

COURIER SERVICE WEBSITE

A Project Report

Submitted in partial fulfilment of the Requirements for the award of the Degree of

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

By

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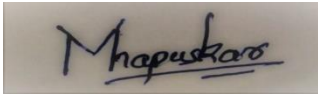
PROFORMA FOR THE APPROVAL PROJECT PROPOSAL

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CERTIFICATE

This is to certify that the project entitled, "**COURIER SERVICE WEBSITE**", is bonafied work of **Mr VEDANT MHAPUSKAR** bearing Seat.No: **2010197** submitted in partial fulfillment of the requirements for the award of degree of BACHELOR OF SCIENCE in INFORMATION TECHNOLOGY from University of Mumbai.

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ABSTRACT

It is now-a-days very important for the people to send or receive articles like imported furniture, electronic items, gifts, business goods and the like. People depend vastly on different transport systems which mostly use the manual way of receiving and delivering the articles. There is no way to track the articles till they are received and there is no way to let the customer know what happened in transit, once he booked some articles. In such a situation, we need a system which completely computerizes the cargo activities including time to time tracking of the articles sent. This need is fulfilled by Courier Management System software which is online software for the cargo management people that enables them to receive the goods from a source and send them to a required destination and track their status from time to time.

ACKNOWLEDGEMENT

I would like to thank the almighty for giving us the courage & perseverance in completing the project. This project itself is an acknowledgement for all those who have given us their heart-felt-co-operation in making it a grand success.

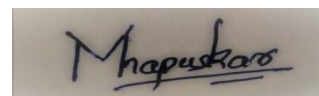
I am thankful to our **Course Co-ordinator, Mr. Mandar Bhave** as well as **Prof. Ms. Mansi Rajapurkar & Prof. Ms. Nilam Bhagde** for providing valuable guidance at every stage of this project work.

DECLARATION

I hereby declare that the project entitled, “**Courier service website**” done at **D.G. Ruparel College of Arts, Science & Commerce**, has not been in any case duplicated to submit to any other university for the award of any degree. To the best of my knowledge other than me, no one has submitted to any other university.

The project is done in partial fulfilment of the requirements for the award of degree of **BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)** to be submitted as final semester project as part of our curriculum.

Vedant Mhapsuakar

A rectangular box containing a handwritten signature in dark ink. The signature appears to be 'Mhapsuakar' with a stylized flourish at the end.

Signature:

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CHAPTER 1

Introduction

1.1Background

A courier service is an organization which offers special deliveries of packages. Courier services usually boast faster delivery times than any alternative method of transporting than many services in the modern world rely on it. The largest courier service in the world is the United Parcel Service (UPS), which delivers more than 12 million packages globally each day. There is also a type of courier service which utilizes the extra baggage allotment of airline passengers to transport documents quickly and easily, with less hassle, through the Customs office of a country. These courier services offer greatly discounted fares on commercial tickets to foreign locations in exchange for the use of the passenger's baggage space.

In modern age, as time increase, needs & requirements of the person are also increased. They want more facility & try to do their task quickly & within time. Within the country, the things can be imported through post service. However, it consumes the time & sometimes problem of damage or missing occur. The courier service is one of the solutions of these problems. It is used to send some things to any person within time. The courier company has number of branches, which are spread over the country. So that when person wants to send things then he has to contact at nearest courier service branch. The courier company creates the schedule & gives internal/external services. The courier service work as destination office or source office. The source office branch receives the order means consignments & sends it to the destination courier branch. The company has certain rules according to the weight. Using the courier service person can easily send his/her parcel to other person in the particular destination within the time. Now days, 50% of companies of the world uses the services of various courier company.

1.2Objectives

This project deals with the ‘Courier management’. The system is used for daily activities such as booking, loading, delivery, status check, and managing branches. It is very difficult to do this process manually. Hence it is recommended to computerize the process by developing the relative software as the world is turning into information and technology; computerization becomes necessity in all walks of life.

Ecommerce is growing at a rapid pace, and it’s making parcel delivery a major concern for companies of all sizes. Large corporations and small businesses alike are wading into the waters of in-house delivery to reduce shipping costs and maintain control over their customer experience.

In-house courier delivery can be extremely beneficial if you do it well. You’d be hard-pressed to find a third-party courier service that cares more about your products and yours customers than you do. But there’s a lot to consider when running your own delivery operation.

1.3Purpose ,scope & applicability

1.3.1Project purpose:-

The system will be used for day-to-day activities like out return, company details, hub rates, booking, non-delivery, and pickup center. It is not easy to do this process manually because it would become very hectic. Hence it is suggested to automate the process by developing the relevant software as the world is moving from manual working to an information and technology era where automation becomes important in all parts of life.

The main purpose of this system is to connect all branches to the central database so the everywhere information is the same. This system increases efficiency and increases the customer satisfaction level. Proposed system is a software application which avoids more manual hours that need to spend in record keeping and generating reports. This application keeps the data in a centralized way which is available to all the users simultaneously. It is very easy

to manage historical data in database. No specific training is required for the employees to use this application. They can easily use the tool that decreases manual hours spending for normal things and hence increases the performance.

1.3.2 Scope:-

The system will be used for day to day activities like out return, company details, hub rates, booking, non delivery and pickup center. Actually it is not easy to do this process manually because it would become very hectic. Hence it is recommended to automate the process by developing the relevant software as the world is moving from manual working to information and technology era where computerization becomes important in all part of life.

Functionalities provided by courier service website are as follows:

1. Easy to manage all the daily transactions
2. Centralized database helps in avoiding conflicts between different braches
3. Avoids human errors
4. Provides better customer support from any branch
5. Can generate required reports easily
6. Easy to manage historical data in a secure manner
7. Easy to use GUI that does not requires specific training.

1.3.3Applicability:-

courier services are a more specialized delivery service that businesses and individuals turn to when they need a package or a document to reach its destination quickly. While regular mail services can also deliver packages rapidly, they cannot guarantee same day delivery or overnight delivery as the case may be. The term “courier service” can refer to every form of delivery or transport service ranging from a small, local operation to an international network servicing millions daily using a fleet of trucks, planes, trains and ships.

1.4 Achievements

Building the Courier service website helped me to build my knowledge in web development. I learned the new concept from basic to advanced and still exploring more as I was implementing the various feature on the website. I have experienced lots of errors while developing this project but the appropriate guidance of faculty and guide, helped me a lot to resolve those bugs.

Chapter 2

Survey of Technologies

This system is developed using python language. Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The languages that I have used for the frontend are HTML, CSS, and JavaScript.

Advantages of Python are as follows:

1. Python is powerful, and it can be used for literally anything.
2. Python is functional enough to interface with code written in other programming languages.
3. Python is available for almost any operating system.
4. Python is considered a highly effective way of coding because of its simple syntax and readability.
5. Python is an easy-to-learn language.
6. One of the major advantages of open-source software is that it's free to use, modify, and distribute

HTML

Hypertext Markup Language, a standardized system for tagging text files to achieve font, colour, graphic, and hyperlink effects on World Wide Web pages.

Advantages :

1. HTML is widely used.

2. Every browser supports HTML Language.
3. Easy to learn and use.
4. HTML is light weighted and fast to load.
5. Do not get to purchase any extra software because it's by default in every window.
6. Easy to use.
7. Loose syntax (although, being too flexible won't suit standards).

CSS

Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

JAVASCRIPT

JavaScript, often abbreviated as JS, is a programming language that conforms to the ECMA Script specification. JavaScript is high-level, often just-in-time compiled, and multi-paradigm. It has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions

Advantages of JavaScript

- **Speed.** Client-side JavaScript is very fast because it can be run immediately within the client-side browser. Unless outside resources are required, JavaScript is unhindered by network calls to a backend server.
- **Simplicity.** JavaScript is relatively simple to learn and implement.
- **Popularity.** JavaScript is used everywhere on the web.
- **Interoperability.** JavaScript plays nicely with other languages and can be used in a huge variety of applications.
- **Server Load.** Being client-side reduces the demand on the website server.
- **Gives the ability to create rich interfaces.**

For database I have used SQLite3. SQLite is a relational database management system contained in a C library. In contrast to many other database management systems, SQLite is not a client–server database engine. Rather, it is embedded into the end program. SQLite generally follows PostgreSQL syntax

Chapter 3

Requirements And Analysis

3.1 Problem Definition

The existing system is not totally automated. Though the system is computerized to a particular extent, it has to do a lot of manual work.

The different processes involved are:

1. To maintain details of bookings manually.
2. Calculate salaries of the employees.
3. To maintain details of the incoming couriers.
4. To maintain returns details.
5. To maintain out return details

The existing system has lot of problems such as:

1. The entire database is maintained manually which is rather tedious and error prone.
2. Time delay is more because of verification of many records for generating reports, answering querier etc.
3. Queries are not answered properly due to lack of communication.
4. More space is required to keep all the records.
5. Improper interface.

3.2 Requirement Specification

Requirement analysis is significant and essential activity after elicitation. We analyze, refine, and scrutinize the gathered requirements to make consistent and unambiguous requirements. Requirements analysis encompasses those tasks that go into determining the needs or conditions to meet for a new or altered product or project, taking account of the possibly conflicting requirements of the various stakeholders, analyzing, documenting, validating and managing software or system requirements. The following section contains the user and system requirements for the carpooling website.

3.2.1 Existing System

The existing system is a manual one in which users are maintaining ledgers, books etc to store the information like goods booking details, loading particulars, deliveries particulars, details of receivers of items at all branches, and customer details as well as employee details. It is very difficult to maintain historical data. Also regular investments need to purchase stationar every year.

Disadvantages of Existing System:

The following are the disadvantages of current system

1. It is difficult to maintain important information in books
2. More manual hours need to generate required reports
3. It is tedious to manage historical data which needs much space to keep all the previous year's ledgers, books etc.
4. Daily transactions are to be entering into different books immediately to avoid conflicts which are very difficult.
5. No co-ordination between different branches because we are not storing the data at centralized location.

3.2.2 Proposed System

The new system titled “Courier Management system” is hence proposed to remove all the problems in the existing system discussed above. Proposed system is a software application which avoids more manual hours that need to spend in record keeping and generating reports. This application keeps the data in a centralized way which is available to all the users simultaneously. It is very easy to manage historical data in database. No specific training is required for the employees to use this application. They can easily use the tool that decreases manual hours spending for normal things and hence increases the performance. As the data is centralized it is very easy to maintain the status of the goods booked in all branches.

Advantages of Proposed System:

The following are the advantages of proposed system

1. Easy to manage all the daily transactions
2. Centralized database helps in avoiding conflicts between different braches
3. Avoids human errors
4. Provides better customer support from any branch
5. Can generate required reports easily
6. Easy to manage historical data in a secure manner
7. Easy to use GUI that does not requires specific training.

3.2.3 Requirement Analysis

Requirement analysis is the process of obtaining all pertinent information regarding the project from you, i.e. the client. You have complete control over how the website looks and the features it must include. Every small detail has to be to your liking and a **web development company** will always try to ensure that you like the end product that you are paying for. However, making changes in the middle of web development or once a certain part of the web development is over, wastes time, resources and is impractical for companies that offer cost effective services

by completing multiple projects simultaneously. Requirement analysis takes all of your input on all aspects of web development before the process begins and thus ensures that the final product has the least possible revisions in order to be ready for deployment.

Functional Requirements

Login

1. System must allow user to login by entering the user credentials.
2. System must allow new user to register to website.
3. System must allow user to logout.
4. System must allow admin to login by entering the admin credentials.
5. System must allow admin to logout.

Package

1. System should allow user to add package weight.
2. System must allow user to select the category and sub-category of the package type.
3. System must allow admin to change the package details entered by user

Address

1. System must allow user to add the pickup and drop address of package.
2. System must allow user to select pickup and drop state of package
3. System must allow user to select the pickup and drop city of package
4. System should allow user to enter the pin code of pickup and drop address
5. System must allow admin to change the user entered address details.

Package Tracking

1. System must give user the tracking id of the package.
2. System should allow user to track the package.
3. System must allow admin to update the package status.

Non-functional Requirements

Safety Requirements:

New system is safe to use. Its usage will not provide any damage or any type of loss to the systems already in use. In addition, the security model is prepared regarding the safety of Database so that data is not lost in case of any damage to the system.

Security Requirements:

Security of the system shall be definitely be maintained through the password system. Each employee of every branch office will need to be authenticated with a login id and password. Any employee cannot change the system date to make proxy presentation of yourself.

Software Quality:

Attributes Our proposed system shall provide a automate software product for the different department of the courier company. The system will be highly Adaptable, Available, and Portable

3.3 Planning and Scheduling

3.3.1 Gantt Chart

The Gantt chart is the most widely used chart in project management. These charts are useful in planning a project and defining the sequence of tasks that require completion. In most instances, the chart is displayed as a horizontal bar chart.

Horizontal bars of different lengths represent the project timeline, which can include task sequences, duration, and the start and end dates for each task. The horizontal bar also shows how much of a task requires completion.

A Gantt chart helps in scheduling, managing, and monitoring specific tasks and resources in a project. The chart shows the project timeline, which includes scheduled and completed work over a period. The Gantt chart aids project managers in communicating project status or plans and also helps ensure the project remains on track.

Benefits of a Gantt Chart

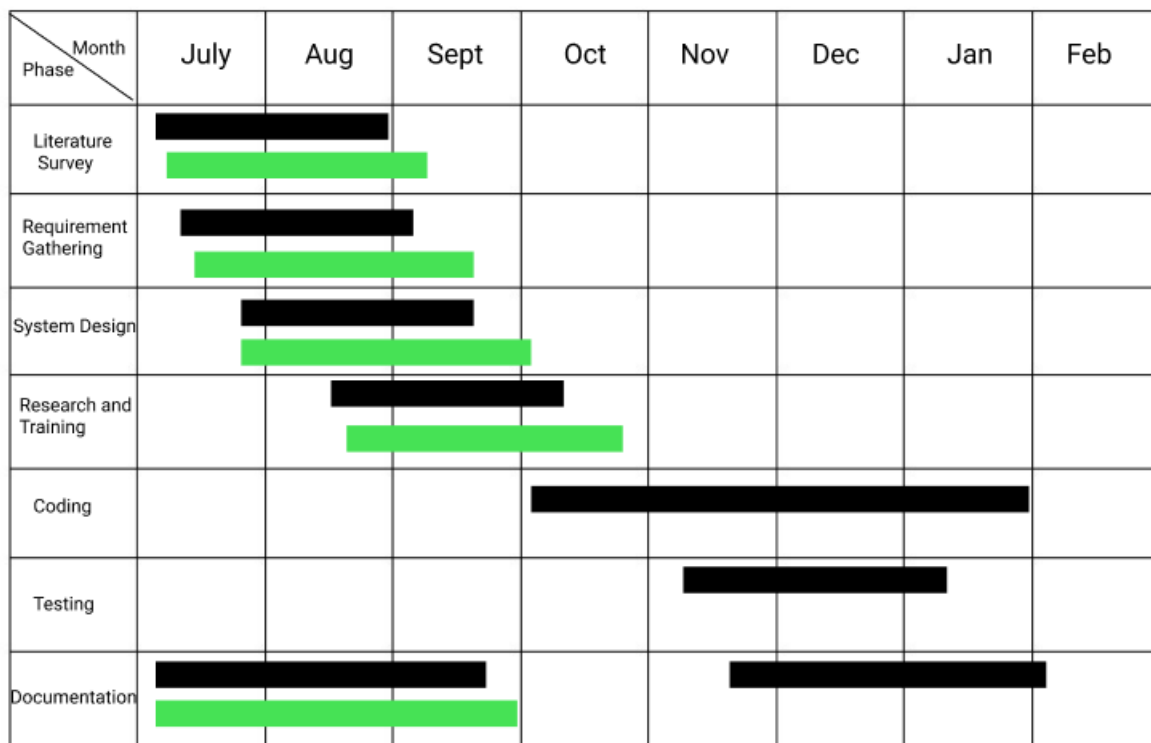
The chart identifies tasks that may be executed in parallel and those that can't be started or finished until others are complete. It can help detect potential bottlenecks and identify tasks that may have been excluded from the project timeline.

The chart depicts things like: task slack time or additional time for completion of a task that shouldn't delay the project; noncritical activities that may be delayed; and critical activities that must be executed on time.

Gantt charts can be used in managing projects of all sizes and types. These may include building infrastructure like dams, bridges, and highways. They may also include software development and other technologies. Project management tools, such as Microsoft Visio, Project, SharePoint, and Excel, or specialized software, such as GanttPro or Matchware, can help in designing Gantt charts.

What are Gantt charts used for?

Gantt charts help visualize various tasks and projects that occur simultaneously with an organization, how far along they have progressed. They are used by management to plan and schedule such projects so that resources can be allocated in the optimal way and that projects that are prioritized can finish before less important ones begin.



Estimated Time: 

Actual Time: 

Figure 1 . Gantt Chart

3.4 Software and Hardware requirements

3.4.1 Hardware Requirements

To run this software smoothly there are some hardware requirements which are as follows:

- Intel i3 Processor or above.
- Minimum 4 GB RAM
- 40 GB Hard Disk Space
- Ethernet card with an Internet

3.4.2 Software Requirements

- Windows 7 Operating System or above.
- Frontend: HTML, CSS, JS.
- Database: sqlite3.
- Language: Python.
- Framework: Django.

3.5 Preliminary Product Description

3.5.1 Product Perspective

This Courier service system project will have different modules. The login section will have login facility for the user and the admin who will operate this system. While taking orders from its customers, it will take all the details of its customers who is placing orders and all the details for the recipient such as its address, name, mobile number. During billing process system will generate a tracking id for their products. Through this tracking id, customers or its recipient will be able to track their products from any location using internet. It will provide status of the package after placing the order

3.6 SDLC Model

Incremental Development Model

Incremental Model is a process of software development where requirements are broken down into multiple standalone modules of software development cycle. Incremental development is done in steps from analysis design, implementation, testing/verification, maintenance.

Characteristics of an Incremental module includes

- System development is broken down into many mini development projects
- Partial systems are successively built to produce a final total system
- Highest priority requirement is tackled first
- Once the requirement is developed, requirement for that increment are frozen

Incremental Phases: Activities performed in incremental phases

Requirement Analysis: Requirement and specification of the software are collected

Design: Some high-end function are designed during this stage

Code: Coding of software is done during this stage

Test: Once the system is deployed, it goes through the testing phase

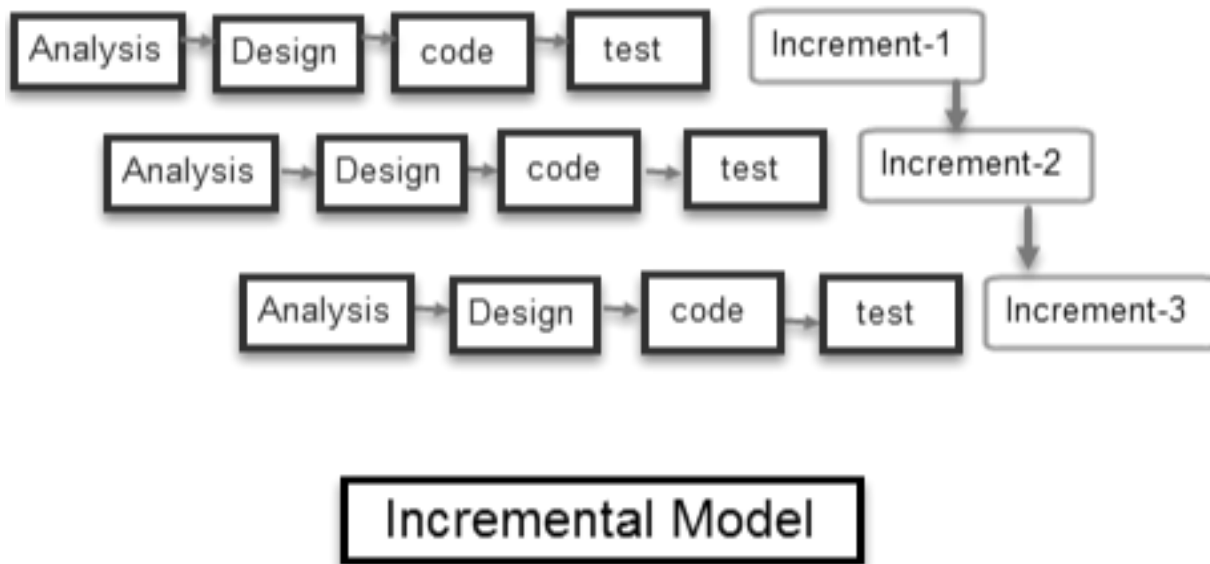


Figure 2 . Incremental Model

3.6.2 Data Flow Diagram

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyse an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually “say” things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. That’s why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.

Three common systems of symbols are named after their creators:

- Yourdon and Coad
- Yourdon and DeMarco
- Gane and Sarson

One main difference in their symbols is that Yourdon-Coad and Yourdon-DeMarco use circles for processes, while Gane and Sarson use rectangles with rounded corners, sometimes called lozenges. There are other symbol variations in use as well, so the important thing to keep in mind is to be clear and consistent in the shapes and notations you use to communicate and collaborate with others.

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Data Flow Diagram Symbols and Notations:

Using any convention's DFD rules or guidelines, the symbols depict the four components of data flow diagrams:

- External entity: an outside system that sends or receives data, communicating with the system being diagrammed. They are the sources and destinations of information entering or leaving the system. They might be an outside organization or person, a computer system or a business system. They are also known as terminators, sources and sinks or actors. They are typically drawn on the edges of the diagram.
- Process: any process that changes the data, producing an output. It might perform computations, or sort data based on logic, or direct the data flow based on business rules. A short label is used to describe the process, such as "Submit payment."
- Data store: files or repositories that hold information for later use, such as a database table or a membership form. Each data store receives a simple label, such as "Orders."
- Data flow: the route that data takes between the external entities, processes and data stores. It portrays the interface between the other components and is shown with arrows, typically labeled with a short data name, like "Billing details."

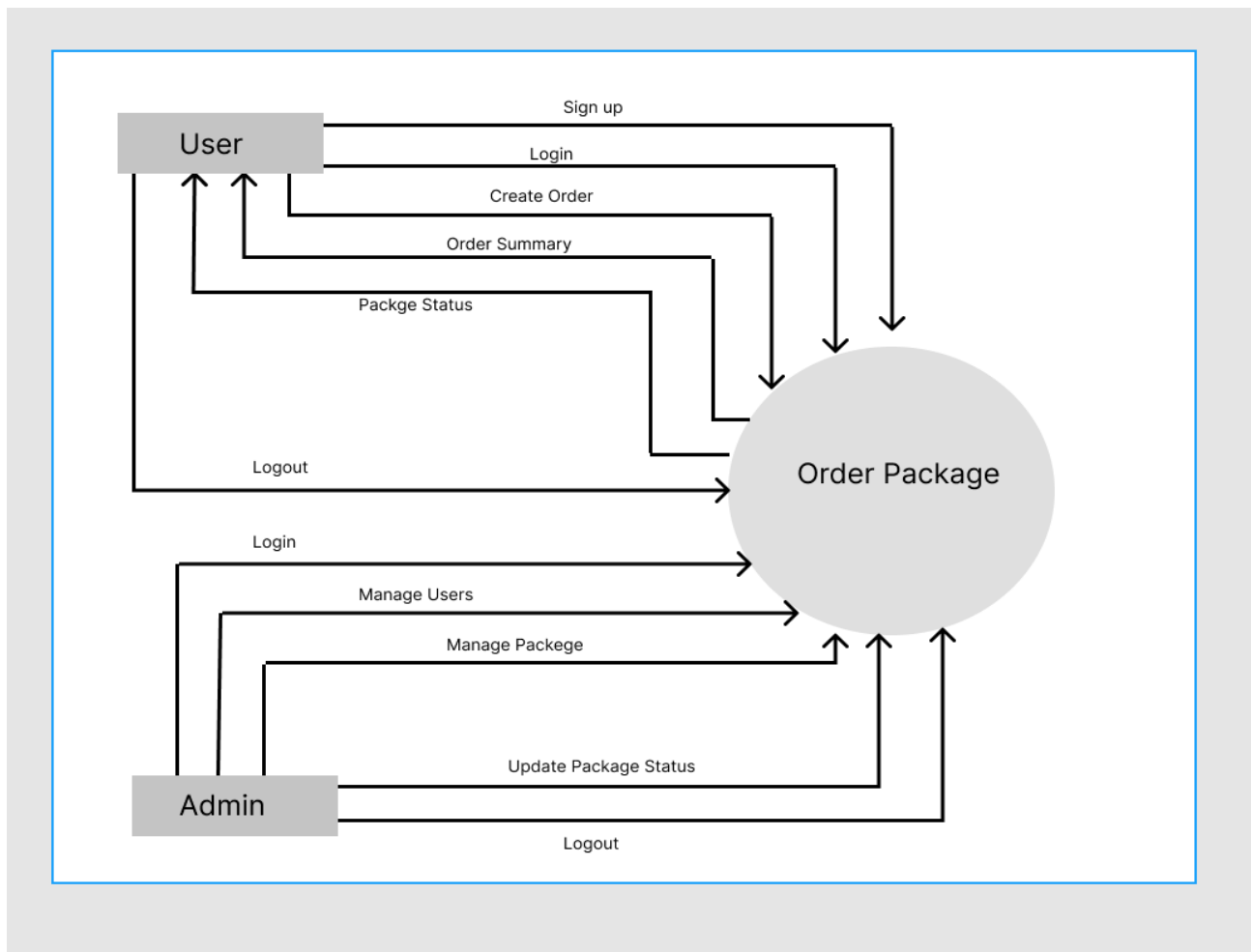


Figure 3. Data Flow Diagram

3.6.3 ER diagram

Entity relationship diagrams provide a visual starting point for database design that can also be used to help determine information system requirements throughout an organization. After a relational database is rolled out, an ERD can still serve as a reference point, should any debugging or business process re-engineering be needed later.

However, while an ERD can be useful for organizing data that can be represented by a relational structure, it can't sufficiently represent semi-structured or unstructured data. It's also unlikely to be helpful on its own in integrating data into a pre-existing information system.

There are five basic components of an entity relationship diagram. Similar components will be designated by the same shape. For example, all entities types might be enclosed in a rectangle, while all attributes are enclosed in a diamond. The components include:

1. Entities, which are objects or concepts that can have data stored about them. Entities refer to tables used in databases.
2. Attributes, which are properties or characteristics of entities. An ERD attribute can be denoted as a primary key, which identifies a unique attribute, or a foreign key, which can be assigned to multiple attributes.
3. The relationships between and among those entities.
4. Actions, which describe how entities share information in the database.

5. Connecting lines

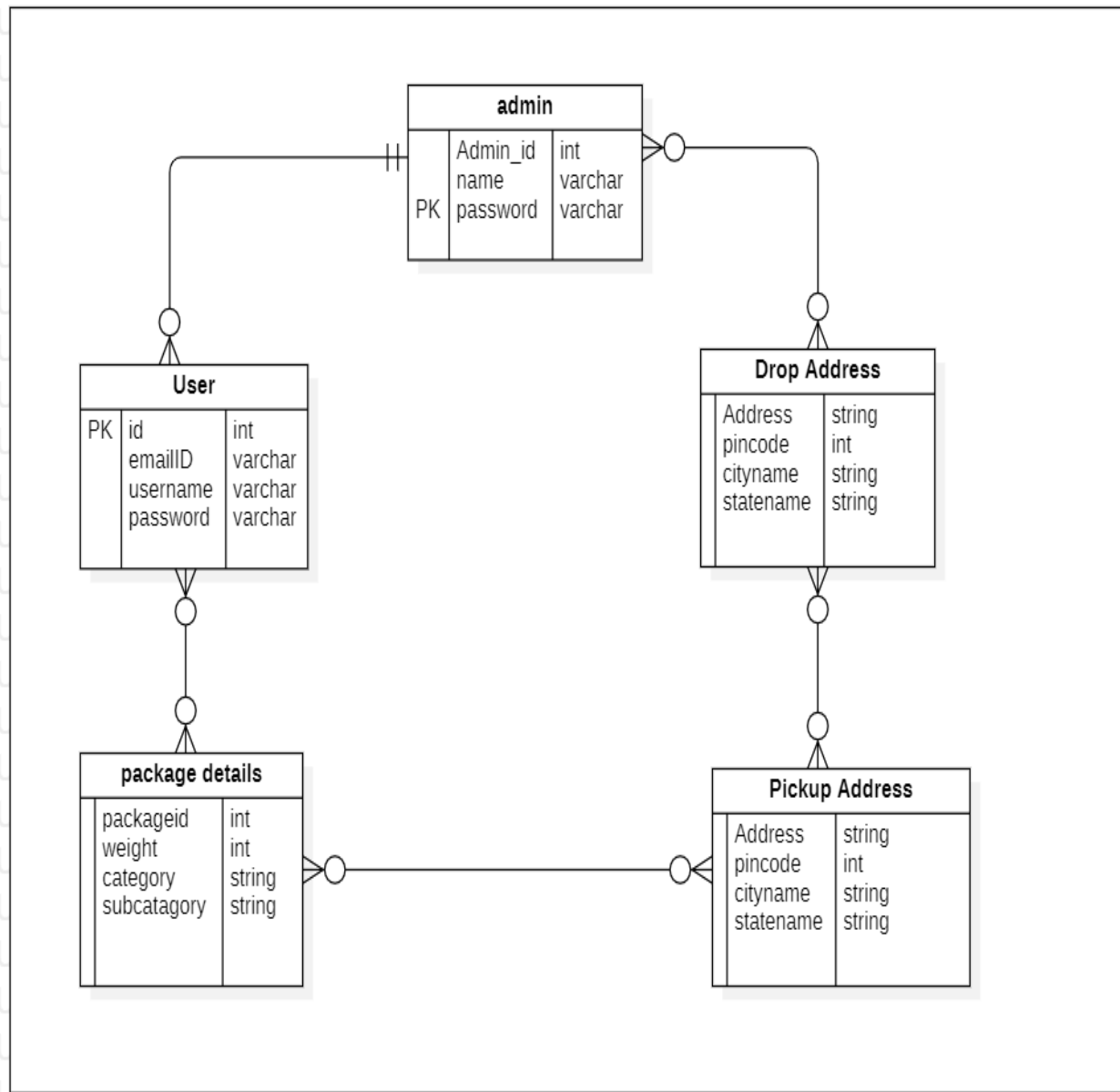


Figure 4 . ER Diagram

3.6.4 Use case Diagram

In UML, use-case diagrams model the behavior of a system and help to capture the requirements of the system.

Use-case diagrams describe the high-level functions and scope of a system. These diagrams also identify the interactions between the system and its actors. The use cases and actors in use-case diagrams describe what the system does and how the actors use it, but not how the system operates internally.

- Use cases

A use case describes a function that a system performs to achieve the user's goal. A use case must yield an observable result that is of value to the user of the system.

- Actors

An actor represents a role of a user that interacts with the system that you are modeling. The user can be a human user, an organization, a machine, or another external system.

- Subsystems

In UML models, subsystems are a type of stereotyped component that represent independent, behavioral units in a system. Subsystems are used in class, component, and use-case diagrams to represent large-scale components in the system that you are modeling.

- Relationships in use-case diagrams

In UML, a relationship is a connection between model elements. A UML relationship is a type of model element that adds semantics to a model by defining the structure and behavior between the model elements.

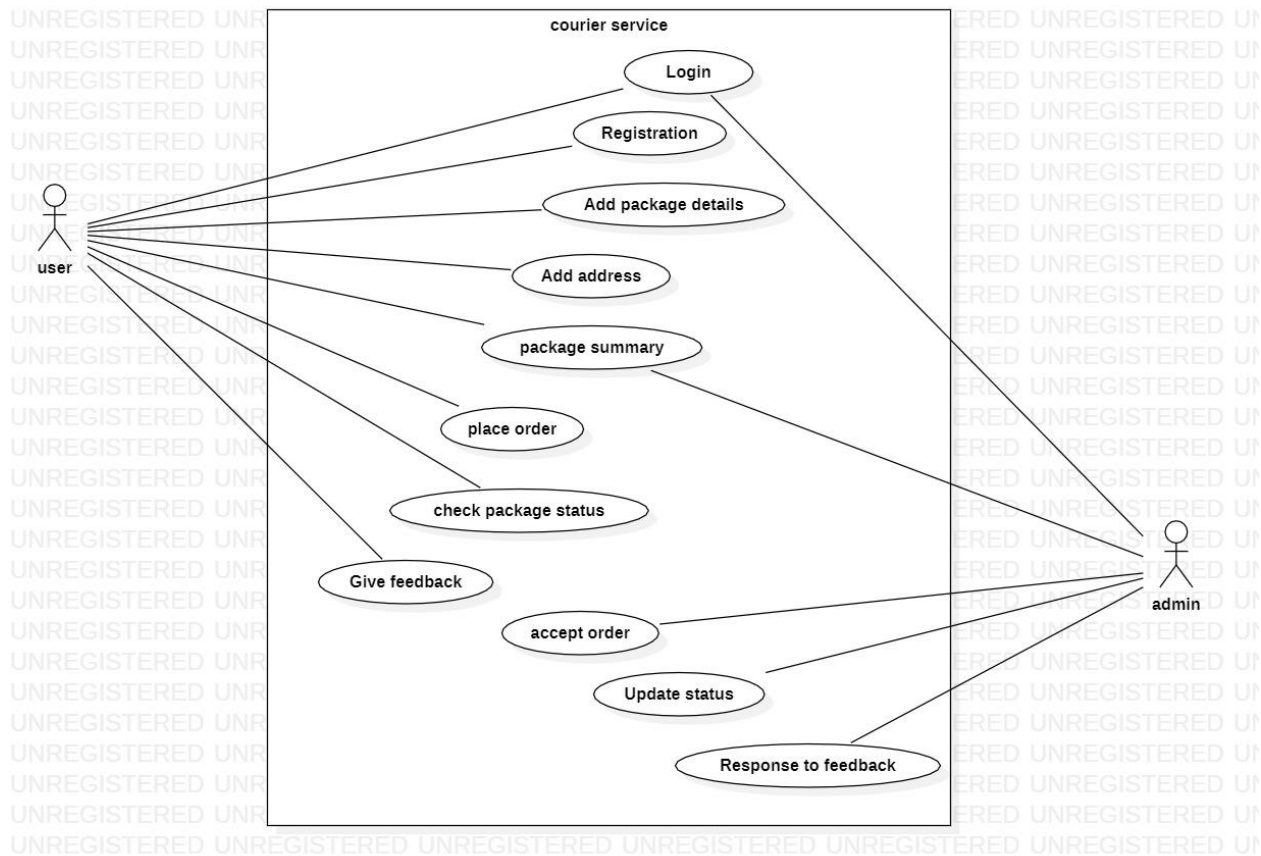


Figure 5 . Use-case Diagram

The above use case diagram actor user can create the account by using registration. Add the details of the package along the address from which the package has to pickup and drop. And user can place order after adding the details. User can check status of the package by using check package status feature. Admin actor can check the details add by the user and also edit it. Admin can accept the order. And update the status of the order.

3.6.5 Activity Diagram

An activity diagram shows business and software processes as a progression of actions. These actions can be carried out by people, software components or computers. Activity diagrams are used to describe business processes and use cases as well as to document the implementation of system processes. Even the most complex progressions can be visualized by activity diagrams. Sequential and peripheral workflows are depicted by control and object flows. Activity diagrams represent activities that are made up by a flow of actions.

Activity diagrams can be used in many different situations. In addition, various relationships between activity diagrams and other UML diagrams can exist. Activity diagrams are well suited to visualizing models of procedures and their management. Activity diagrams illustrate the individual steps in activities as well as the order in which they are presented. They can be used for a range of functions: from the modelling of business processes all the way through to the depiction of control flows. Activity diagrams can be used anywhere where behavior needs to be described or where control flows need to be modelled.

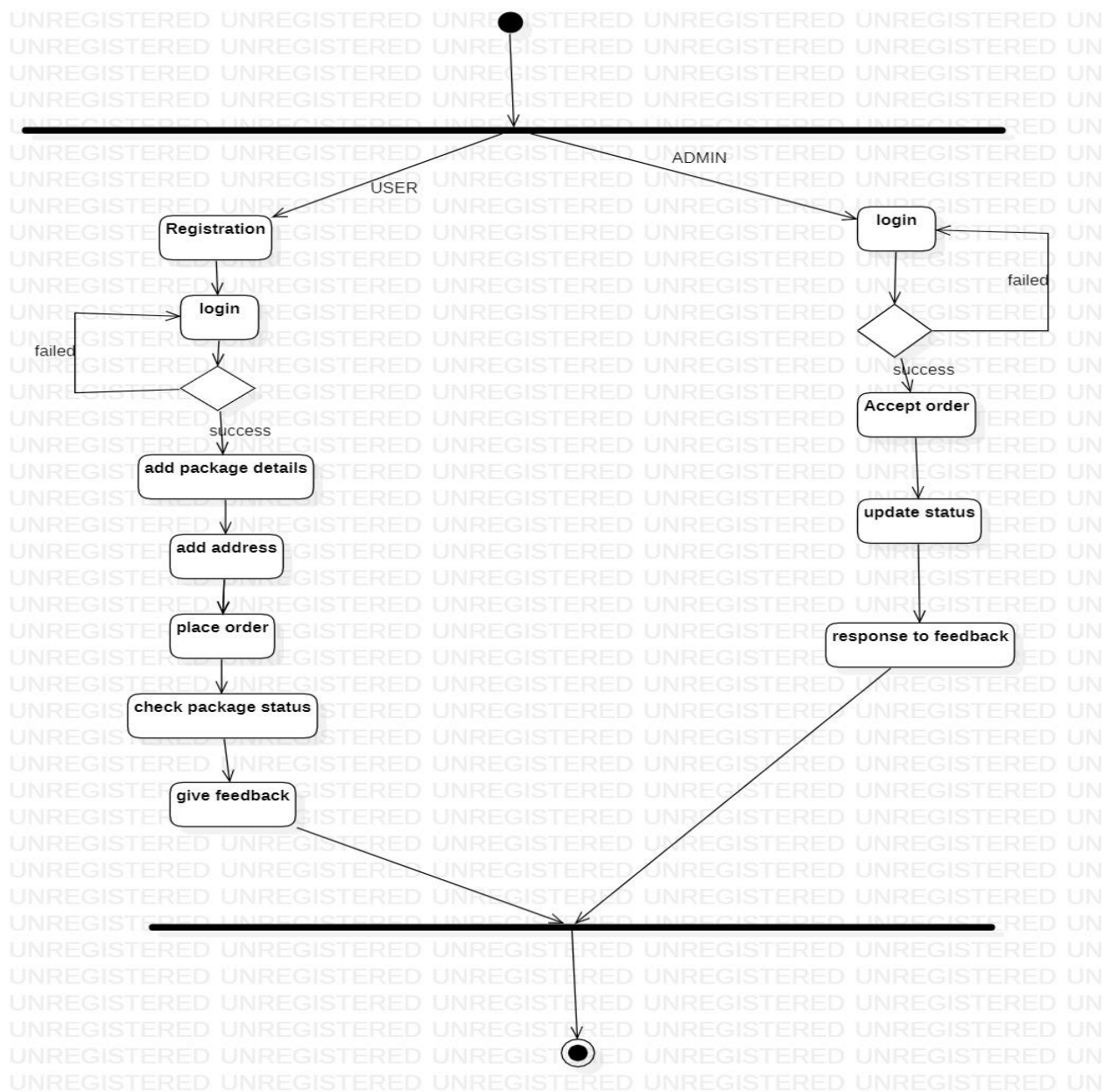


Figure 6 . Activity Diagram

Above activity shows the activities for by admin and user. In which admin can do activities such as accept the order by checking the details of the order. And update the status of the package by changing the current situation of the package. Admin can also has to give response to the feedback of the user. User has activities such as adding the details of the package, address of the pickup and drop location. He can also check the status of the package and according to the experience he can give feedback.

3.6.6 Sequence Diagram

UML Sequence Diagrams are interaction diagrams that detail how operations are carried out. They capture the interaction between objects in the context of a collaboration. Sequence Diagrams are time focus and they show the order of the interaction visually by using the vertical axis of the diagram to represent time what messages are sent and when.

Purpose of Sequence Diagram

- Model high-level interaction between active objects in a system
- Model the interaction between object instances within a collaboration that realizes a use case
- Model the interaction between objects within a collaboration that realizes an operation
- Either model generic interactions (showing all possible paths through the interaction) or specific instances of a interaction (showing just one path through the interaction)

Sequence Diagram for user

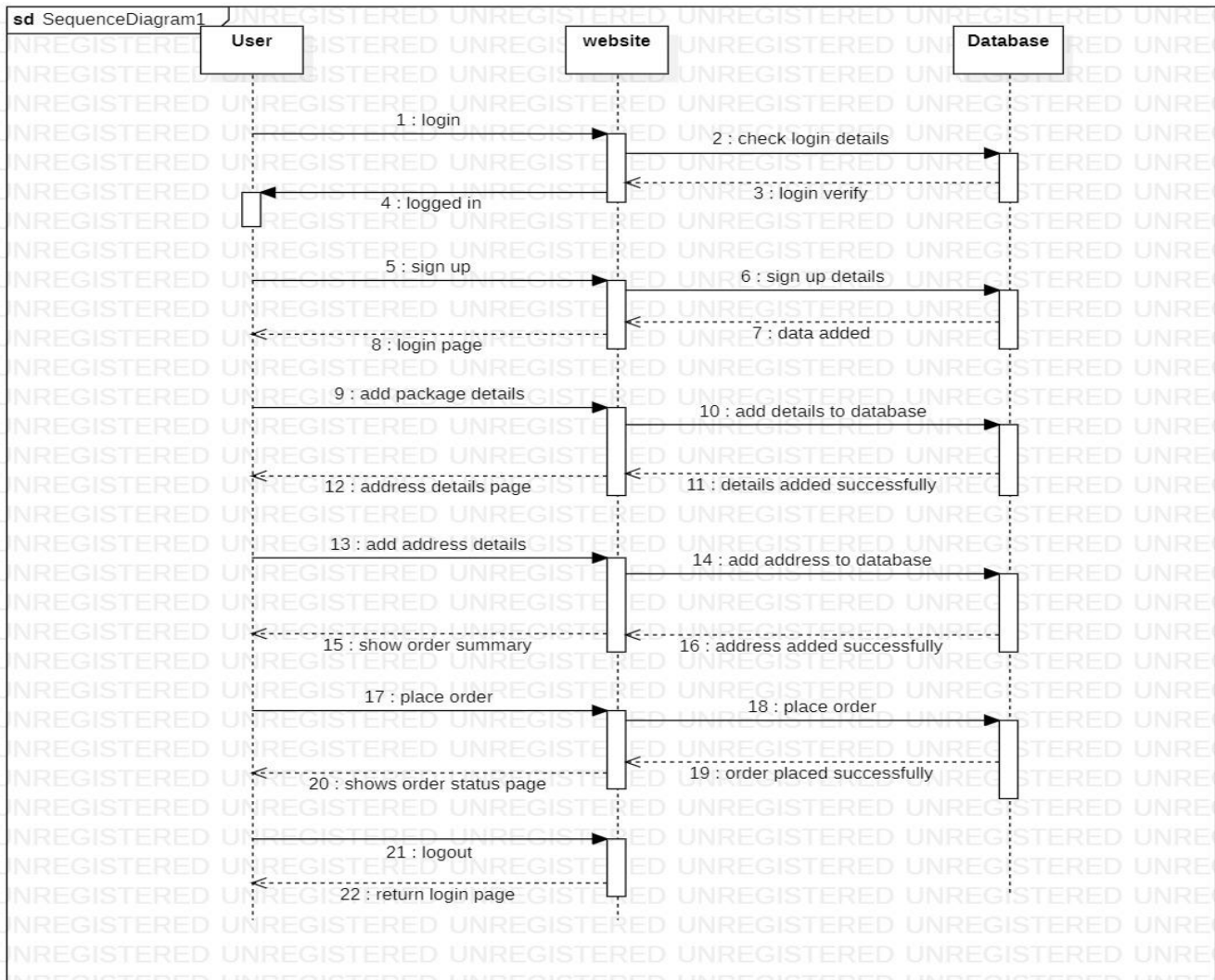


Figure 7. Sequence Diagram for User

Above diagram is a user's sequence diagram which shows the interaction between user and the website. User login with the credentials and if the values are correct the website will logged in the user. Where user can add details and address for the package. And user can request to confirm order to approve the order. And after user fills the required details and place order he can logout from the website.

Sequence Diagram for admin

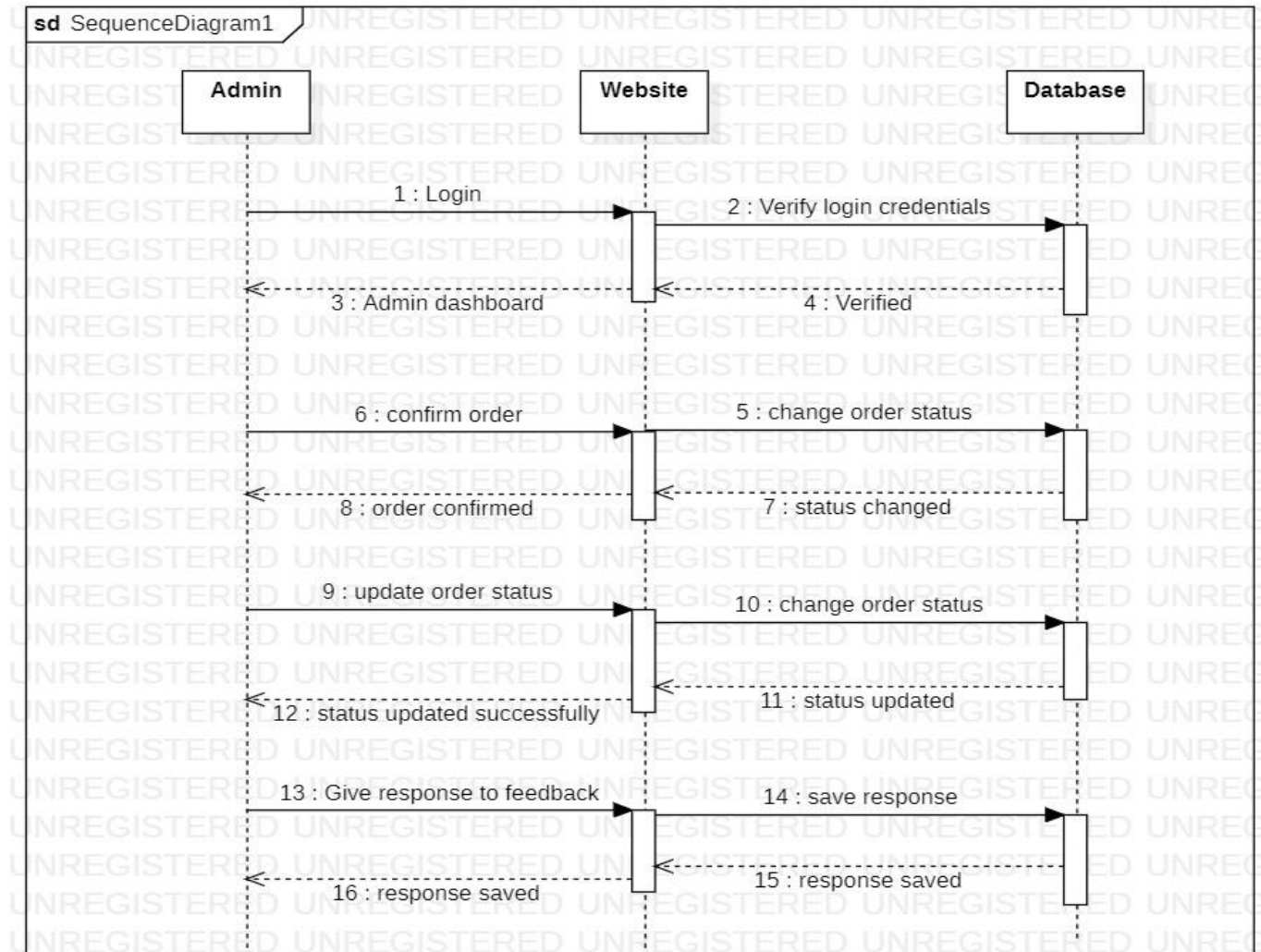


Figure 8 . Sequence Diagram for Admin

Above is sequence diagram for the admin of the website. It shows the interaction between the admin and the website. Admin login with the credentials and if the values are correct the website will logged in the admin. Where user can accept the order requested by the users by checking the package details. Admin can also manage the user. Admin has to update the status of the package time to time.

3.6.7 Class Diagram

The class diagram depicts a static view of an application. It represents the types of objects residing in the system and the relationships between them. A class consists of its objects, and also it may inherit from other classes. A class diagram is used to visualize, describe, document various different aspects of the system, and also construct executable software code.

It shows the attributes, classes, functions, and relationships to give an overview of the software system. It constitutes class names, attributes, and functions in a separate compartment that helps in software development. Since it is a collection of classes, interfaces, associations, collaborations, and constraints, it is termed as a structural diagram.

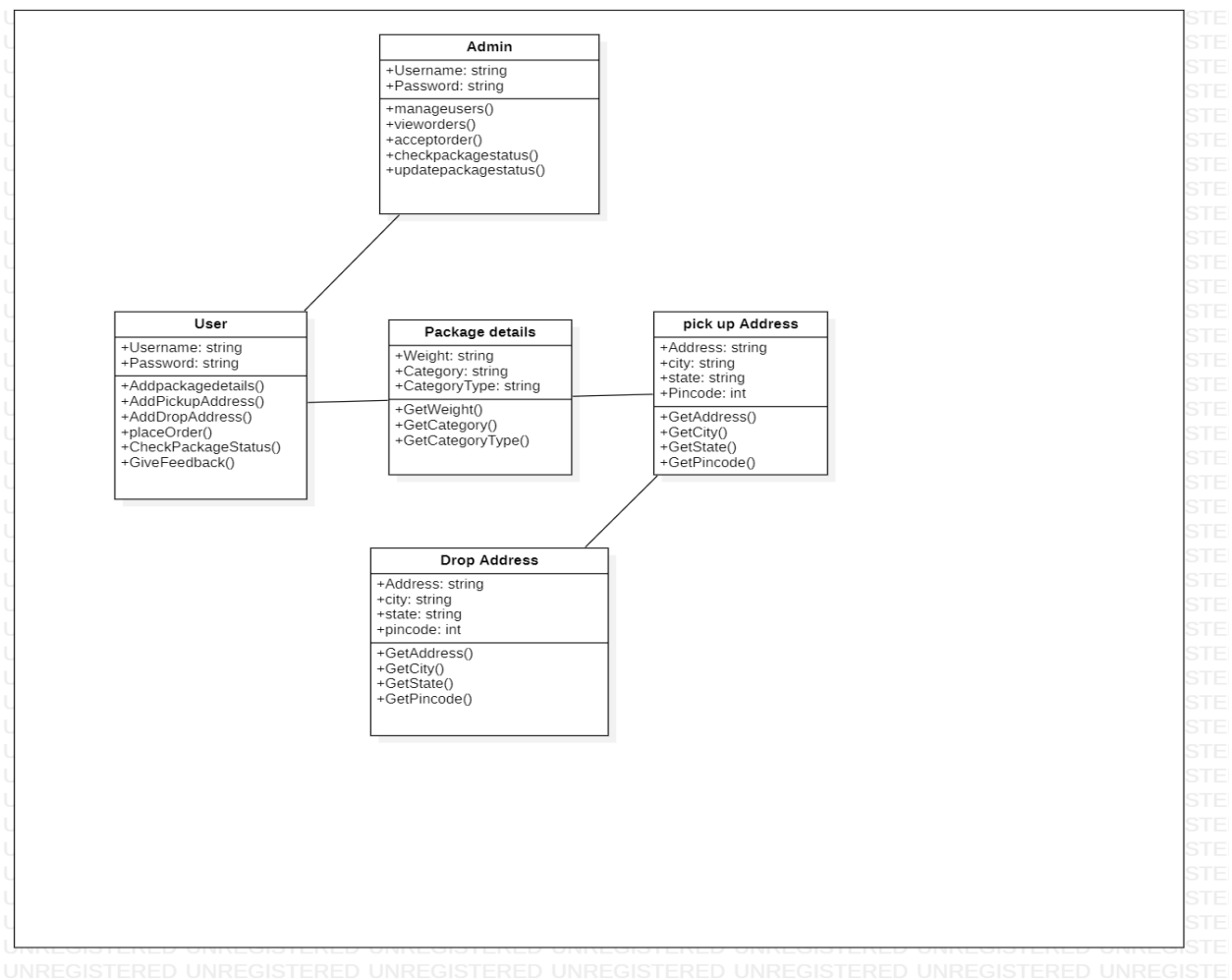


Figure 9 . Class Diagram

3.6.8 Object Diagram

Object is an instance of a class in a particular moment in runtime that can have its own state and data values. Likewise a static UML object diagram is an instance of a class diagram; it shows a snapshot of the detailed state of a system at a point in time, thus an object diagram encompasses objects and their relationships which may be considered a special case of a class diagram or a communication diagram.

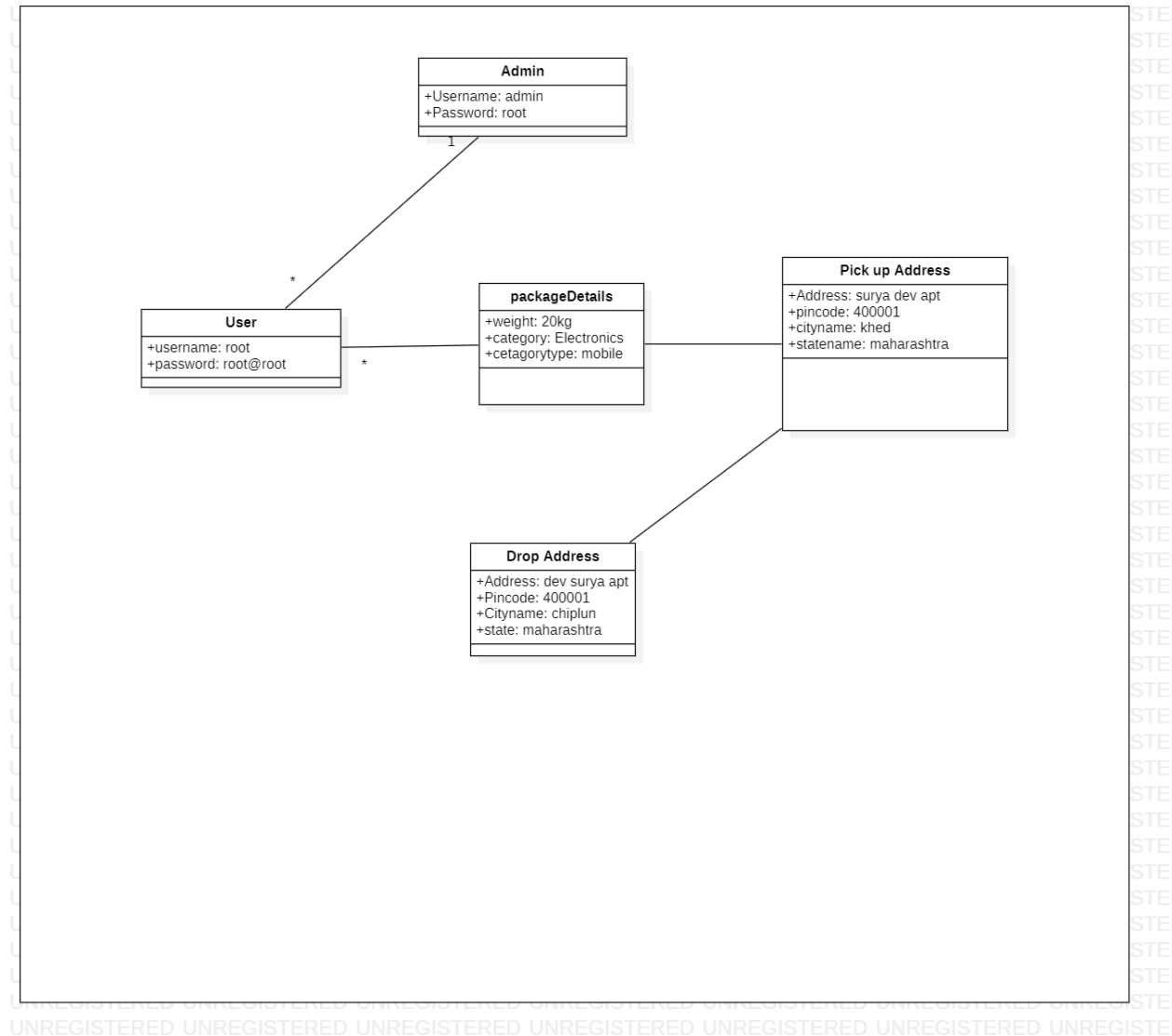


Figure 10. Object Diagram

3.6.9 Component Diagram

A component diagram, also known as a UML component diagram, describes the organization and wiring of the physical components in a system. Component diagrams are often drawn to help model implementation details and double-check that every aspect of the system's required functions is covered by planned development. In the first version of UML, components included in these diagrams were physical: documents, database table, files, and executables, all physical elements with a location. In the world of UML 2, these components are less physical and more conceptual stand-alone design elements such as a business process that provides or requires interfaces to interact with other constructs in the system.

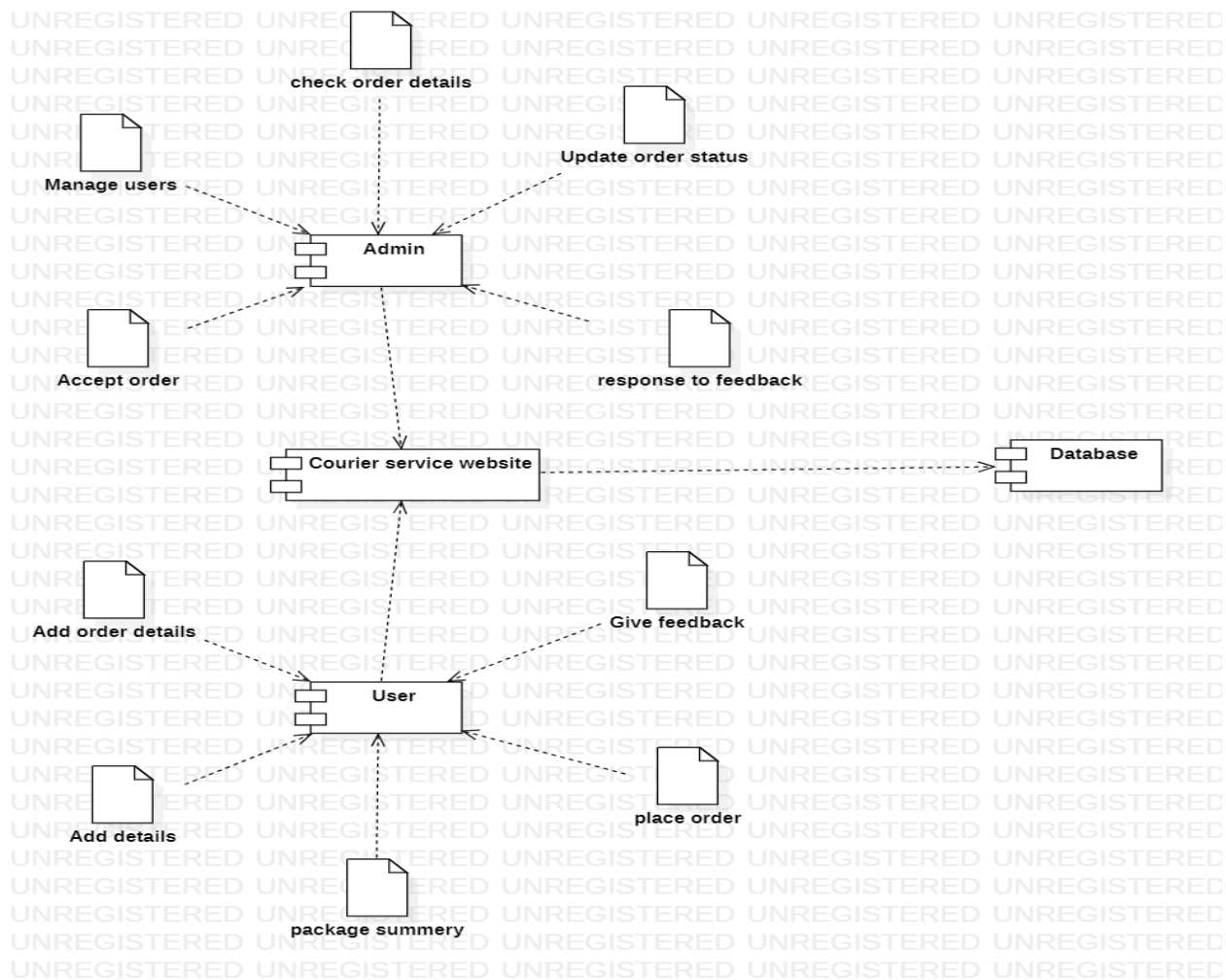


Figure 11 . Component Diagram

3.6.10 Deployment Diagram

Deployment diagrams are used to visualize the topology of the physical components of a system, where the software components are deployed.

Deployment diagrams are used to describe the static deployment view of a system. Deployment diagrams consist of nodes and their relationships.

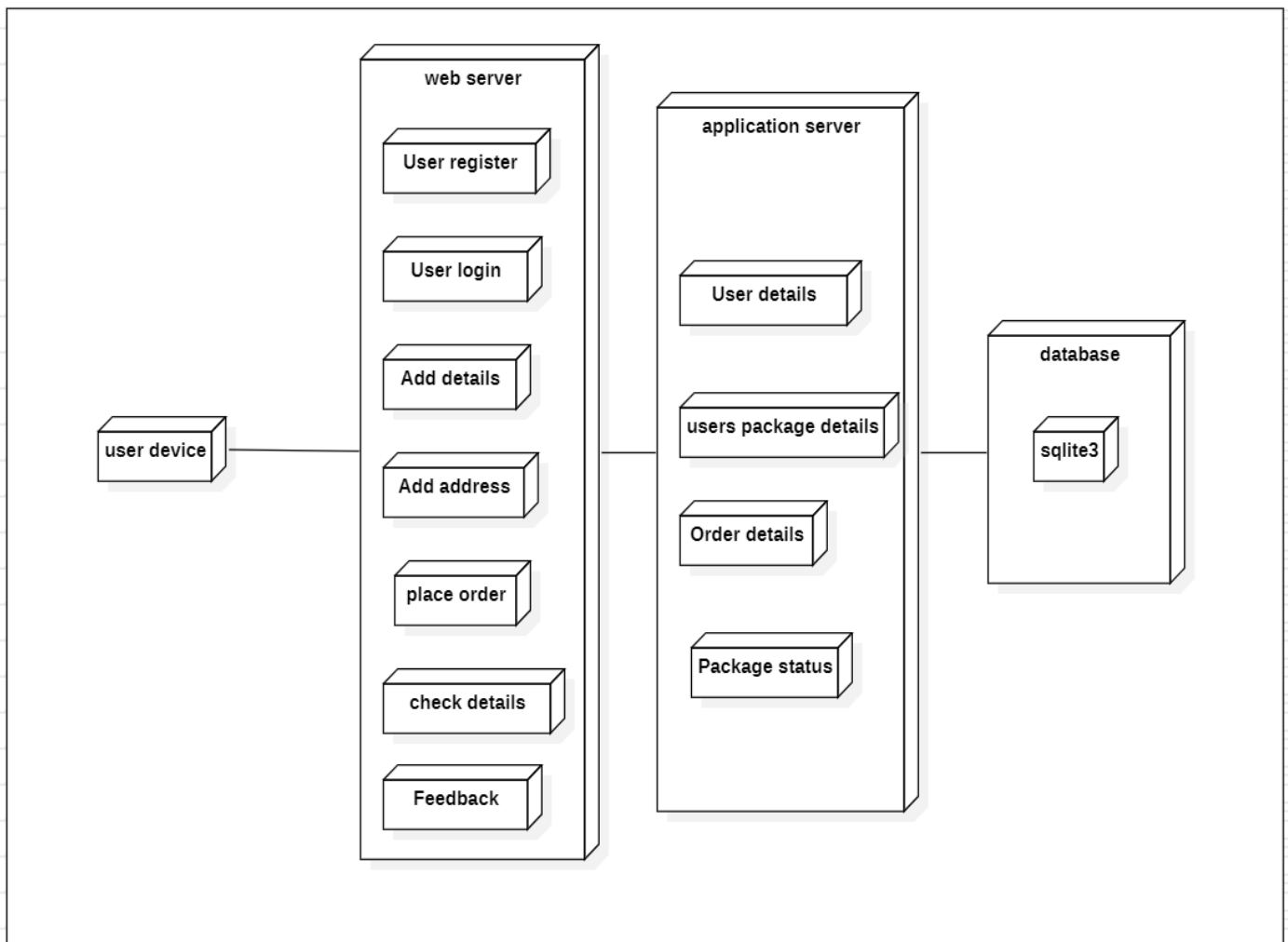


Figure 12 . Deployment Diagram

Chapter 4

SYSTEM DESIGN

4.1 Basic Modules

The system after careful analysis has been identified to present itself with the following modules:

Home Page

User can use home page to go to various page of the website such as login, registration, about us, give feedback etc. There is also field which user can use to track the package by using tracking id given when user places the order.

User registration

User who wants to courier a package he has to open an account in the website by registering in the website. In which he has to fill the personal details such as username, email, phone number. And set a password for the account.

User login

User can login to the website by using the credentials filled in registration field. And if the credentials given by user are valid he gets redirect to the dashboard of the website where he can use the further details.

Package details

In this module user can add the details of the package such as weight of the package. User can select the category of the package and according to that he can select the sub category.

Pick up and drop address

User can add the pickup and drop address of the package to be delivered. In which user has to give the details of pincode, city and state of the pickup and drop destination.

Package summary

In this module user gets the all the details filled along with the price to pay

Package tracking

In package tracking user can track the package by using the tracking id given to the user which is given when he places the order. In which he gets the time to time updates of the package.

Admin

Admin can manage the users of the website. Accept the order by viewing details of the package. And update the status of the package time to time

4.2 Data Design

4.2.1 Schema Design

User schema

Column Name	Datatype	Constraints
User_id	Integer	Primary key, Not Null and Unique
Username	String	Not Null and Unique
password	String	Not Null and Unique
Email	Varchar	Not Null and Unique

Table 1. User schema

Admin schema

Column Name	Datatype	Constraints
Admin_id	Integer	Primary Key, Not Null and Unique
Username	String	Not Null and Unique
Password	String	Not Null and unique
Order_id	Integer	Not Null
Package_id	Integer	Not Null

Table 2. admin schema

Package schema

Column Name	Datatype	Constraints
Package_id	Integer	Primary Key, Not Null and Unique
Weight	Integer	Not Null
Category_type	String	Not Null
Sub_catagory	string	Not Null

Table 3. Package schema

Pickup Address schema

Column Name	Datatype	Constraints
Pickup_address	string	Not Null
City_name	String	Not Null
State_name	String	Not Null

Pincode	integer	Not Null
---------	---------	----------

Table 4. Pickup address schema

Drop address schema

Column Name	Datatype	Constraints
Drop_address	string	Not Null
City_name	String	Not Null
State_name	String	Not Null
Pincode	integer	Not Null and unique

Table 5. Drop address schema

4.2.2 Data Integrity and Constraints

Data integrity refers to the overall accuracy, completeness, and reliability of data. Data integrity is preserved by an array of error-checking and validation procedures, rules, and principles executed during the integration flow designing phase. These checks and correction procedures are based on a predefined set of rules.

The reason we need data integrity is because, for instance, we may not want data in the database to have repeating values or not follow a particular pattern or break relationships between schemas.

Constraints:

Data Integrity can be maintained using constraints. These constraints define the rules according to which the operations like updation, deletion, insertion etc. have to be performed to maintain the data integrity. There are usually three types of Data Integrity:

1. Domain Integrity: Domain refers to the range of acceptable values. It refers to the range of values that we are going to accept and store in a particular column within a database. The data types available are mainly integer, string, date etc. Any entry which we make for a column should be available in the domain of the data type.
2. Entity Integrity: Each row for an entity in a table should be uniquely identified i.e. if some record is saved in the database then that record should be uniquely identified from others. This is done with the help of primary keys. The entity constraint says that the value of the primary key should not be null and must be unique. If the value of the primary key is null then we can't uniquely identify the rows if all other fields are the same. Also, with the help of primary key, we can uniquely identify each record.
3. Referential Integrity: Referential Integrity is used to maintain the data consistency between two tables. Rules are made in the database structure about how foreign keys should be used to ensure that changes, addition and deletion in the database maintain the data integrity. The referential integrity constraints state that if a foreign key in the first table refers to the primary key of the second table then every value of foreign key in the first table should either be null or present in the second table.

4.2 Event Table

-Sr No.	Event	Trigger	Source	Activity	Response	Destination
1.	Admin visits the website	Required to enter Login details	Admin	Verify Login credentials	Login Page	Database
2.	Admin request to login into the website	Request for Login	Admin	Verify username and password	Dashboard of admin	Database
3.	Admin request to view user details	Request for Main Page	Admin	User details	Fetch Main page	Database
4.	Admin request select a user package details	Request for User package details	Admin	Package details	User package details	Database
5.	Admin request to change package details	Edit details for package	Admin	Package details	Details Updated Successfully	Database
6.	Admin request to accept order	Request for package accept page	Admin	Accept orders	Order accepted	Database
7.	Admin request to manage user	Edit details for update user profile	Admin	user Profile details	Updated Successfully	Database
8.	Admin requests change status	Request for Product page	Admin	Product Details	Product Page	Database
9.	Admin requests to view feedback	Request to View feedback	Admin	View feedback	feedbacks	Database

10.	Admin requests to response feedback	Request to response	Admin	feedback	Feedback response	Database
11.	User visits the website	Required to enter Login details	User	Verify user	Login page	Database
12.	User enters the credentials	Request to login	User	Verify Login credentials	Users dashboard	Database
13.	User fills the package details	Request for fill package details	User	Package details	Filled package details	Database
14.	User fills the pickup and drop address	Request for fill address	User	Pickup and drop address	Filled pickup and drop address	Database
15.	User request to get price	Request for order price	User	Order price	Order price	Database
16.	User requests to place order	Request for summary	user	View order details	Package summary	Database
17.	User requests to track package	Request to track package	user	View package status	Status page	Database
18.	User request to give feedback	Request to give feedback	User	feedback	Feedback filled	Database
19.	User requests for Logout	Request for Logout	Seller	User Logged out	Login/Home Page	Database

Table 6. Event Table

4.4 User Interface Design

Home page

This is the home page of the website where user can sign up or login to the website.

Here user can directly track the package by entering the tracking id provided when user places a order.

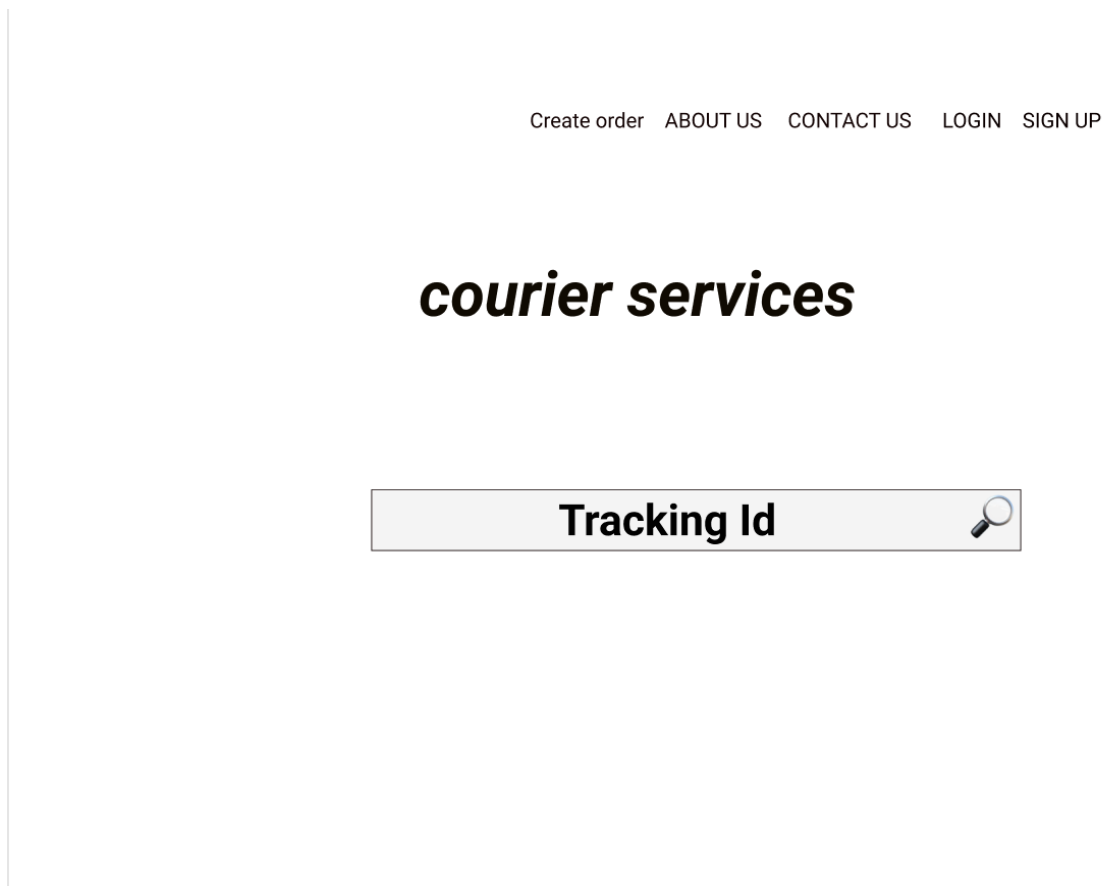



Figure 13 . Home Page

Sign up page

User can use this page to register himself in the website by entering his details in order to create an account in the website.

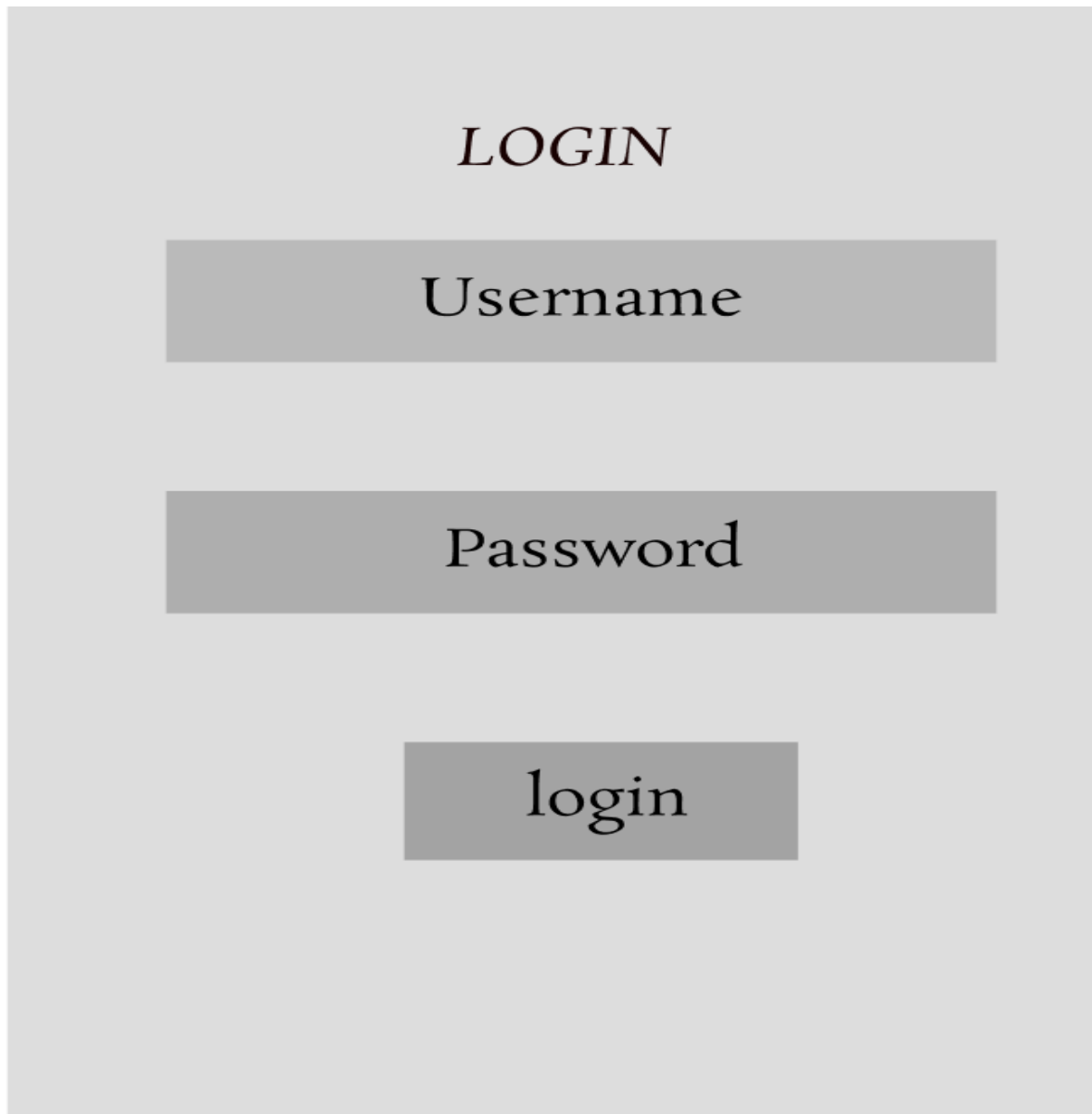


The image shows a sign-up form layout on a light gray background. The form consists of several gray rectangular input fields arranged vertically. At the top, the text *sign up* is displayed in a dark, italicized font. Below it are four input fields with the labels **username**, **Email**, **Password**, and **confirm password** in bold black text. At the bottom of the form is a gray button with the text *Sign up* in a dark, italicized font.

Figure 14 . sign up Page

login page

This is login page of the website where user can login by entering the users email and password.



LOGIN

Username

Password

login

Figure 15 . sign in Page

Package details page

User can select the weight of the package he want o deliver along with the cataory and the sub-category of the package. User can add the pickup and drop address for the package. User has to also select the state and city of both address along with the pincode.

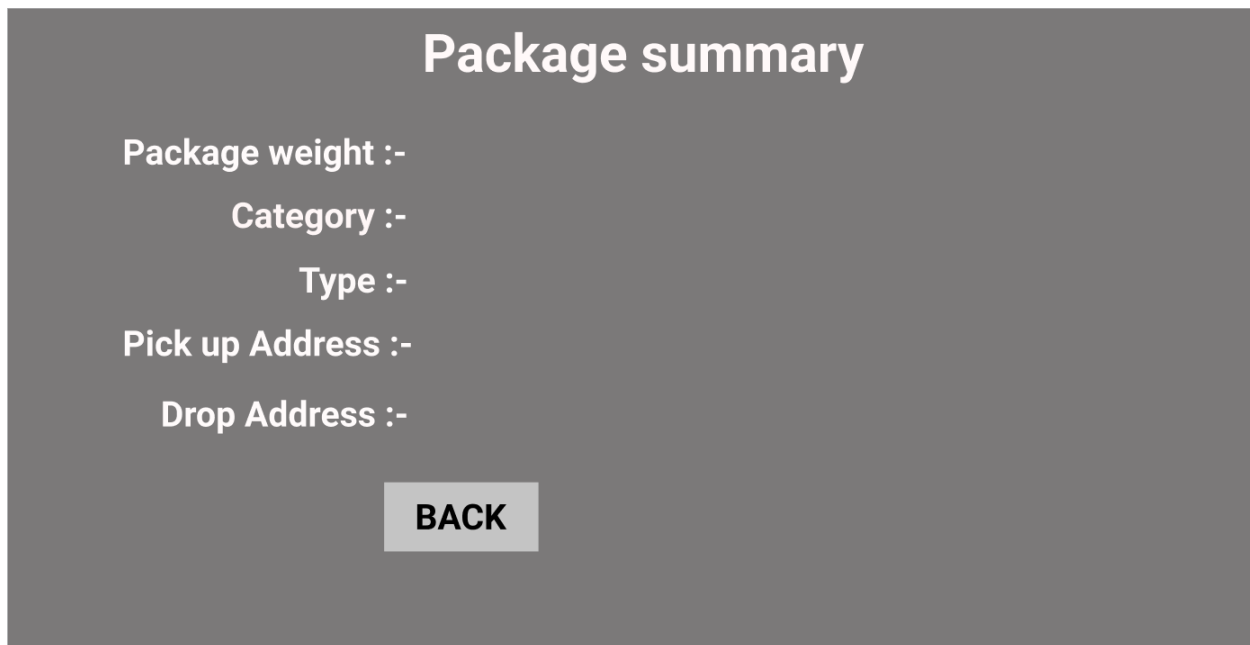
PACKAGE DETAILS

weight	Category
<input type="text"/>	<input type="text"/>
Type	
<input type="text"/>	
City	Pincode
<input type="text"/>	<input type="text"/>
State	Address
<input type="text"/>	<input type="text"/>
City	Pincode
<input type="text"/>	<input type="text"/>
State	Address
<input type="text"/>	<input type="text"/>
ADD	

Figure 16 . package details Page

Package summary page

User can view all the details they have entered on previous pages and place the order.

A screenshot of a 'Package summary' page. The title 'Package summary' is at the top right in white. Below it, on the left, are labels for 'Package weight :-', 'Category :-', 'Type :-', 'Pick up Address :-', and 'Drop Address :-'. Each label is followed by a large, empty text input field. At the bottom center, there is a grey button with the text 'BACK' in black.

Package summary

Package weight :-

Category :-

Type :-

Pick up Address :-

Drop Address :-

BACK

Figure 17 . summary Page

Package status page

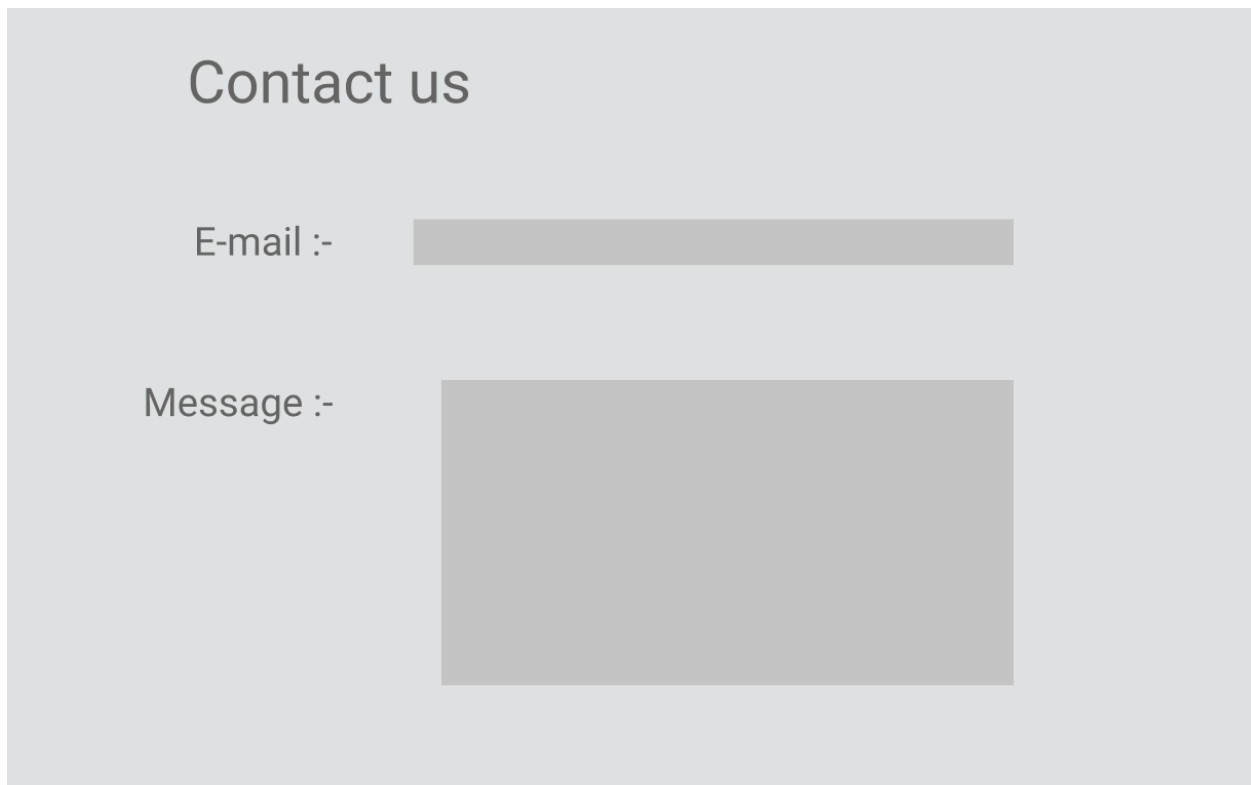
User can track the package when he has successfully placed the order.



Figure 18 . Tracking Page

Contact page

Here user can contact to the owner by entering the email and the message he want to sent.



The image shows a contact form on a light gray background. At the top, the text 'Contact us' is displayed in a large, dark gray font. Below this, there are two input fields. The first field is labeled 'E-mail :-' in a dark gray font, followed by a horizontal gray rectangle representing the input area. The second field is labeled 'Message :-' in a dark gray font, followed by a larger vertical gray rectangle representing the input area for a message.

Figure 19 . Contact us Page

About us page

Here user can get the information of the website such as the address of the main office and the company mail.



Figure 20 . About us Page

4.5 Security Issues

Security requirements must cover both overt functional security and developing characteristics. One great way to cover the developing security space is to build test cases. Test cases describe the system's behavior under attack; building them requires explicit coverage of what should be protected, from whom, and for how long.

A system is said to be secure if its resources are used and accessed as intended under all the circumstances, but no system can guarantee absolute security from several of the various malicious threats and unauthorized access.

Security of a system can be threatened via two violations:

Threat: A program which has the potential to cause serious damage to the system.

Attack: An attempt to break security and make unauthorized use of an asset.

4.6 Test Cases Design

Index	Test case	Test data	State	Test input value	Expected result
1	The username should be only in characters (A-Z) and (a-z).	Alphabets A-Z and a-z	Invalid	Abcdef	Username must contain numbers.
	Alphabets A-Z and a-z and numbers	Alphabets A-Z and a-z and numbers	Valid	Abcd01	Username accepted
2	The password should be minimum 8 characters or more.	Only alphabets.	Invalid	abcd	Password must be minimum 8 character including special character.

		Alphabets and special characters and numbers	Valid	abcd@1234	Successful
3	Contact number should be 10 digits only.	Characters or numbers less than 10 or more than 10 digits.	Invalid	12f4tg643	Contact number should be 10 digits only.

		Numbers between 0-9	Valid	9988776655	Contact number accepted
4	The Address should be in proper format.	Address without alphabets and digits.	Invalid	test	Enter the correct address.

		Should consist of alphabets A-Z or a-z and digits.	Valid	C-32,Seaview Apt. Marine Lines, Mumbai.	Accepted
5	The email id should be in proper format.	Id without special character and alphabets.	Invalid	123gmail	Enter proper email id.
		Alphabets and special character.	Valid	abcd@gmail.com	Accepted

Table 7. Test Case

