UMS SHIPMENT SERVICE

Final Year Project

Session 2018-2022

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Department of Computer science

Faculty of Computer Science & Information Technology

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Type (Nature of project)	[✓] **D**evelopment [ ] **R**esearch [ ] **R**&**D**
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*The candidates confirm that the work submitted is their own and appropriate credit has been given where reference has been made to work of others

Plagiarism Free Certificate

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Designation: Lecturer

Signature: _____

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UMS SHIPMENT SERVICE

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
	1.0		<Original Draft>	
			<Changes Based on Feedback from Supervisor>	
			<Changes Based on Feedback From Faculty>	
			<Added Project Plan>	
			<Changes Based on Feedback from Supervisor>	

APPROVAL

PROJECT SUPERVISOR

Comments: _____

_____

Name:_____

Date:_____ Signature:_____

PROJECT MANAGER

Comments: _____

_____

Date:_____ Signature:_____

HEAD OF THE DEPARTMENT

Comments: _____

_____

Date:_____ Signature:_____

Dedication

We dedicated this project so all those humble beings who have aided us in any way to become what we are today. Whose scarifies seeded or stress; especially our parents who have felt our pain beyond us and showered us win never ending prayers and support. We deem them as divine scree of inspiration.

Acknowledgements

All the praise to all mighty ALLAH. For bestowing us with the courage. Knowledge. Health and wisdom to carry out this project we are greatly indebted to our parents. Without their endless financial, moral support. Patience and prayers the wry idea of this project was impossible. We would like to pay our humble gratitude to our project supervisor Mr.Mohsin Riaz. His encouragement was the main sauce and strength to stimulate us to complete the project we are also grateful to all faculty members of SUPERIOR UNIVERSITY for the facilities provided.

Executive Summary

The **UMS SHIPMENT SERVICE** Application aims at helping logistic business to find the most suitable tracking shipments, make real time progress and extend them according to requirements, if required. It enables users to track the shipments, view real time progress and manage deliveries. Users access location based information and update through email.

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Chapter 1

Introduction

Chapter 1: Introduction

The **UMS SHIPMENT SERVICE** enable users to track the shipment when user select the destination price display according to distance and admin assign the shipper for deliver the product to door step.

1.1. Motivations and Challenges

Our challenge is to become the premier auction shipping service. This will be achieved by offering reasonable prices, fast and environmentally sound service, and maintaining 100% customer satisfaction.

1.2. Goals and Objectives

- Become the premier auction shipping service.
- Reach profitability within the first two years.
- Achieve market penetration of 15% by year three.
- Provide a market-needed service.
- Be as convenient as possible.
- Employ strict financial controls

1.3. Literature Review/Existing Solutions

Review of literature Activity Based Costing method of costing the organization can identify unprofitable warehouse practices, other cost measures in logistics. If Logistics implement cost based on Activity Based Costing, the firm can improve and eliminate unprofitable situations, improve and implement new facilities with much broader focus on future. To any organization cost reduction is the ultimate method to get a much wider profit. As with the help of questionnaires and through formal interviews with officials not many organizations have this generally. All organizations will be implementing the cost method within the near future.

1.4. Proposed Solution

UMS SHIPMENT SERVICE is shipment management application usually develop with secure data structure and real time shipment tracking. In this software Users track the

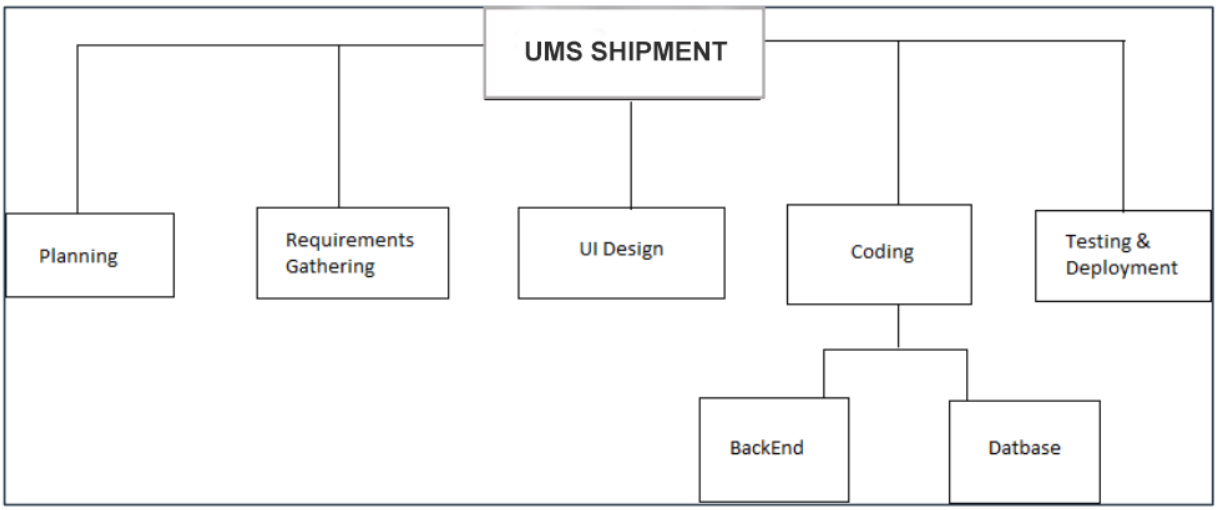
shipment through shipment tracking id and admin assign the shipments to shipper for deliver to the door step at the right time.

1.5. Project Plan

[The project plan of our project:

1. Dashboard design 30 days
2. Requirement gathering 30 days
3. UI design 60 days
4. Coding 180 days
5. Testing and implementation 30 days

1.5.1. Work Breakdown Structure

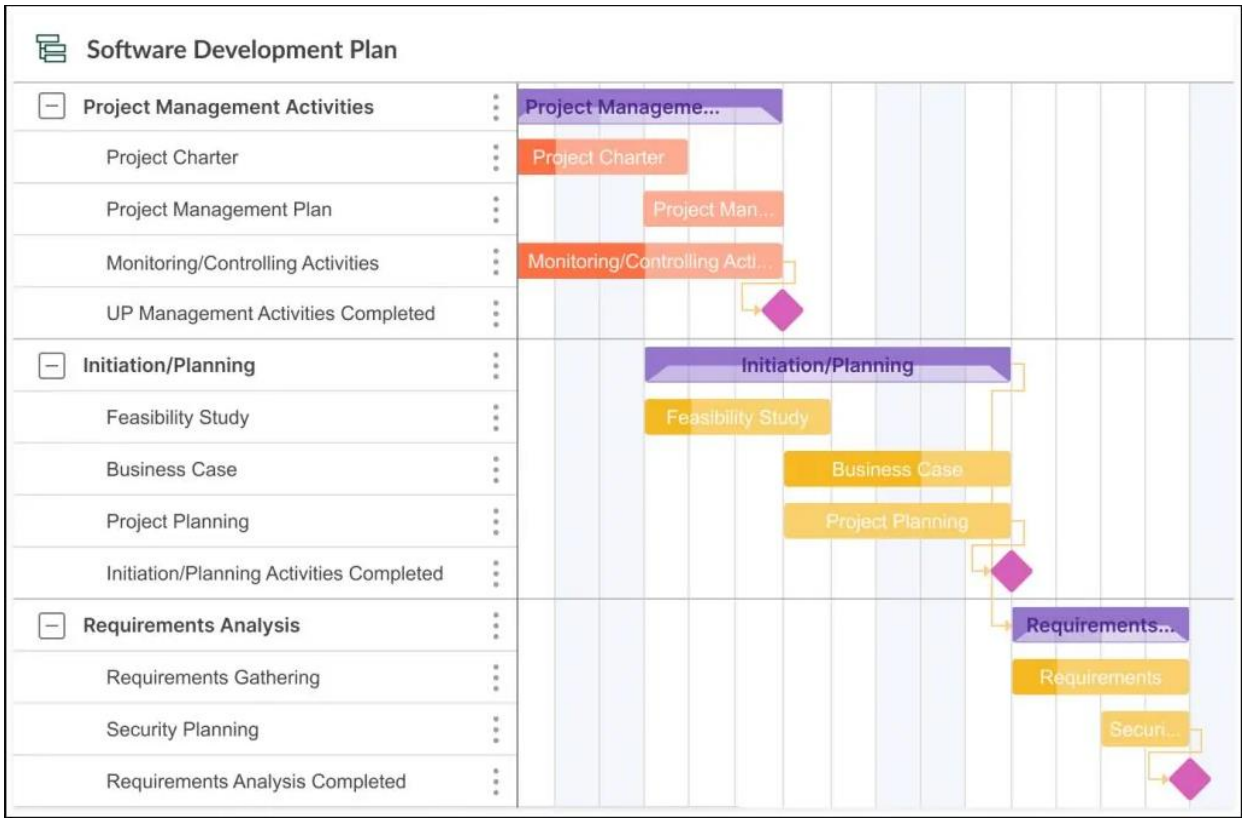


1.5.2. Roles & Responsibility Matrix

The purpose of roles & responsibility matrix is to identify who will do what.

WBS #	WBS Deliverable	Activity #	Activity to Complete the Deliverable	Duration (# of Days)	Responsible Team Member(s) & Role(s)
1	Planning	1		5 days	All members
2	Requirement Gathering	2		25 days	All members
3	UI Design	3		60 days	All members
4	Coding	4		160 days	All members
5	Testing and Implementation	5		30	All members

1.5.3. Gantt chart



1.6. Report Outline

This Document cover all aspects of SHIPMENT SERVICE which is UMS based web system.

- Introduction
- Goals
- Roles & Responsibilities

Chapter 2
Software Requirement Specification

Chapter 2: Software Requirement Specifications

2.1. Introduction

2.1.1. Purpose

This document aims to give a brief description about the UMS SHIPING SERVICE **Project. With the help of this document the needs of the company and the solution that will be provided to that needs shall be clearly presented. In other words this document will provide a basis for validation and verification.**

2.1.2. Document Conventions

SRS: **Software Requirements Specification**

JTech: **the Company that we are developing the HR SYSTEM for**.

Admin: **Administrator**

2.1.3. Intended Audience and Reading Suggestions

While the software requirement specification (SRS) document is written for a more general audience, this document is intended for individuals directly involved in the development of Split Pay. This includes software developers, project consultants, and team managers. This document need not be read sequentially; users are encouraged to jump to any section they find relevant. Below is a brief overview of each part of the document.

Part 1 (Introduction)

- This section offers a summary of the HR SYSTEM project, including goals and objectives, project scope, general system details, and some major constraints associated with the intended platform.

Part 2 (Data Design)

- Readers interested in how HR SYSTEM organizes and handles data should consult this section, which covers data structures and flow patterns utilized by the system.

Part 3 (Architectural and Component-Level Design)

- This section describes the HR SYSTEM class by class, including interface details, class hierarchies, performance/design constraints, process details, and algorithmic models.

Part 4 (User Interface Design)

- This section covers all of the details related to the structure of the graphical user interface (GUI), including some preliminary mockups of the HR SYSTEM Android application. Readers can view this section for a tentative glimpse of what the final product will look like.

Part 5 (Restrictions, Limitations, and Constraints)

- This section discusses the general constraints imposed upon the project

Part 6 (Testing Issues)

- Readers interested in the software testing process should consult this section, which offers a list of test cases, expected responses, and other pertinent information.

Part 7 (Appendices)

- This section includes any additional information which may be helpful to readers.

2.1.4. Product Scope

The scope of the product is confined to Pakistan ports and nearby organizations of logistics, which are into the concerned industry, this report is done only on industries dealing with logistics areas in palistan

2.1.5. References

1. What is MySQL, MySQL 5.1 Reference Manual".MySQLAB.
2. https://www.academia.edu/15968878/Software_Requirements_Specification.com
3. https://www.scnsoft.com/case-studies/logistics-and-transportation
4. *https://link.springer.com/content/pdf/bbm%3A978-1-4615-5277-2%2F1.pdf*

2.2. Overall Description

2.2.1. Operating Environment

3. The software operates on the Unix, Linux, Mac OS and Microsoft Windows operating systems running an Apache HTTP Server (v1.3 or later), scripted with Laravel and using integrated MySQL (v5.0 or later) database management system. Moreover, it is an operating system independent Web-based application.

2.2.2 Design and Implementation Constraints

In this software If database have more than million records than we need to use the api with cache binding which increase the data transfer rate and load balancing will be managed through algolia api for application flexibility

2.2.3 Assumptions and Dependencies

Dependencies:

Hardware Limitation

There is no limitation in the operating system in which SHIPMENT SERVICE will work. However, the SHIPMENT SERVICE and the database will work on a server that needs to be always online. Users can access the system with any internet browser.

2.3 External Interface Requirements

2.3.1 User Interfaces

Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.

2.3.2 Hardware Interfaces

The *UMS SHIPMENT SERVICE* is fully equipped to be interfaced with any hardware device like, BAR CODE, SMART CARD, FINGER PRINT, PALM BIOMETRIC etc. User login details can be captured through any of the device mentioned above. We need the API for the device you suggest which can go into integrating the device with the software application.

2.3.3 Software Interfaces

The application operates by connecting to a MySQL Database that is to be set up during its installation. Database administrators can also make changes to the database using the web-application phpMyAdmin as and when required. The application uses the underlying PHP-Laravel based Symfony Web development framework libraries and classes. The application

can also be used on a local network server running on an Apache platform. The entire database required by the application to function is then shared by the workstations connected to the network

2.3.4 Communications Interfaces

Any suitable standard web browsers with JavaScript support. Mozilla Firefox 7.0 or later is recommended for best experience. Opera, Microsoft Internet Explorer, Apple Safari and Google Chrome are also supported. The application operates via the standard HTTP, and also on a local host. It also provides options for email configuration by the organization's administrators, so that they can receive various notifications regarding its employees via email.

2.4 System Features

This section displays the various features of our product and what the users can expect from them. Our product is divided into number of modules, each module having its own significance.

2.5 Nonfunctional Requirements

2.5.1 Performance Requirements

The number of the online user of the SHIPMENT SERVICE can be estimated as 50 at most.
There is no restriction on the number of the users to be added to the database.

2.5.2 Safety Requirements

A regular backup of all databases associated with the system must be performed in order to prevent loss of information. A weekly backup is recommended. Please contact the Server administrator for more details regarding backup procedures.

2.5.3 Security Requirements

All privacy matters are determined according to the HR SYSTEM Privacy Policy which contains clauses regarding User Identity Authentication.

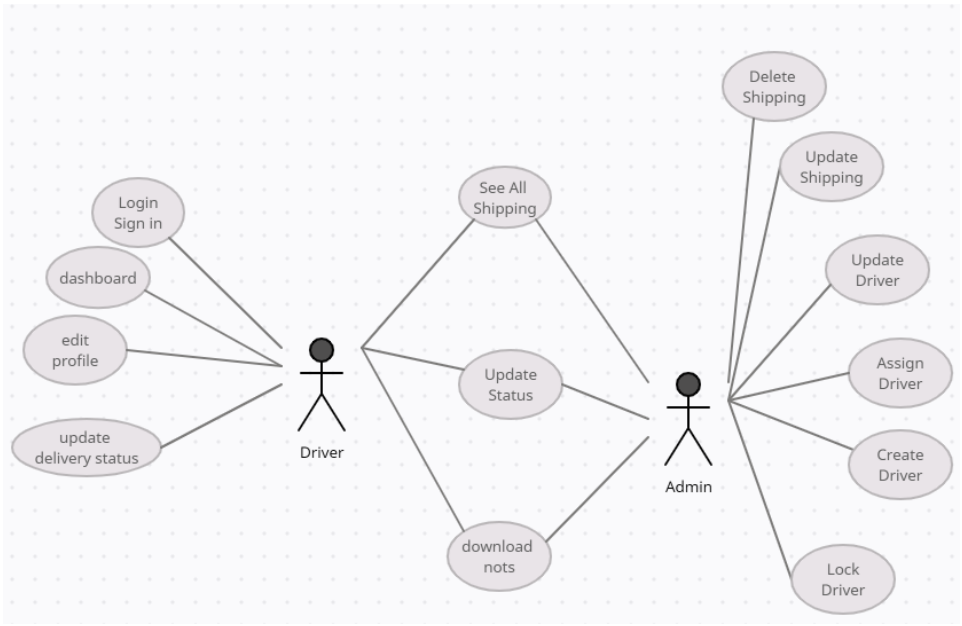
Administrator	➢ Is a “super user” who manages the Portal ➢ Has a privilege to submit, edit, disable and query all types of data in the system ➢ Approve and manages user registration process. ➢ Has a privilege to see all the identified data.
Supervisor	➢ Is similar to Administrator but does not have access to administrative functions. ➢ Has a privilege to submit, edit and disable participant and module data in the system. ➢ Has read-only privilege to administrative data.
Technician	➢ User role assigned to an individual who is in-charge of entering data into the system. ➢ Handles duration, storage and distribution of information. ➢ Has access to only de-identified data.
ESS User	➢ Has read-only access to aggregate data.

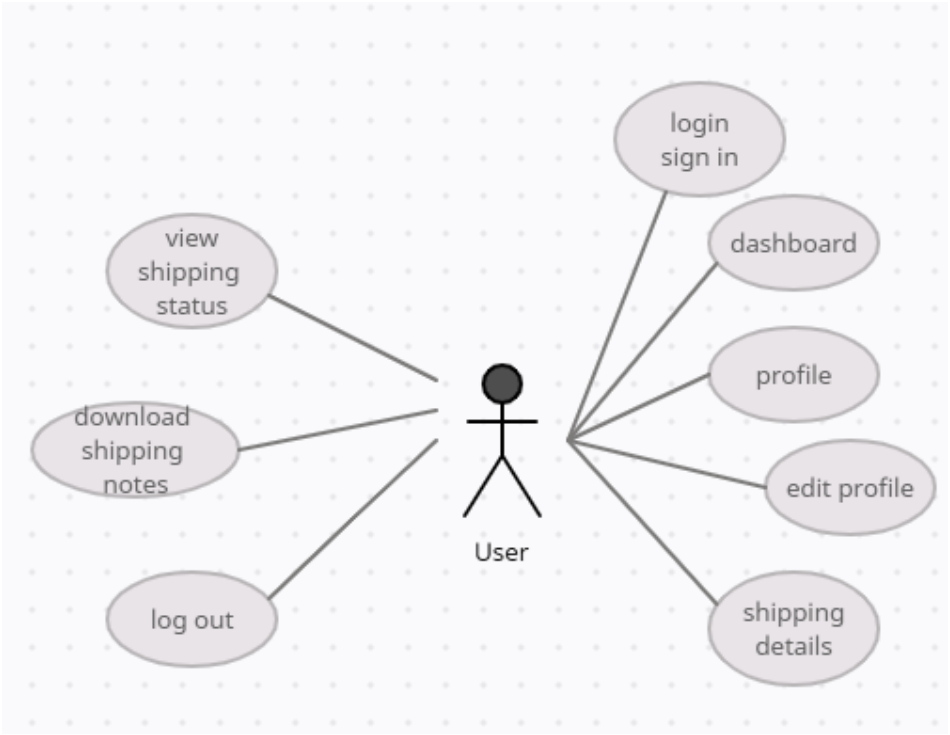
Chapter 3

Use Case Analysis

Chapter 3: Use Case Analysis

3.1. Use Case Model





3.2. Use Cases Description

1)

Use Case	**LOGIN**
Scope	To allow admin to login to the system
Primary Actor	Admin
Stake Holders	Users, Admin, Driver
Preconditions	Must have valid username/password
Post conditions	Enter in system without any problem
Main Success Scenario	1. This use case begins when admin desire to login in to the system. 2. Admin enters login Information. 3. System validates admin input. 4. Admin presses login button. 5. Admin will login.
Extensions	If username and password are wrong then system stops the login process.

2)

Use Case	**Manage Shipments**
Scope	To allow an admin to manage dashboard
Primary Actor	Admin
Stake Holders	Admin
Preconditions	Admin Manage All shipments, Shipper and Driver
Post conditions	Create edit and assign Shipments
Main Success Scenario	1. This use case begins when the employee open leave request interface. 2. Request for message. 3. The Employee provides queries type. 4. Verifies employee message content 5. Employee presses Send button. 6. The message is saved to the database.
Extensions	If the message content is too long the then indicates error.

3)

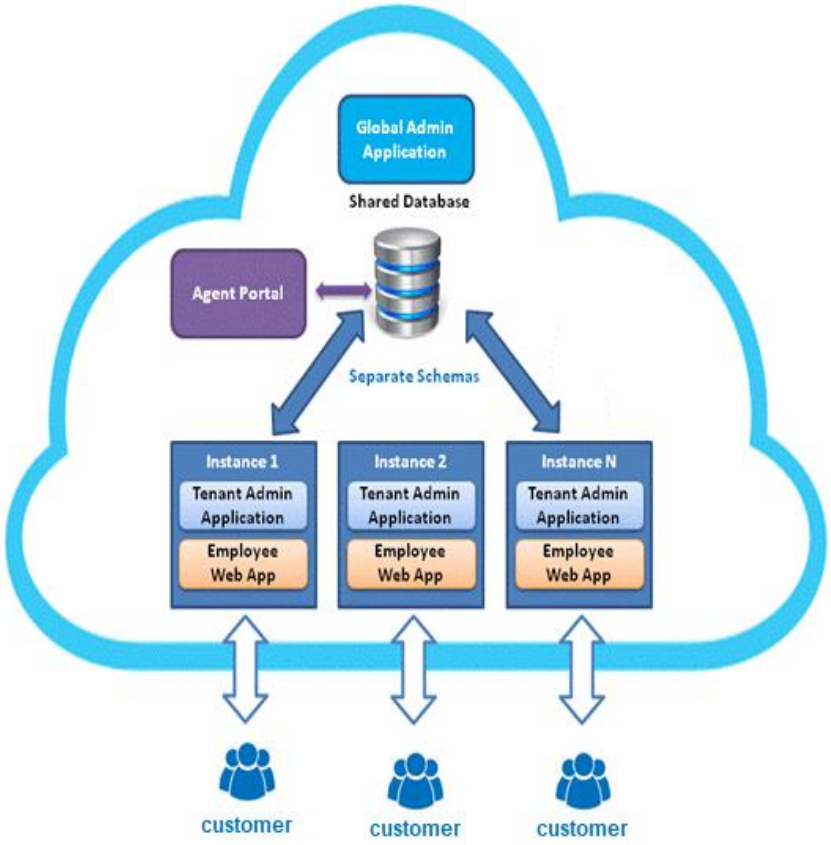
Use Case	**View Shipments**
Scope	View the shipments
Primary Actor	Admin
Stake Holders	Admin, Driver
Preconditions	Admin view the shipments from UI
Post conditions	Further steps to show full attendance.
Main Success Scenario	1. Staff view the attendance 2. Attendance is viewed
Extensions	Admin has authority to view all the shipments.

Chapter 4

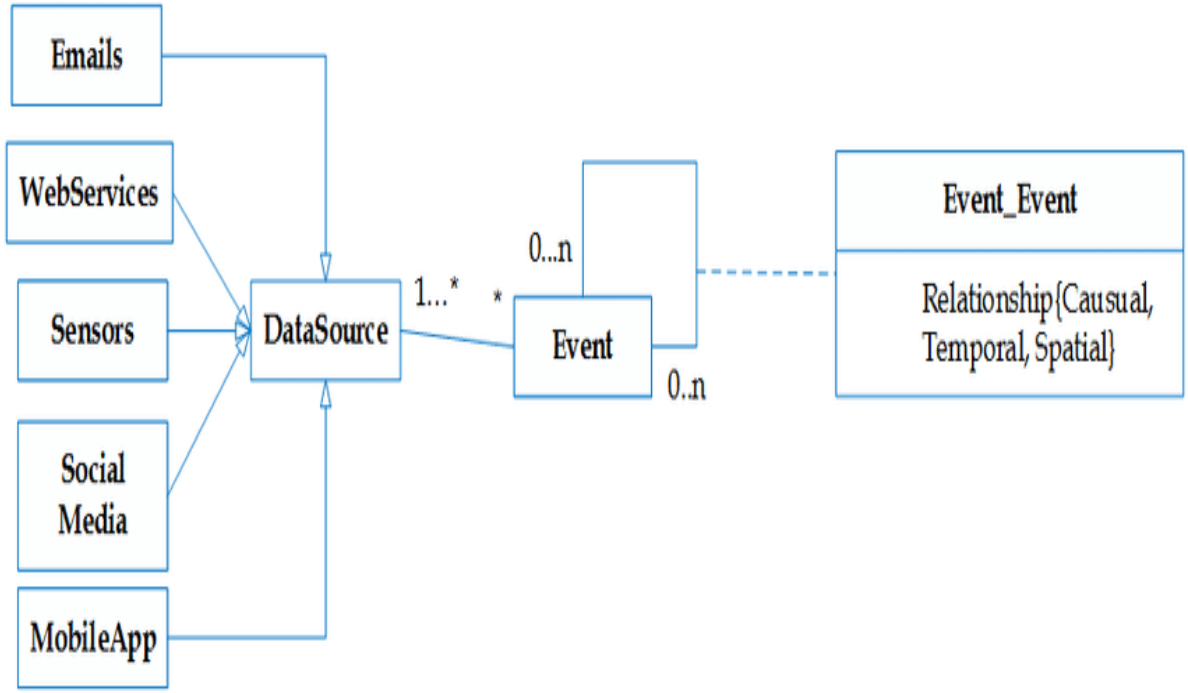
System Design

Chapter 4: System Design

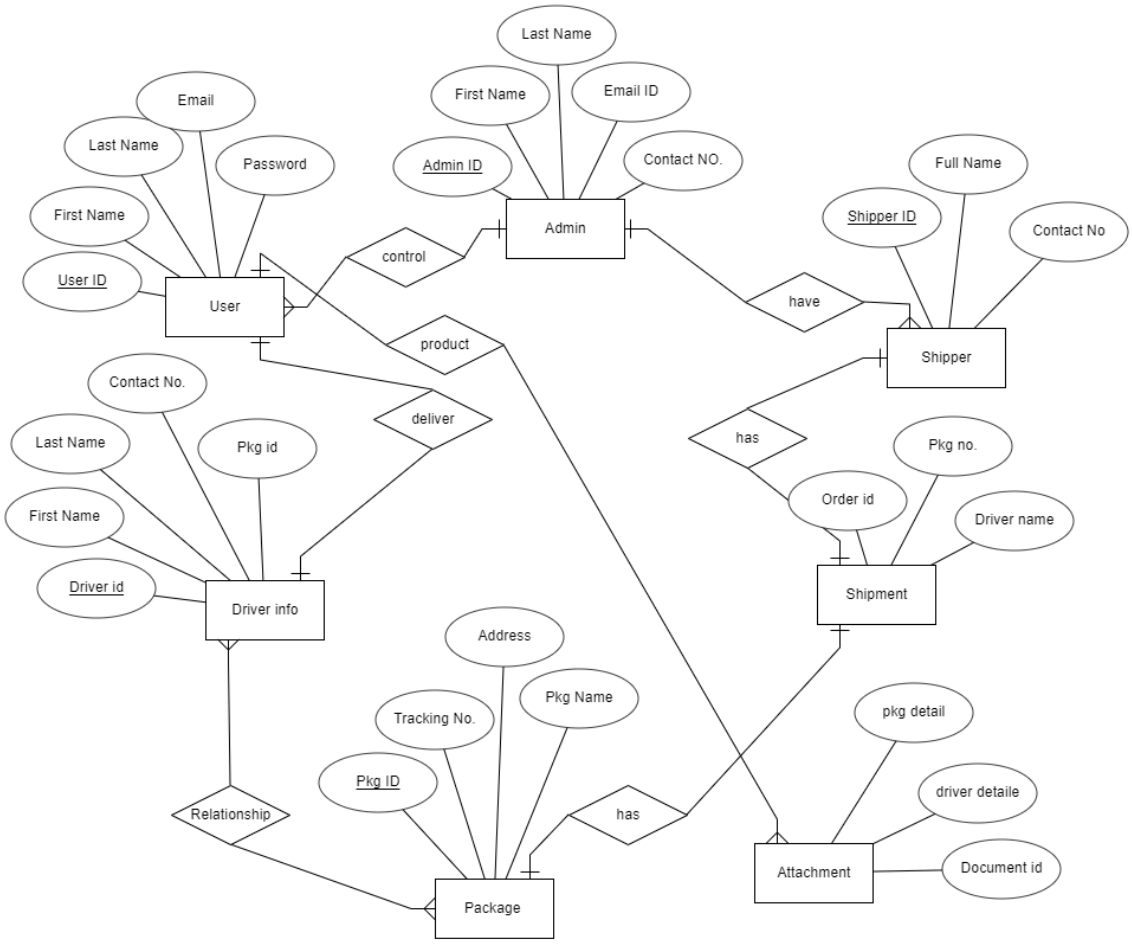
4.1. Architecture Diagram



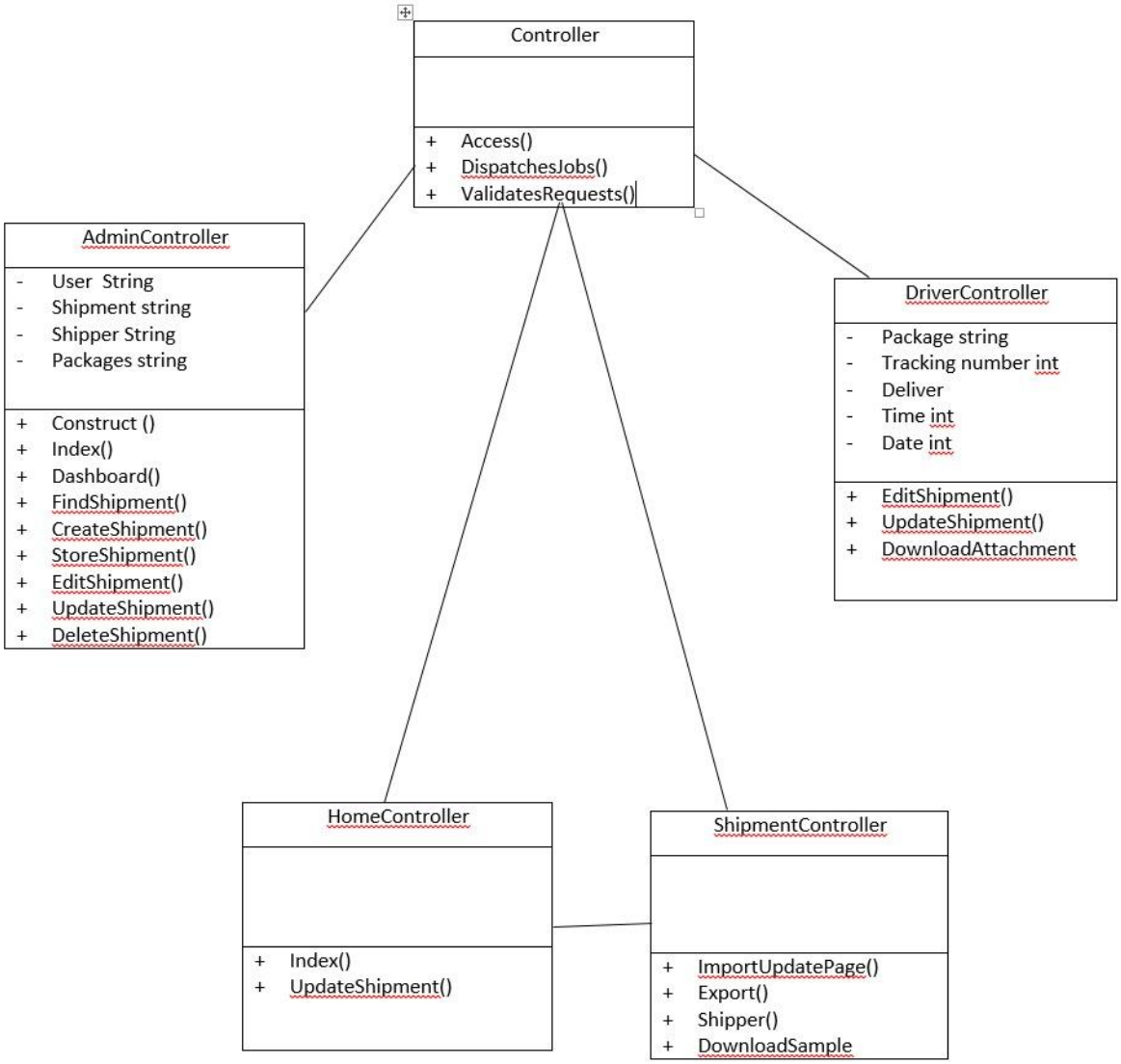
4.2. Domain Model



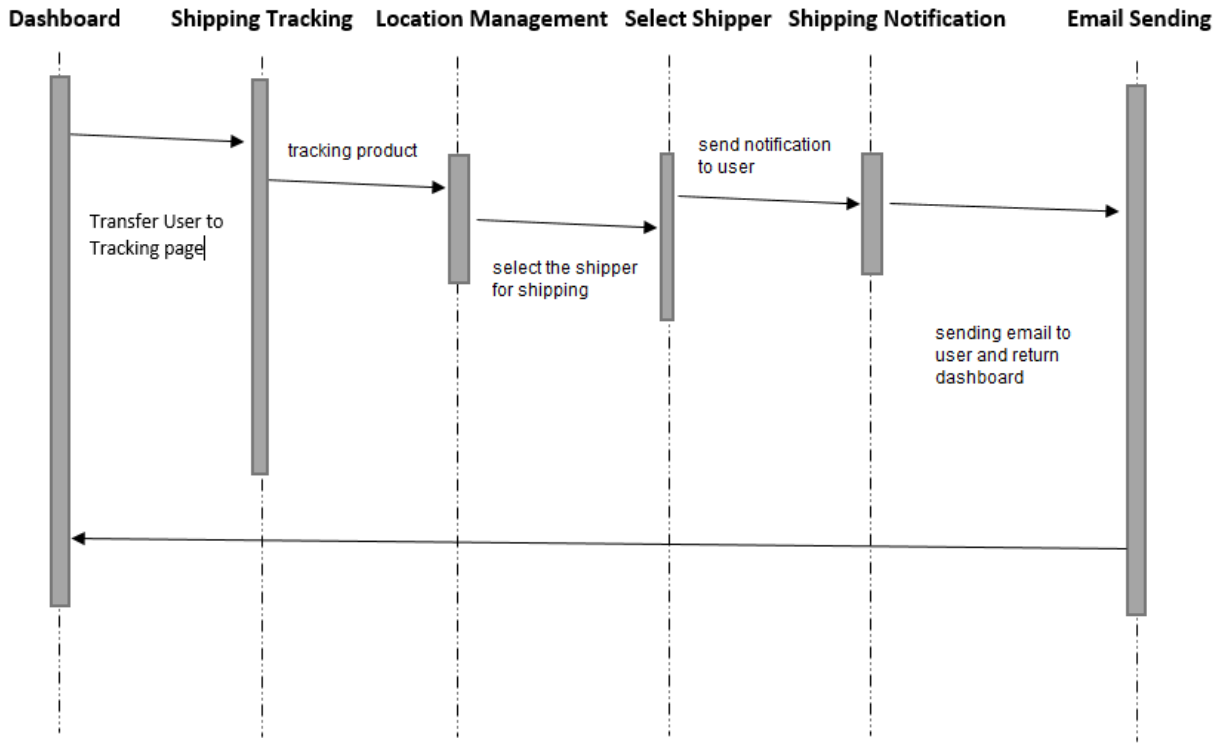
4.3. Entity Relationship Diagram with data dictionary



4.4. Class Diagram

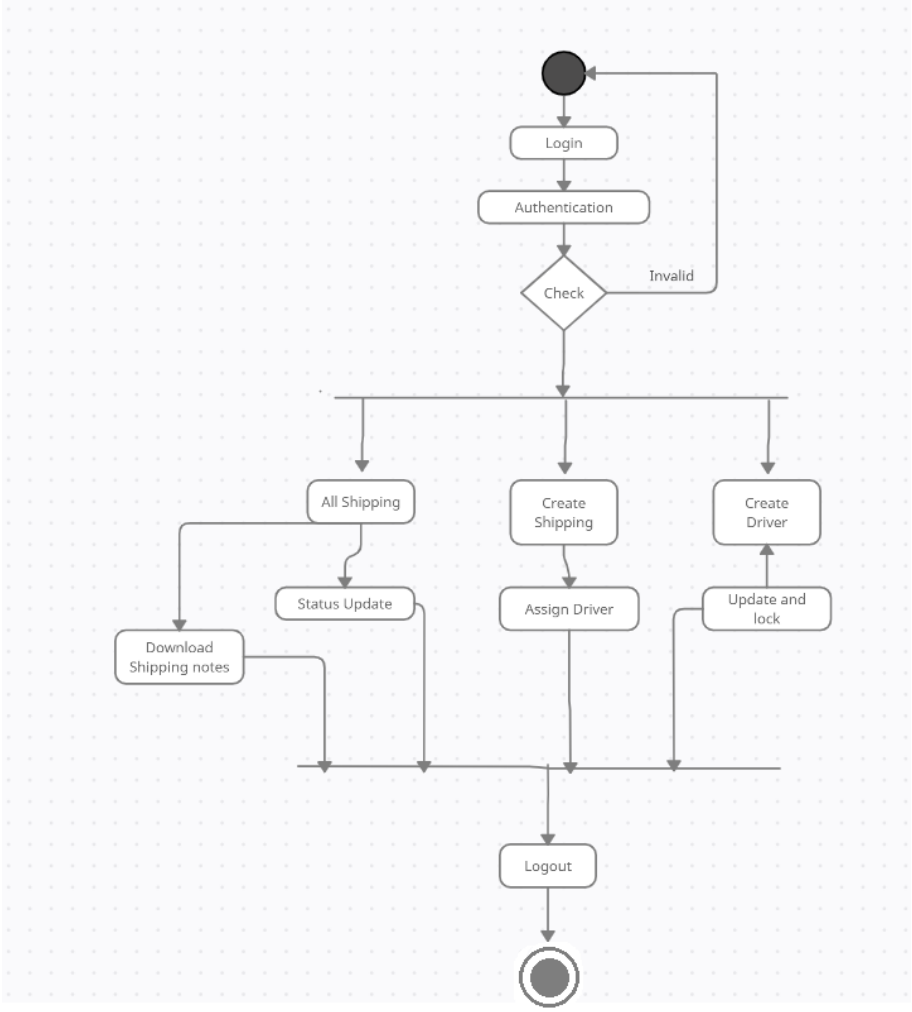


4.5. Sequence / Collaboration Diagram

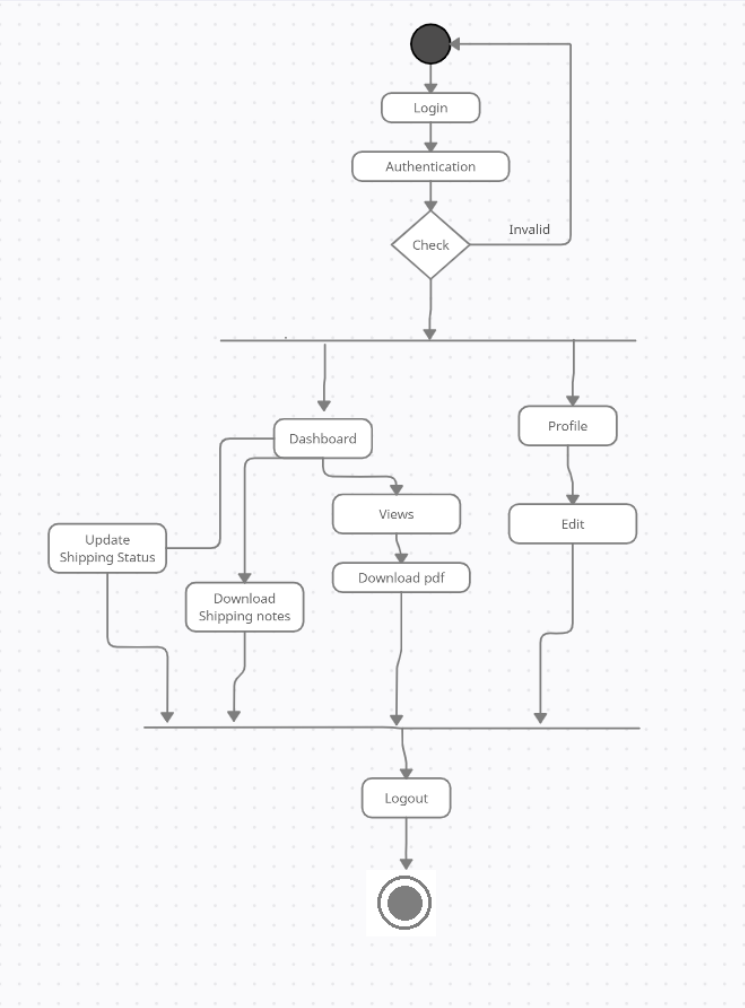


4.6. Activity Diagram

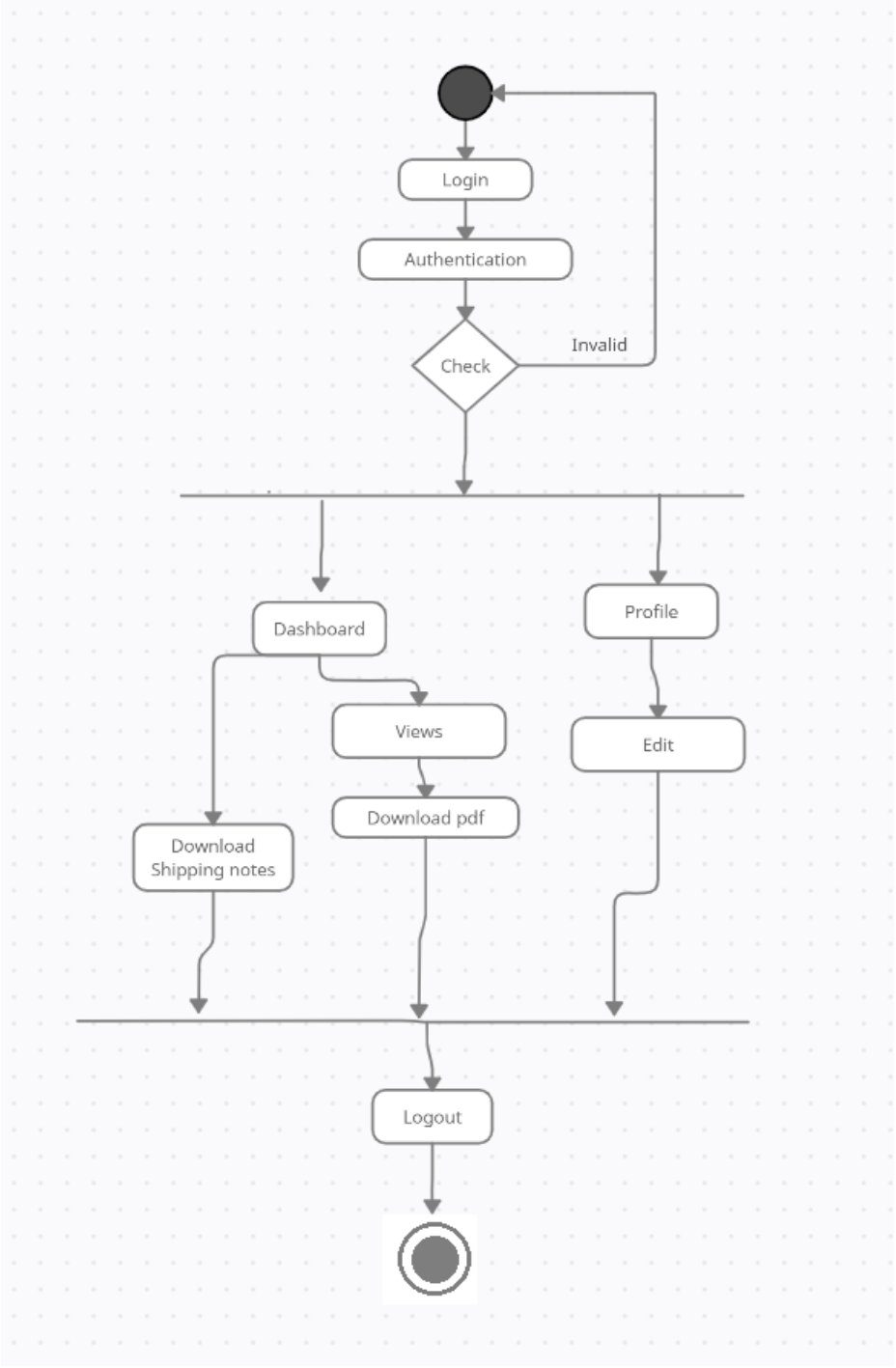
Admin Diagram



Driver Diagram



User Diagram



Chapter 5

Implementation

Chapter 5: Implementation

This chapter describes the implementation and evaluation process conducted on the super resolution system. In terms of implementation, the development environment, tools, Development platform, database used and levels of system users are also discussed. Meanwhile for testing, the type of testing procedure used, participants and analyses made on the results for the testing procedure are explained

Requirement Gathering & Analyses	In this phase all the requirements and assets necessary are ready for analyzing. Errors and bugs are pinpointed during analyses and fixed. And then the feasibilities in the different areas of implementation are formulated (including time and cost)
Planning	In this phase plan will be manifested on the basis on the analyzed data and requirements. The time and cost for each SDLC phase will also be decided
Design	In this phase, deployment model will be chosen and database will be designed. It will be verified by supervisor.
Implementation	After design phase implementation according to the requirements. During and after completion of this phase, V&V will be applied to check if the system fulfill the requirements.
Testing	Testing will be done to check requirements and functionality. Both dynamic and static testing will be performed. Dynamically through testing tools and statically to check every line of code manually. Static testing will reduce errors upon execution and allow us to find errors that otherwise are very difficult to find.
Deployment	After tests are done and no further errors are discovered, the system will be deployed. In case of discovery of errors or in case a change is made, regression testing will be performed.

5.1. Components, Libraries, Web Services and stubs

1. Shipment Management

A good shipment system must have a well-managed database.

Automating your shipment process the system will help you cut down a significant amount of manual workload in shipment management. The module will help you track and manage shipments easily. Once you have your system integrated, you also won't have to stress over locations tracking as the system has features inbuilt to automate the shipping services with help google map real time tracking.

2. Shipper & Driver Management

Shipper & Driver management is one of the most chaotic feature in logistic.

The driver management of a shipment is specially developed to improve the tracking process with higher efficiency. From shippers and users, the driver management will help you make things more organized and easy to contact for get more info about shipments, taking the complexity out of the shipping process.

3. Centralized database

The age of maintaining racks of files and piles of papers and folders of spreadsheets and documents you even don't have a clear track of is long gone. The centralized database of an Shipping System will help you store all the data of the department in a centralized hub that everyone can access easily.

With this, you will be able to receive real-time shipment status updates for accuracy. Security of the confidential data will be improved, as a good system has encryptions and several layers of security measures.

5.2. Deployment Environment

- Browser
    - Chrome
    - Firefox
    - Microsoft Edge
- Server
    - 16 GB Memory
    - 8 GB Database Size
    - GB Space on Application Server
    - Maximum 1M shipments Data

5.3. Tools and Techniques

4. Tools:
5. Visual Studio Code
6. SQL Server (Relation Object Mapping)
7. Languages:
8. HTML5 (Blade Template), CSS (SASS), PHP (Laravel)

5.4 Best Practices / Coding Standards

There are best practices to write the code which we will follow in our project

- Commenting
- Naming Convention
- We will keep the code simple

5.5 Version Control

- Version control means keeping the copies of your code or files from every stage in its lifecycle.
- Version control system allows us to manage all versions of our code with representing a single version at a time.

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

Shipping service is a web application and it's used to managed the shipment and assign the shipment to the shipper and then report those findings to the end-user through tracking ID. Once the shipment is delivery to end user delivery note assign to user for delivery confirmation.

6.1. Use Case Testing

Test Case ID	TC01
Test Case Summary	To enter Shipment in System with all type of data validation and assign to shipper.
Related Requirement	User, Admin, Driver Should able to login.
Prerequisites	Admin must be logged in.
Test Procedure	• Select fields in Add Shipment Form. • Enter Shipment data in Fields. • Click Create Shipment button.
Test Data	• Tracking Id. • Valid Home Address • Valid customer name • Post Code • Email Address
Expected Result	• If username and password is invalid show error message. • If tracking ID is empty or invalid show error message. • If required inputs are null then display warning message.
Actual Result	• If tracking id is valid, the result is as expected. • If tracking id is not valid then invalid message displayed. • If fields are empty then warning message displayed.
Status	Pass
Remarks	This test case is simple and easy.
Created By	Admin

Test Procedure	1. Admin login display shipment dashboard. 2. Create shipper. 3. Create shipment and assign to shipper. 4. Download delivery note for delivery confirmation. 5. Import all the shipment in excel file.
Test Data	Valid username: ali, Ali Invalid username: 12 .ali ./ali, ali %^3 Valid password: 123Abc@5, Abc567$%9 Invalid password: 1_2alone, _star12 Validemail:zubairsaleem926@gmail.com, ali111@gmail.com Invalid email: ali.com, ali@yahoo Valid phone# : 03221234567 Invalid phone: @56rfgf7999, 2wstyyA
Status	Pass
Remarks	This test case is simple and easy.
Created By	M.Uzair,Moeez Ali, Saad Khan
Date of Creation	21/11/2021
Executed By	M.Uzair,Moeez Ali, Saad Khan
Date of Execution	22/11/2021
Text Environment	Desktop: Xampp, Visual studio,

Test Suite ID	TS001
Test Case ID	TC002
Test Case Summary	To verify all the form field and data validation.
Related Requirement	Real time location tracking.
Prerequisites	Shipment Portal
Test Procedure	1. Admin login display shipment dashboard. 2. Create shipper. 3. Create shipment and assign to shipper. 4. Download delivery note for delivery confirmation. 5. Import all the shipment in excel file.
Test Data	Valid username: ali, Ali Invalid username: 12 .ali ./ali, ali %^3 Valid password: 123Abc@5, Abc567$%9 Invalid password: 1_2alone, _star12 Validemail:zubairsaleem926@gmail.com, ali111@gmail.com Invalid email: ali.com, ali@yahoo Valid phone# : 03221234567 Invalid phone: @56rfgf7999, 2wstyyA
Status	Pass

Created By	M.Uzair,Moeez Ali, Saad Khan
Date of Creation	21/11/2021
Executed By	M.Uzair,Moeez Ali, Saad Khan
Date of Execution	22/11/2021
Text Environment	Desktop: Xampp, Visual studio,
Remarks	This test case is simple and easy.

6.2. Equivalence partitioning

Login system	**Valid**
Registration system	**Valid**
Add shipment to the portal	**Valid**
Live location tracking	**Invalid**
Add shipper to the portal	**Valid**
Application is tracking the shipments status	**Valid**

6.3. Boundary value analysis

Sr.		Invalid	Valid	Invalid
1.	**Password**	Less than 8 character	1 – 15 character	1 – 1
2.	**Email**	jbcbilalb@bfdh.com	bilal427@gmail.com	Ch,vayf@bilal.com

6.4. Data flow testing

We use data flow testing for verify the shipment tracking id also verify the required field of shipment portal.

6.5. Unit testing

In unit testing smallest and testable parts individually and independently for proper testing of units. We do unit testing to verify that every unit of our project are fit for use or not. We do unit testing for verification and validation. We test units after and during development. We do unit testing to check functional correctness and completeness, for error handling, to check input values, to see correctness of output data and for optimizing and performance.

6.6. Integration testing

We have test firstly every unit individually then after that we test the whole application integrated features, we have created user account and create the shipment also search it through tracking id for testing after that we check whole application and we everything is working fine.

6.7. Performance testing

We do performance testing to check the speed of project. We verify the performance of all the features working speedily and properly.

6.8. Stress Testing

We do stress testing to verify the saved the data in My-SQLi before some error or crashing application, to verify if unexpected failures do not cause security issues.

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1. Project Summary

The UMS SHIPMENT SERVICE Application aims at helping logistic business to find the most suitable tracking shipments, make real time progress and extend them according to requirements, if required. It enables users to track the shipments, view real time progress and manage deliveries. Users access location based information and update through email.

7.2. Achievements and Improvements

In this project we develop complete shipment management system and improve the logistic company to deliver the package on given time. In this project all the shipment assign the tracking id therefore loss of shipment is very rare.

7.3. Critical Review

Existing models use only single shipper for shipment. We develop the system where multiple shipper create and assign the shipper to the shipment.

7.4. Lessons Learnt

Following are the learning outcomes that we have learned during the development of the Project:

- Learn how to apply software engineering techniques on a project.
- Learn about the importance and rule of documentation in a software project.
- Learning of new technologies and tools.
- Learn to meet deadlines.
- Learn to be flexible while developing a software project.
- Team building skills and responsibilities.
- Learn to manage the project effectively.
- Learn how to tackle the changes to the software scope during development.
- Learn how to develop useful and live working project.
- Learn communication skills for better project communication management.
- Learn new testing and development tools.
- Learn to develop better documentation.

7.5. Future Enhancements/Recommendations

We warmly recommend this project to our logistic company to use the shipment system.