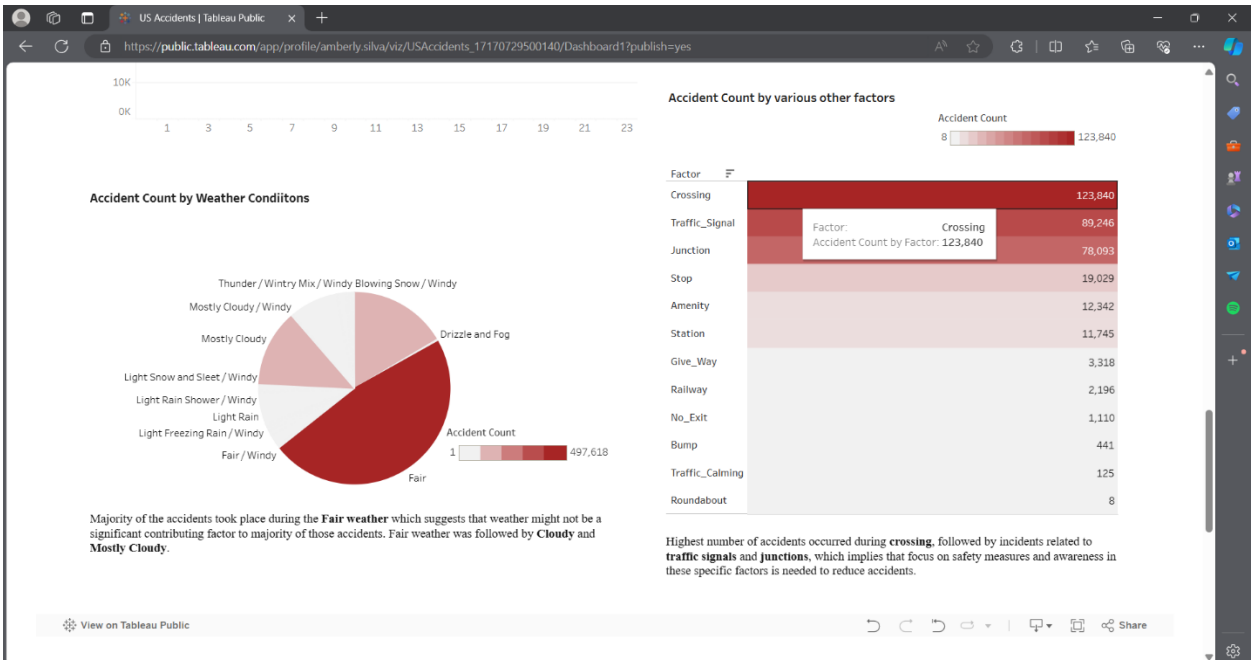
Shortened link for the same: https://bit.ly/AmberlySilva-US-Accidents-Analytics

Screenshots of the Dashboard






US Accidents | Tableau Public
https://public.tableau.com/app/profile/amberly.silva/viz/USAccidents_17170729500140/Dashboard1?publish=yes
Other Findings
Hourly Accident Count
Hour
Accident Count by Start Time
Hour: 16
Count of Start Time: 69,029
Night
Day
Accident Count (D/N)
Majority of the accidents took place during the Day.
The top 3 peak accident hours were 16:00, 07:00 and 08:00. 03:00 hour had the least number of accidents.
Accident Count by various other factors
Accident Count
8
123,840
Factor
Crossing 123,840
Traffic_Signal 89,246
Junction 78,093
Stop 19,029
Amenity 12,342
Station 11,745
Accident Count by Weather Condiitons
Thunder / Wintry Mix / Windy
Blowing Snow / Windy
Mostly Cloudy / Windy
Drizzle and Fog


US Accidents | Tableau Public
https://public.tableau.com/app/profile/amberly.silva/viz/USAccidents_17170729500140/Dashboard1?publish=yes
Accident Count by various other factors
Accident Count
8
123,840
Factor
Crossing 123,840
Traffic_Signal 89,246
Junction 78,093
Stop 19,029
Amenity 12,342
Station 11,745
Give_Way 3,318
Railway 2,196
No_Exit 1,110
Bump 441
Traffic_Calming 125
Roundabout 8
Factor: Crossing
Accident Count by Factor: 123,840
Accident Count by Weather Condiitons
Thunder / Wintry Mix / Windy
Blowing Snow / Windy
Mostly Cloudy / Windy
Drizzle and Fog
Mostly Cloudy
Light Snow and Sleet / Windy
Light Rain Shower / Windy
Light Rain
Light Freezing Rain / Windy
Fair / Windy
Fair
Accident Count
1
497,618
Majority of the accidents took place during the Fair weather which suggests that weather might not be a significant contributing factor to majority of those accidents. Fair weather was followed by Cloudy and Mostly Cloudy.
Highest number of accidents occurred during crossing, followed by incidents related to traffic signals and junctions, which implies that focus on safety measures and awareness in these specific factors is needed to reduce accidents.
View on Tableau Public
Share

APPENDIX II: PHOTOS WHILE AT WORK