MADHUBEN AND BHANUBHAI PATEL INSTITUTE OF TECHNOLOGY
(A CONSTITUTE OF CVM UNIVERSITY)
NEW VALLABH VIDYANAGAR

DECLARATION

We hereby declare that the Internship report submitted along with the summer training entitled **Internship** submitted in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering to CVM University, Anand, is a bonafide record of original project work carried out by me at Tech-Elecon Pvt Ltd. under the supervision of Dy. Gen manager Mr. Satyam Raval and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student Sign of Student

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my Dy. Gen manager Mr. Satyam Raval for continuously guiding me at the company and answering all my doubts with patience This project work appears in the current form due to the assistance, guidance, and support of several people. It is my pleasure to offer sincere thanks to all of them. I take immense pleasure in thanking our mentor at Tech Elecon Pvt Ltd for helping me out in all projects related work.

I also thank my parents, friends and all the colleagues for their precious support and encouragement which they had provided in completion of my work. In addition to that, I would also like to mention the company personals who gave me the permission to use and experience the valuable resources required for the internship.

Thus, in conclusion to the above said, I once again thank the staff members of **Tech Elecon Pvt. Ltd.** for their valuable support throughout the development of the project.

Your Sincerely,
Studentname

ABSTRACT

The Central Transport System (CTS) is a comprehensive web-based platform designed to streamline and optimize transportation management within organizations. In today's dynamic business environment, efficient transportation plays a crucial role in ensuring smooth operations and timely delivery of goods and services. However, traditional methods of managing transportation needs, such as manual processes and disparate systems, often lead to inefficiencies, delays, and errors. CTS addresses these challenges by providing a centralized solution that automates key aspects of transportation management, including request submission, vehicle allocation, scheduling, and tracking. Through its user-friendly interface, employees can easily submit transportation requests, while administrators gain real-time visibility into vehicle availability and usage. The system also offers robust reporting and analytics capabilities, enabling organizations to monitor transportation trends, optimize resource allocation, and make informed decisions. With features such as communication and notifications, scalability, and integration capabilities, CTS enhances efficiency, transparency, and accountability in transportation management, ultimately contributing to improved operational performance and Employee satisfaction.

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1 OVERVIEW OF COMPANY

Tech Elecon Pvt Ltd is a reputable software company that has been in the industry for several years. The company offers a range of products and services to its clients and has a robust capacity for delivering quality software services.The company has several departments to ensure the smooth operation of the company and follows a specific sequence of operations for manufacturing the end product. Overall, Tech Elecon Pvt Ltd is a reliable software company that provides high-quality software services to its clients.

1.1 HISTORY

- Tech Elecon Private Limited is a Private incorporated on 30 May 2012.
- It is classified as Non-govt company and is registered at Registrar of Companies,

Ahmedabad.

- It is involved in Other computer related activities [for example maintenance of websites of other firms/ creation of multimedia presentations for other firms etc.
- Directors of Tech Elecon Private Limited are Ravinkumar Shah, Prayasvin Patel, Pradip Manubhai Patel
- Tech Elecon Pvt. Ltd. was established in 2012. Initially, the company was a small software development firm, but over the years, it has grown significantly.

The company started with only a few employees, but today, it has over 250 employees in various departments, including software, hardware, ERP, networking and more.

1.2 DIFFERENT PRODUCTS:

Tech Elecon Pvt. Ltd. offers a range of products and services to its clients. The company provides work in various technologies such as React JS, Node JS, Java Script, TML/CSS, ASP .NET, Python, Flutter, and more. Additionally, the company offers services such as Web Supplier, Order

Tracking, Product Configurator, EON/EOS Configurator, Calculators & Converters, Supplier/Customer GST Information System, and more.

1.3 CAPACITY OF COMPANY:

Tech Elecon Pvt. Ltd. has a robust capacity for delivering quality software services to its clients. The company has a large team of experienced software professionals who are skilled in various technologies. The company has state of-the-art infrastructure, including servers, workstations, and other essential software and hardware.

1.4 SEQUENCE OF OPERATION FOR MANUFACTURING OF END PRODUCT:

Tech Elecon Pvt. Ltd. follows a specific sequence of operations for manufacturing the end product. The sequence of operation includes the following steps:

- Client requirement understanding: The first step in the sequence of operations is to understand the client's requirements. The company's software development team works closely with the client to understand their specific needs.
- Planning: After understanding the client's requirements, the software development team plans the project. This includes defining the project scope, setting milestones, and determining the resources required.
- Development: The next step in the sequence of operations is the development phase. During this phase, the software development team develops the software according to the client's requirements. Review and QA: Once the software is developed, it goes through a review and quality assurance process. The quality assurance team checks the software for bugs, defects, and other issues.
- Release or Deployment: Once the software is tested and approved, it is released or deployed to the client's environment.
- Maintenance: Finally, the company provides maintenance and support services to ensure the software continues to work correctly

2 OVERVIEW OF DIFFERENT DEPARTMENT

2.1 DIFFERENT DEPARTMENT

ERP: The ERP (Enterprise Resource Planning) department is responsible for implementing, maintaining, and upgrading the ERP system in an organization. The ERP system integrates various business processes such as accounting, human resources, procurement, inventory, and customer relationship management into a single system to increase efficiency and streamline operations. The ERP department works closely with other departments to ensure the system meets the organization's needs and provides support and training to end-users.

Software: This department is responsible for maintaining the company's IT infrastructure and supporting employees. They develop web applications using technologies such as .Net and ReactJS and provide technical assistance to clients and employees to resolve any issues they may encounter. Their focus is to ensure smooth functioning of the IT systems and provide reliable technical support to the organization.

Networking and Hardware: The hardware department is responsible for the physical components of a computer system, including design, construction, maintenance, troubleshooting, and repair, while the network department is responsible for the setup, configuration, and maintenance of computer networks, including hardware and software components, protocols, addressing, security, monitoring, and troubleshooting. Elecon have long-standing relationships with all the major OEMs in information networking, including Juniper, Cisco, HP, Dell and Brocade. They start with an audit of their existing networking infrastructure, prepare reports and based on these reports; they define which OME suits the client requirements and according to that their team work

2.2 SEQUENCE OF OPERATION FOR MANUFACTURING OF END PRODUCT

Main end product of our company is mostly the software. Software is a very different thing other than industry's End products. Its process is very different. Themain flow of software development is as per below:

1. **Client requirement understanding:** First step to build something is to know what to build. Specially in the case of software it is very important to understand the client requirement completely as if the requirement changes, then it will create huge problems in later part of the development. Often a requirement document is created which is called a client requirement document to make things clearer.

2. **Planning:** Second step to build something is to know how to build. In software development, we need to decide the entire flow of the process like which technology stack will be used? Which type of architecture will be used? Etc.

3. **Development:** After sufficient planning comes the development part. In this part actual software is built. Or at least part of the software is built in methods like agile delivery methods.

4. **Review and QA:** Internal review and QA is done to ensure the quality of the final product as in software in this case. It also helps to identify the bugs before releasing the software.

5. **Release or Deployment:** In this phase the software is delivered to the client either the direct code or hosted service.

6. **Maintenance:** This part comes in picture after the final delivery of the software. This phase includes tasks such as making sure the service is always running, bug fixes etc.

3 INTRODUCTION TO INTERNSHIP AND PROJECT

3.1 INTERNSHIP/PROJECT SUMMARY

I have joined Tech Elecon Pvt. Ltd. as Junior Software Developer and currently working as an Intern. Goal of this Internship/Training is to get grip on Fundamental Technology for respectivedepartment and understanding how we approach it. And for that I have worked on an Internal Project that is in level of Real-Time industry project.

Project Title:Central Transport System

The Central Transport System (CTS) is a comprehensive solution designed to streamline and optimize transportation management within an organization. It facilitates the efficient handling of transportation requests and vehicle allocation while ensuring compliance with regulations and policies. With features such as user authentication, reporting, and integration capabilities, CTS offers a user-friendly interface and enhances overall efficiency, cost-effectiveness, and user satisfaction. Its scope encompasses various aspects, including request management, vehicle scheduling, route optimization, user interface, compliance, and scalability. Overall, CTS is a powerful tool that simplifies transportation management, improves resource utilization, and meets the transportation needs of organizations effectively.

3.2 PURPOSE

The purpose of the Central Transport System (CTS) is to provide organizations with an efficient, centralized platform for managing their transportation needs. CTS aims to streamline transportation request handling, vehicle allocation, and thereby optimizing resource utilization and minimizing costs. By automating manual tasks and providing real-time insights into transportation operations, CTS enhances overall efficiency and user satisfaction. Additionally, CTS ensures compliance with regulations and policies related to transportation, safety, and data privacy. Overall, the purpose of CTS is to simplify transportation management, improve productivity, and meet the transportation requirements of organizations effectively.

3.3 SCOPE

The scope of the Central Transport System (CTS) includes facilitating the management of transportation requests and vehicle allocation within an organization. CTS streamlines the process of submitting and handling transportation requests from employees or departments, ensuring efficient allocation of vehicles based on availability and requirements. It provides user authentication and access control features for secure access to transportation-related functionalities. Additionally, CTS offers reporting and analytics capabilities to track transportation usage and vehicle utilization, as well as integration with external systems to exchange data and streamline processes. The system also focuses on compliance with regulations and policies related to transportation and data privacy, while ensuring scalability and customization to adapt to organizational needs. Overall, CTS aims to simplify transportation management, improve resource utilization, and meet the transportation requirements of organizations effectively.

3.4 TIMELINE OF INTERNSHIP

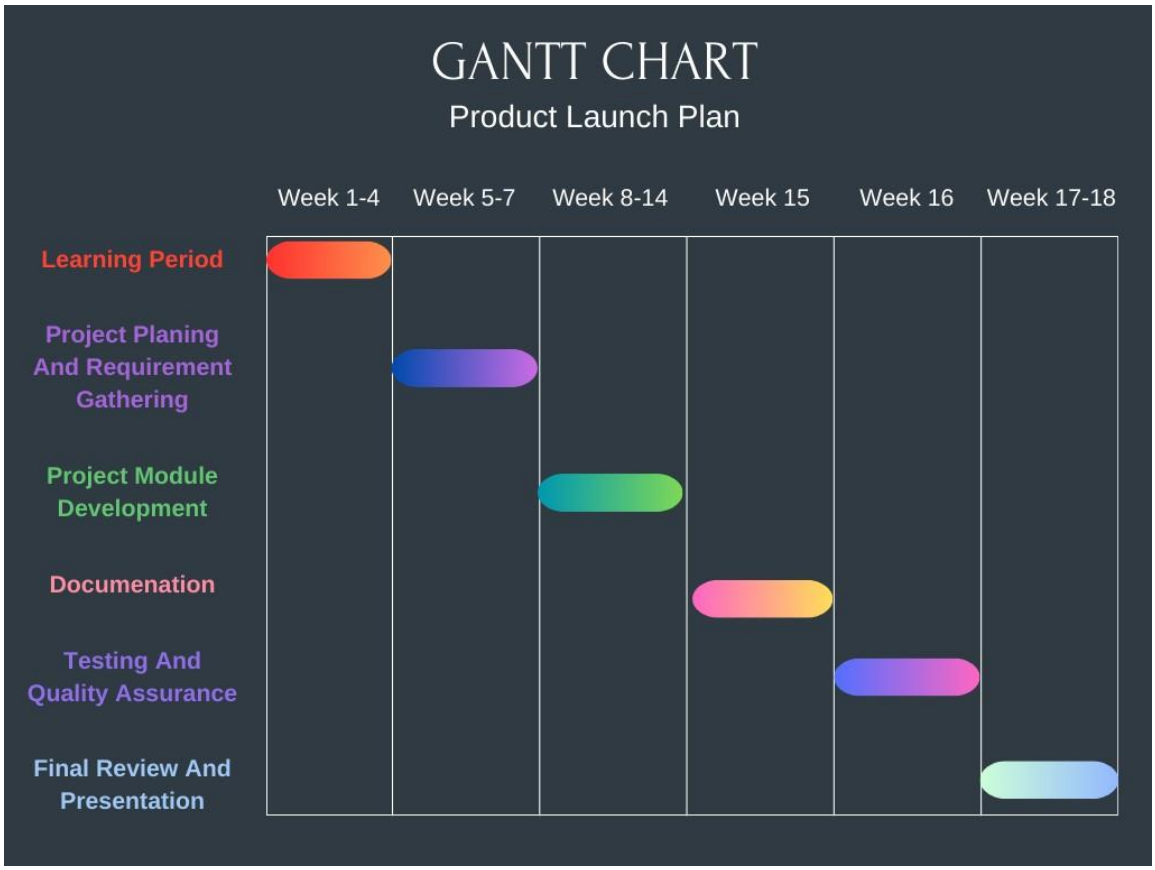

Figure 3-1:TimeLine Of Internship

4 SYSTEM ANAYLSIS

4.1 STUDY OF CURRENT SYSTEM

Currently, the Central Transport System (CTS) is managed primarily through Excel sheets. Transportation requests, vehicle allocations, and related data are manually recorded and tracked using Excel templates. Employees submit requests through various channels, and administrators update the sheets accordingly to assign vehicles and manage scheduling. However, this manual process is time-consuming, prone to errors, and lacks real-time visibility and efficient reporting capabilities. Upgrading to a dedicated transportation management system would streamline operations, automate processes, improve data accuracy, and enhance overall efficiency in managing transportation needs within the organization

4.2 PROPOSED SYSTEM

The proposed Central Transport System (CTS) is a comprehensive web-based platform designed to streamline transportation management within the organization. With a user-friendly interface, employees can effortlessly submit transportation requests or request garbage truck vehicles for departmental cleaning tasks. The system automates vehicle allocation and scheduling, ensuring optimal resource utilization, while providing real-time availability checking and seamless communication between employees and administrators. Robust reporting and analytics tools empower administrators to track transportation usage, analyze trends, and make informed decisions, all while maintaining compliance with industry standards and ensuring data security. Overall, the proposed CTS aims to enhance efficiency, transparency, and user experience in managing transportation and vehicle allocation processes.

4.3 PROBLEM AND WEAKNESSES OF CURRENT SYSTEM

The current system's reliance on manual processes and Excel sheets for managing transportation needs poses significant challenges and limitations. These include time-consuming data entry, limited visibility into transportation operations, potential for data inconsistencies, and lack of automation for tasks such as vehicle allocation and scheduling. Additionally, the current system's poor reporting capabilities and suboptimal user

experience contribute to inefficiencies and frustrations among employees and administrators. Moreover, the risk of data loss or corruption due to technical issues further undermines the reliability of transportation records. Addressing these weaknesses requires a modern, automated, and user-friendly solution that streamlines transportation management processes, enhances visibility and control, and improves overall efficiency and reliability.

4.4 SYSTEM FEASIBILITY

1. **Does the system contribute to the overall objectives of the organization?**

   Yes, the proposed System contributes to the overall objectives of the organization, as it will streamline the management process and make it more efficient.

2. **Can the system be implemented using the current technology?**

   Yes, the system can be implemented using current technology and within the given cost and schedule constraints.

4.5 FEATURES OF SYSTEM

- User Authentication: Secure login functionality to authenticate users and control access to system features based on user roles and permissions.
- Transportation Request Management: A user-friendly interface for employees to submit transportation requests, specifying details such as destination, date, time, and purpose.
- Garbage Truck Request: Capability for employees to request garbage truck services for departmental cleaning tasks, including specifying the area and required date/time.
- Vehicle Allocation and Scheduling: Automated allocation of vehicles based on availability, with scheduling functionality to ensure efficient use of resources.
- Real-time Availability Checking: Integration with vehicle tracking systems to provide real-time visibility into vehicle availability and location.
- Administrator Dashboard: A centralized dashboard for administrators to review and manage transportation requests, allocate vehicles, and track utilization.

- Communication and Notifications: Seamless communication between employees and administrators through automated notifications for request status updates and changes.
- Reporting and Analytics: Comprehensive reporting and analytics tools for administrators to analyze transportation data, track usage, and identify trends for optimization.
- Scalability and Customization: Flexible architecture that can scale with organizational needs and be customized to adapt to specific workflows and requirements.
- Compliance and Security: Adherence to industry standards and regulations, ensuring data privacy, security, and compliance with transportation and safety regulations.
- Mobile Accessibility: Mobile-friendly interface or dedicated mobile app for employees and administrators to access the system and submit/request transportation services on the go.
- Integration Capabilities: Ability to integrate with other organizational systems such as HR systems, scheduling software, or fleet management systems to exchange data and streamline processes.

5 SYSTEM DESIGN

5.1 E-R DIAGRAM

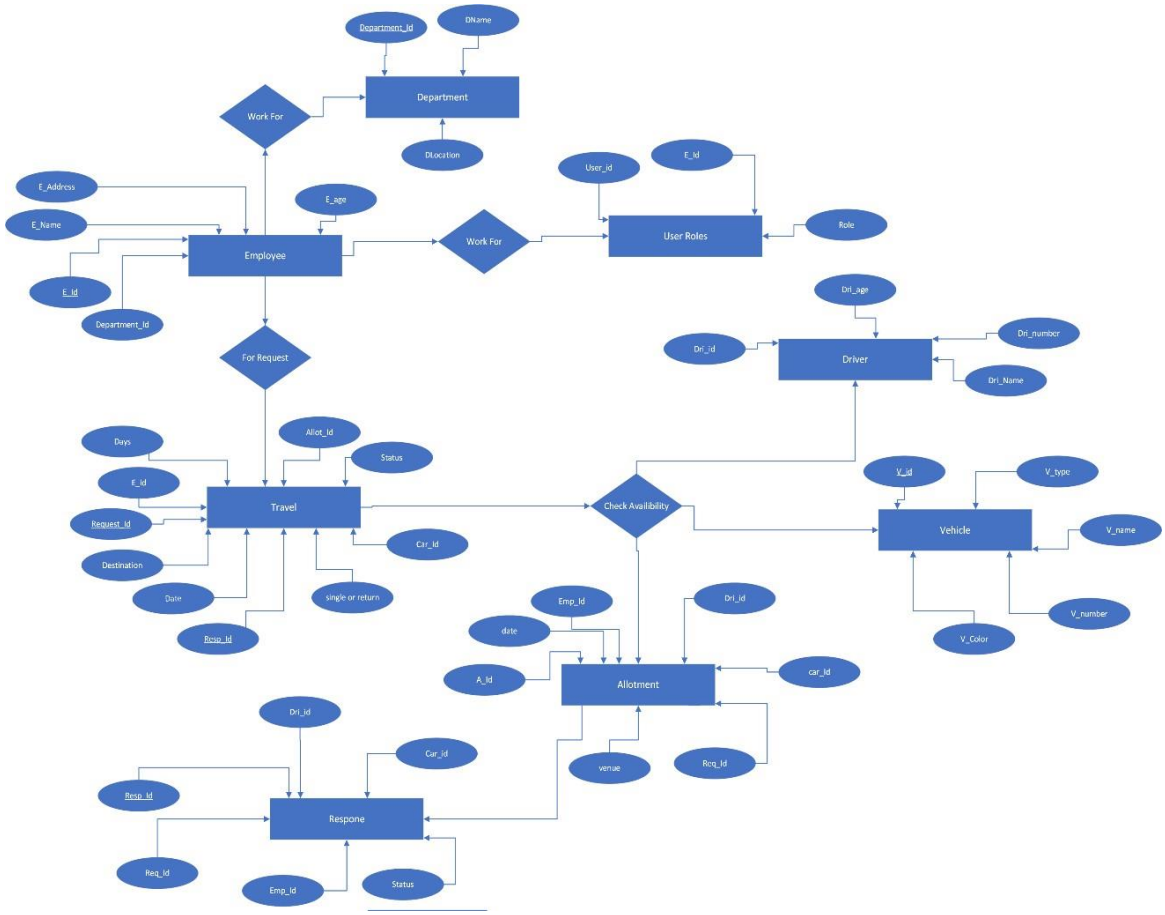

Figure 5-1 : E-R Diagram

5.2 DATA FLOW DIAGRAM

Level:0

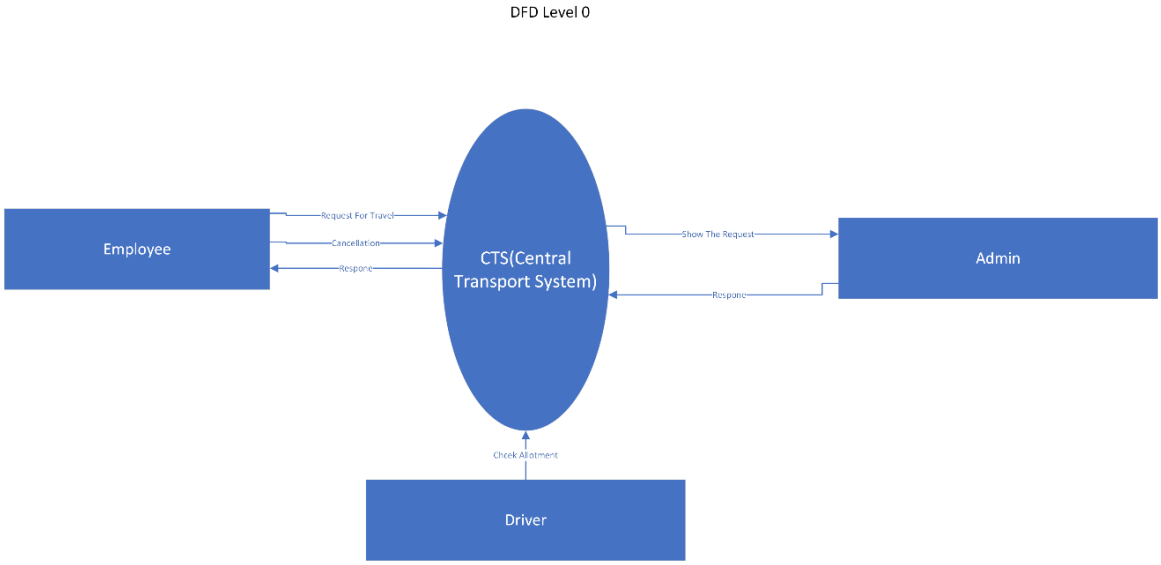

Figure 5-2 : DFD Level 0

Level:1

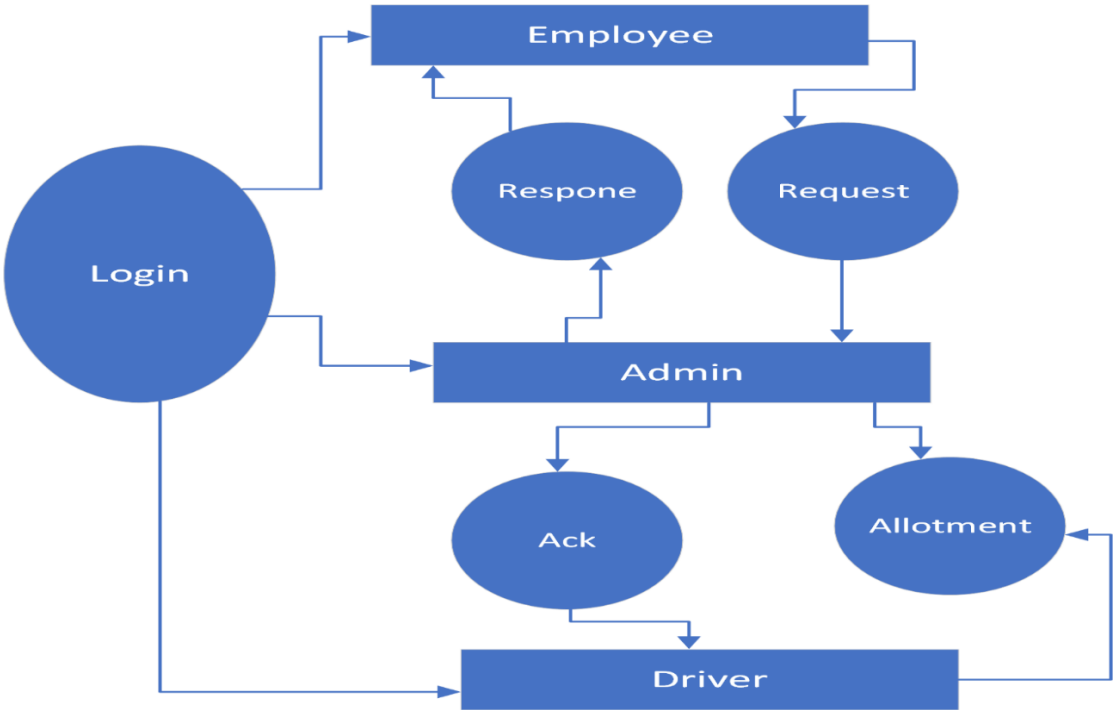

Figure 5-3 : DFD Level 1

Level:2

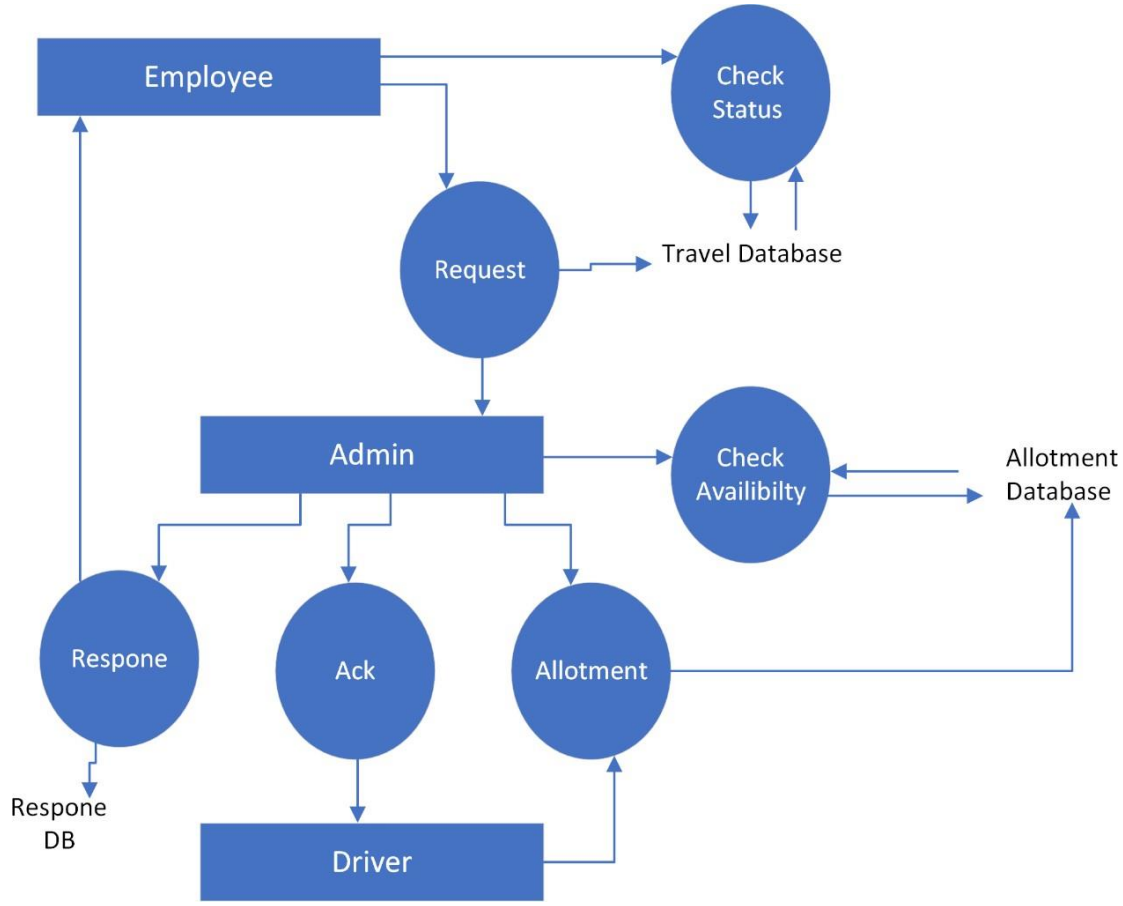

Figure 5-4 : DFD Level 2

5.3 USE-CASE

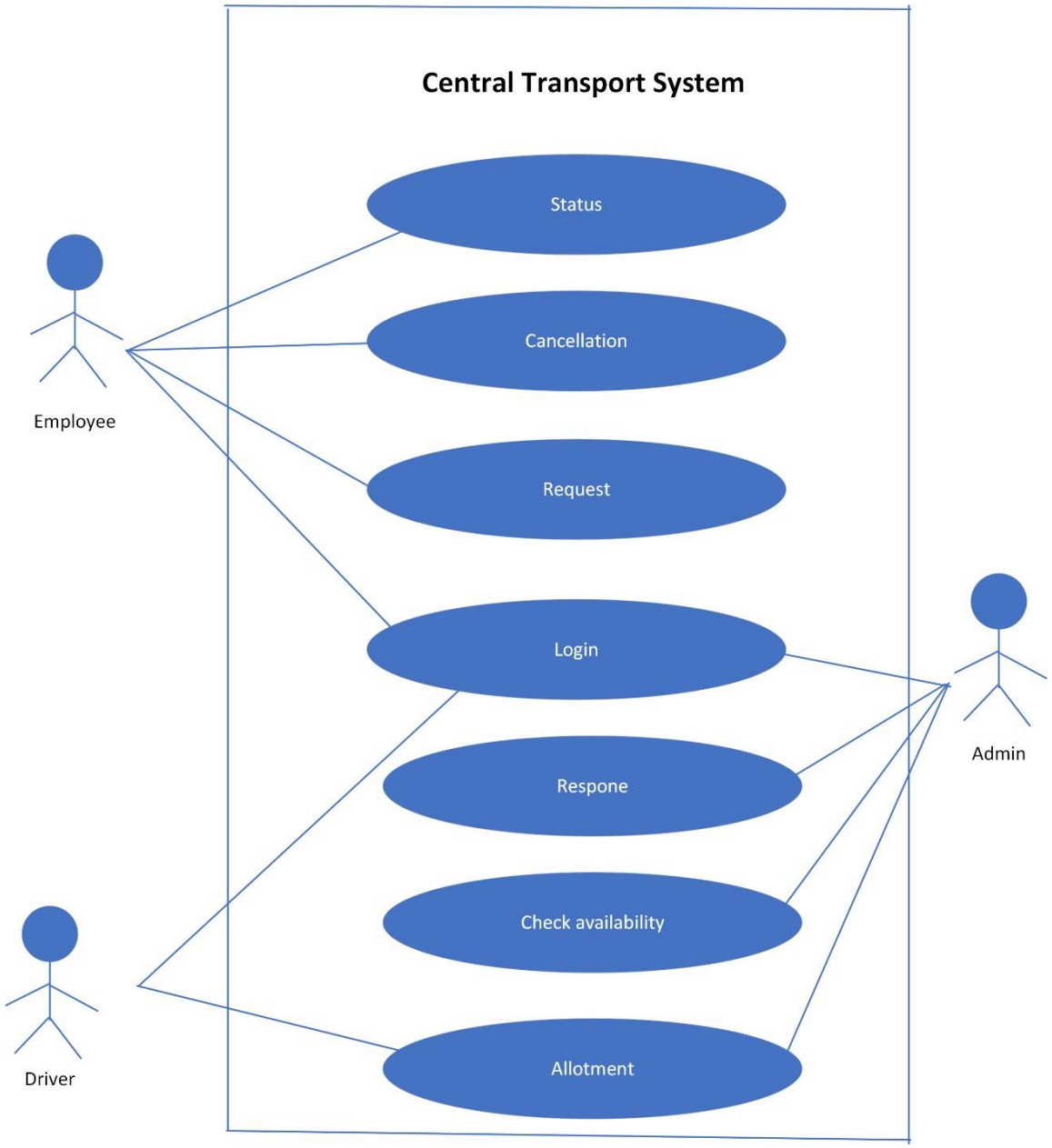

Figure 5-5 :Use Case

5.4 ACTIVITY DIAGRAM

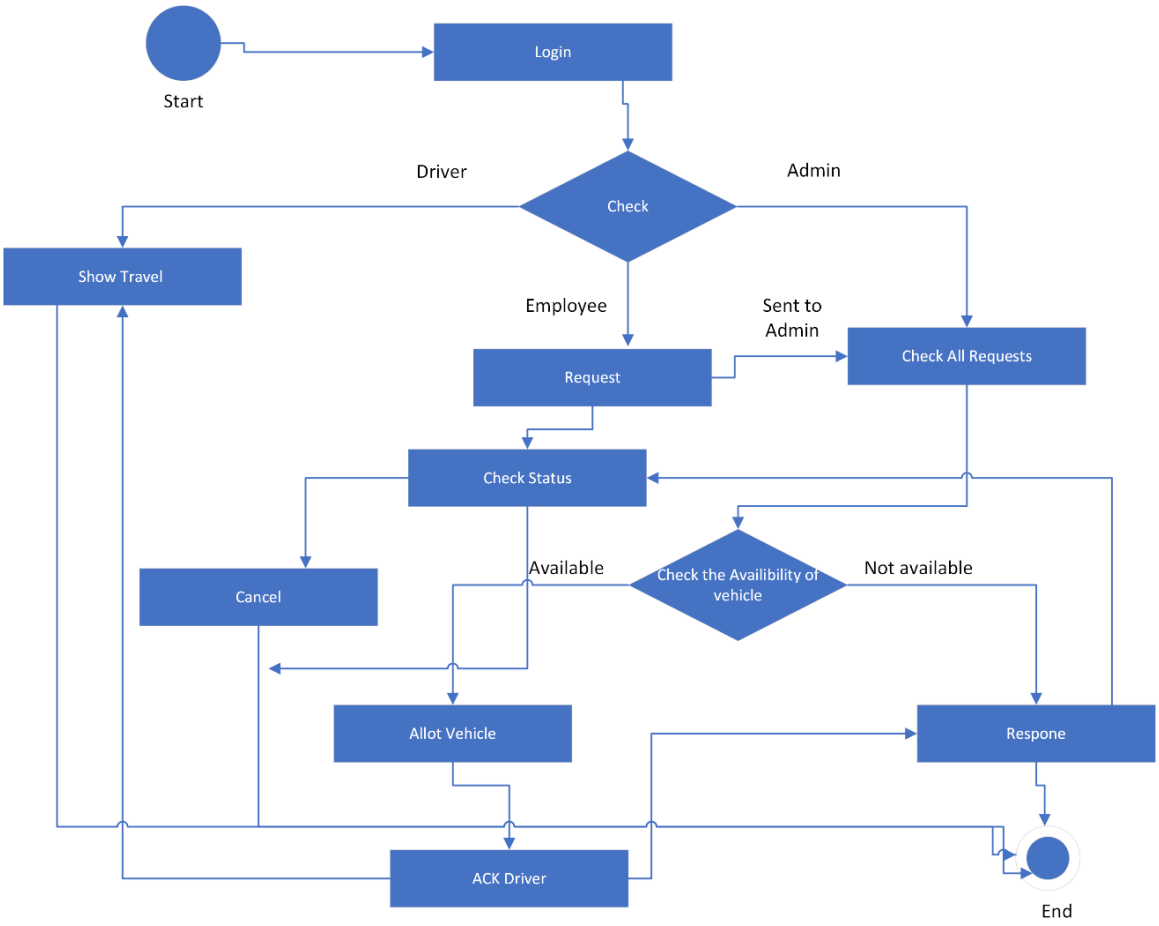

Figure 5-6 : Use Case Diagram

6 IMPLEMENTATION

1) Login Page

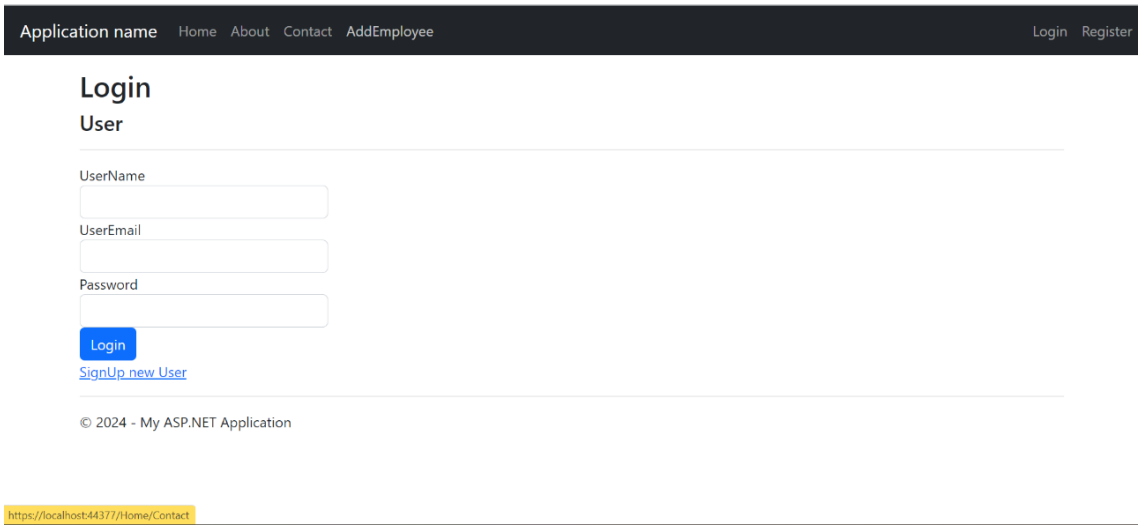

Figure 6-1 :Login Page

2) Adding Employee

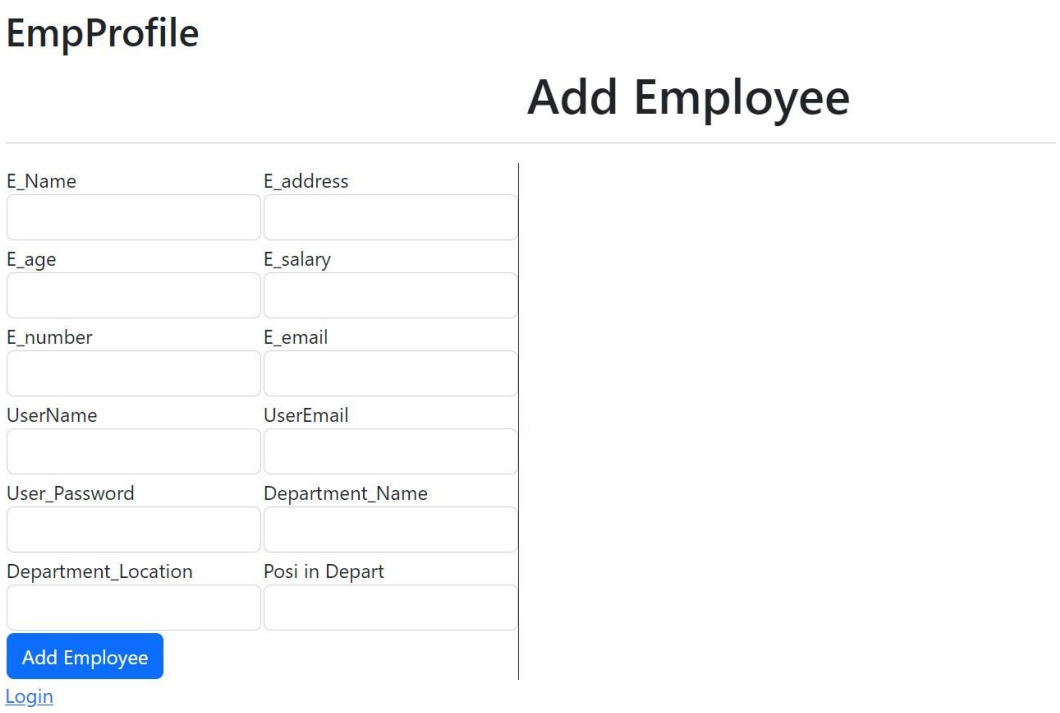

Figure 6-2 :Add Employee

3) Database

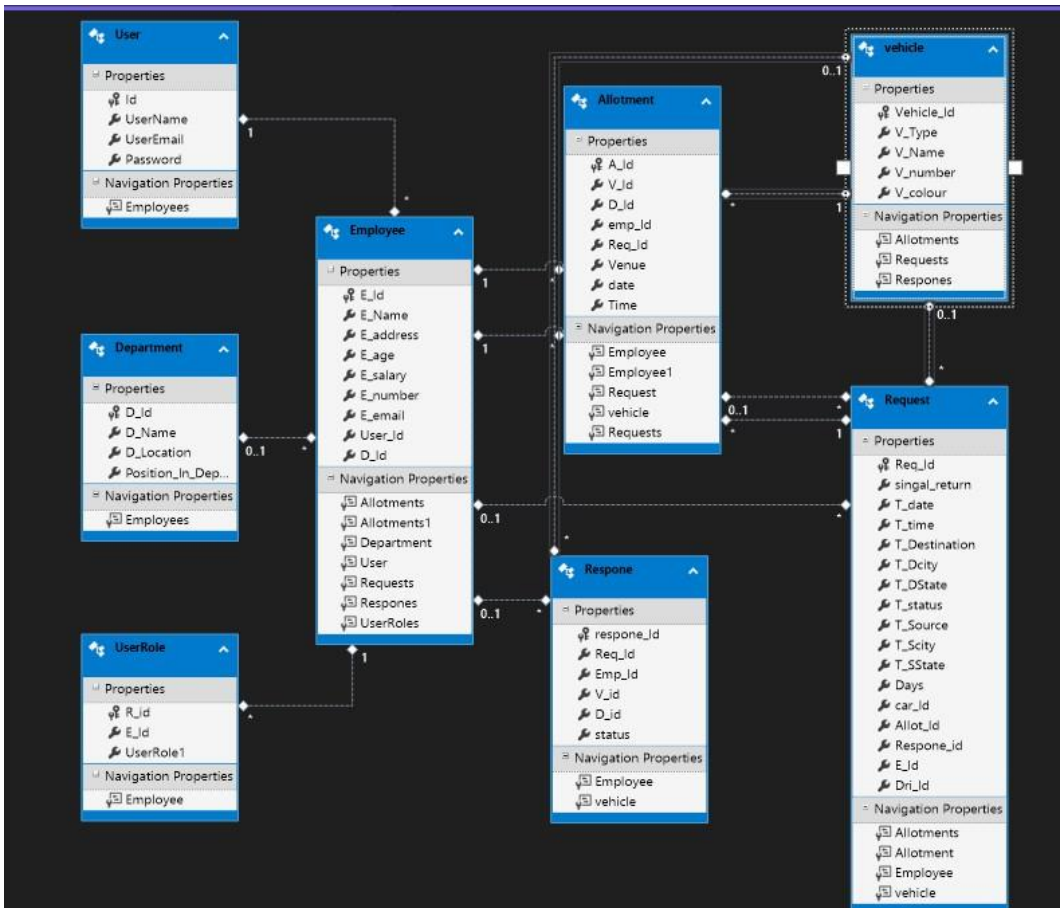

Figure 6-3 :Database

7 TESTING

7.1 TESTING STRATEGIES

- **Unit Testing:** This software testing basic approach is followed by the programmer to test the unit of the program. It helps developers to know whether the individual unit of the code is working properly or not.
- **Integration testing**: It focuses on the construction and design of the software. You need to see if the integrated units are working without errors or not.
- **System testing:** In this method, your software is compiled as a whole and then tested as a whole. This testing strategy checks the functionality, security, portability, amongst others.

7.2 Unit Testing

1. **Employee module:**
    a. Create a new employee record.
    b. Update existing employee information.
    c. Delete employee information.
    d. Set input restrictions (e.g. required fields, file types).
2. **Designation module:**
    a. Add a new designation.
    b. Modify existing designation details.
    c. Delete designation records.
3. **Authentication module:**
    a. Prove successful access using valid evidence.
    b. Test for failed login attempt using invalid credentials.

7.3 Integration Testing

1. **Employee and Designation Interaction:** Validate the seamless integration of user authentication.
2. **User Authentication Integration:** Seamless integration of authenticated user authentication.

7.4 System Testing

1. **Crud Operation:** Ability to test CRUD operations end-to-end for operators and specified models.
2. **Authorization:** Ensure full security and authorization mechanisms.

8 CONCLUSION

In conclusion, the Central Transport System (CTS) offers a comprehensive solution for managing transportation needs within the organization. By leveraging modern technology and automation, CTS streamlines the process of requesting transportation services, allocating vehicles, and tracking usage. The system provides a user-friendly interface for employees to submit requests for travel or garbage truck services, while administrators benefit from real-time visibility into vehicle availability and automated scheduling capabilities. With features such as communication and notifications, reporting and analytics, scalability and customization, CTS enhances efficiency, transparency, and accountability in transportation management. Overall, CTS represents a significant advancement over manual and inefficient transportation management systems, offering a streamlined and integrated solution to meet the diverse transportation needs of the organization

9 REFERENCES

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