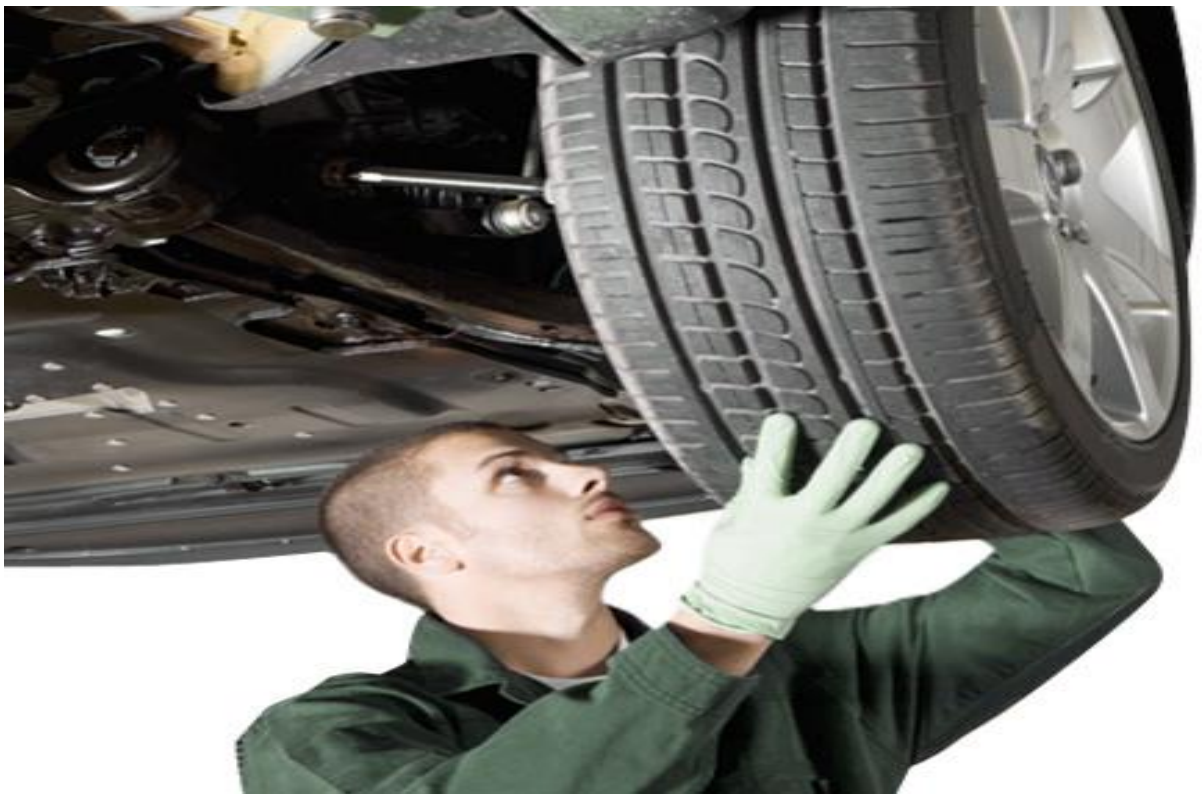


PROPOSAL DOCUMENT:

MECHANIC_INSURANCE SYSTEM



NAME OF SYSTEM

Mechanic_Insurance System

DOMAIN ANALYSIS

Mechanic_Insurance system is designed to help mechanics and insurance companies to work together to make it easy for customers, mechanics, and insurance companies to handle the process of fixing the vehicle including booking, payment and collection of a vehicle. Mechanic Shop can partner with insurance companies, customers who are not insured in one of insurance companies partnered with a mechanic shop may have another option to pay with cash.

Booking for appointments to fix a vehicle can be done in one of three ways, the first one a customer can book him/herself via Mechanic Shop website, second one Insurance company can book on behalf of their client and the last one mechanic can book for walk-ins customers in premises.

This system makes life easier for customers, where they won't have to take their cars themselves to Mechanic Shop but they can just simply use the system and request for a mechanic to fix it on the spot if touring is needed it shall be done. The system also simplifies the work of mechanics and insurance companies by putting every process together in one system rather than to work with mechanics and insurance systems separately.

Mechanics who are admins can be allowed to add a new mechanic or insurance in the system so that they can have a registration number to use when registering to the system. New bookings can be rejected and accepted by mechanics who are admins, and when booking is accepted it is automatically assigned as a new car in the system so that all mechanics can view it and take that job if the mechanic has the skill to fix that particular problem. Vehicle can be automatically under consideration after the mechanic takes the job, and the system also automatically updates the vehicle as pending payment after the mechanic sends an invoice to insurance or an individual customer. Insurance companies can only view their insured vehicles/clients and send proof of payment after receiving an invoice from the mechanic who fixed the vehicle. Admin is the only one who ends the process by confirming proof of payment and assigning the vehicle as ready to collect or collected.

PROBLEM DEFINITION

The system is in response to people having to wait long queues to get their car fixed, time taken from sometimes a busy schedule of the day or not having the proper mechanic to resolve their challenges, leaving them to have to pay more money to go visit a different mechanic. The Mechanic_Insurance system will then assist users in every car related problem they have on the day that is best convenient for them, with selected qualified mechanics at their service.

SCOPE DEFINITION

A lot of people face numerous faults with their cars which not everyone can identify or even fix on their own. Getting to take your car to a proper car dealer shop costs a lot and some just tend to be busy to a point where it takes a lot of time from an individual's day. This, in today's environment may prove to be a bit of a tedious process as everyone is busy and there's hardly time to fit in 30 minutes, 45 minutes an hour or even more of being away from work or your day to day life doing nothing to stand in a queue to see a mechanic.

With this system we aim to make it easier to resolve problems faster, accordingly, and conveniently working hand in hand with some of the insurance companies partnered with the system.

OBJECTIVE/VISION

The system is aimed at assisting users with the opportunity to be able to get the service they require when they want to fix their car. The user will access the system through their web browser and create an account if one is not created already. If they already have one, they will have to login using their email and password and then proceed to the menu page where they can either request assistance, book and/or check their profile. Mechanic will accept the request if they are available and selection of a form of payment will be included. Insurance companies will be able to login to check the Vehicle owner's profile and Mechanic will login as well to accept and submit receipts upon completion.

USERS OF THE SYSTEM

1. **Admin** - This user will be responsible to start and end the process of fixing vehicles by accepting or rejecting bookings and end the process by confirming payments and admin is the only one who can add new mechanics and insurance companies to the system.
2. **Mechanic** - This user is given the functionality to update the status of the vehicle as he/she is busy fixing the vehicle and sending the invoice to insurance company or uninsured clients after fixing it.
3. **Insurance Company** – This user can view all its clients in the system and is responsible to send proof of payment after receiving the invoice from the mechanic who fixed the vehicle.

MANDATORY FUNCTIONS

1. All users will be able to edit their profiles.
2. Admin user can add new mechanics and insurance companies
3. Only Admin user can delete or remove mechanic or insurance company
4. Mechanics can create an account to the system only when they have a staff number.
5. Insurance companies can create an account to the system only when it is already added and given a registration number.
6. Clients who are uninsured can book appointments themselves, insurance companies can book appointments on behalf of their clients and mechanics can also book appointments for clients.

7. All users can edit client or vehicle details.

FUNCTIONAL REQUIREMENTS

Event Table

Trigger	Event	Source	Use Case	Response	Destination
Book Appointment	Click on Book appointment	Admin, Mechanic, Insurance	Book Appointment	Booking confirmation	Admin
Accept Booking	Click on accept booking	Admin	Accept Booking	Car status changed to new car	Mechanic
Reject Booking	Click on reject booking	Admin	Reject Booking	Rejection report	Client or Insurance
Assign mechanic	Click on take job	Mechanic	Assign mechanic	Mechanic assigned	
Send Invoice	Click on Send Invoice	Mechanic	Send Invoice	Successful message	Client or Insurance
Send prof of payment	Click on send prof	Insurance	Send prof of payment	Successful message	Mechanic
Confirm payment	Click on confirm payment	Admin	Confirm payment	Car status changed to ready to collect	Client or insurance
Update status to collected	Click on collected	Admin	Update status to collected	Status updated	

NON-FUNCTIONAL REQUIREMENTS

Functionality

- a. The system shall log out after 30 minutes of inactivity.
- b. The system shall resist unauthorized usage.
- c. The system shall provide access to legitimate users.
- d. The access permissions for system data may only be changed by the system's database administrator.
- e. The system shall accept passwords that meet the designed password requirements.

Usability (UX)

- a. The system must make it easy for users to correct mistakes
- b. Users may change the theme colour to their colour choice.
- c. The interface will be neat, organized, and easy to work with.
- d. Web pages shall have a consistence design.
- e. Link addresses shall be in the same colour and font
- f. The system shall include a custom help screen for each screen.
- g. Web pages shall be built to detect the visitor's screen size, orientation and change layout accordingly.

Reliability

- a. System shall not fail more than once a day.
- b. System shall be recoverable
- c. No further requirements anticipated
- d. System shall be 100% accurate in the information entered by the user.

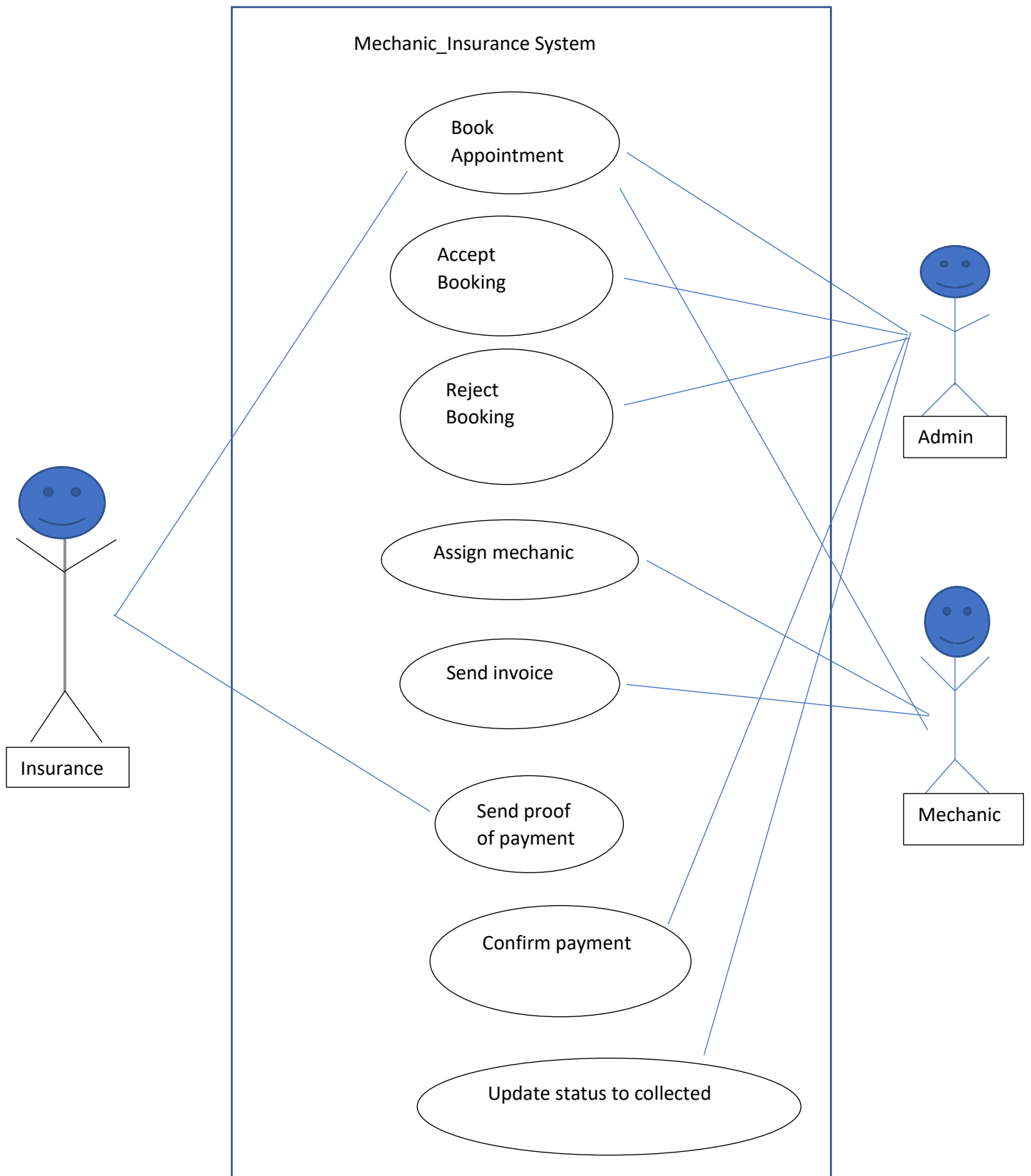
Performance

- a. The system shall respond in a timely manner
- b. The system's account management component shall support unlimited customer, account, and transaction time.

Supportability

- a. When a new version of the main system is released, it shall be possible to upgrade to it from any previous version.
- b. Installing an upgrade shall not modify existing configuration values.

USE CASE



TOOLS AND TECHNOLOGIES

- **FRAMEWORKS OR TECHNOLOGIES**

- Bootstrap

- jQuery

- Spring Boot

- Spring Data JPA and Hibernate (ORM)

- MySQL Database

- Spring Security

- **DevOps**

- AWS([S3](#))

- AWS SDK for JAVA

- **FRONT END**

- HTML and CSS

- JavaScript

- JSTL

- **BACK END**

- JAVA

- **DATABASE**

- SQL

- **SOFTWARE PROGRAMS**

- Java Development kit (JDK)

- Spring Tool Suite and [eclipse](#) IDE

- MySQL Community Server and MySQL Workbench

- TIBCO JasperSoft Studio