CSYE6200 Project

Motor Service Management

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Problem Statement

- Add and Manage Employees
  - Employee name, age, salary, credentials
  - Separate dashboard to login and access application
- Add and Manage incoming Clients
  - Client name, age, credentials
  - Report the required motor service jobs to the client
  - Separate dashboard to login and access application
- Add Mechanics
  - Mechanic name, age, credentials
  - Separate dashboard to login and access application
- Book appointment with mechanics to motor service jobs
- Maintain job service status
- Record the completed jobs

Build Instructions

Setting up the project, the dependencies and running it.

1. Open Apache NetBeans IDE 12.6
2. Go to File>Import Project>From ZIP. Select the project .zip and click Open.
3. If any Project Problems pops up resolve it using the following .jar files (Found in Jars folder of the project): **"mongo-java-driver-3.12.8.jar"**
4. Once the project is open, click on **Run Project** to start the application.
5. Start the mongo db server using:

   ```
   mongod
   ```

   Ensure that it is running on the assigned port 27017.

Packages & Libraries

Packages

- java.util
- javax.swing

Libraries

- "mongo-java-driver-3.12.8.jar"

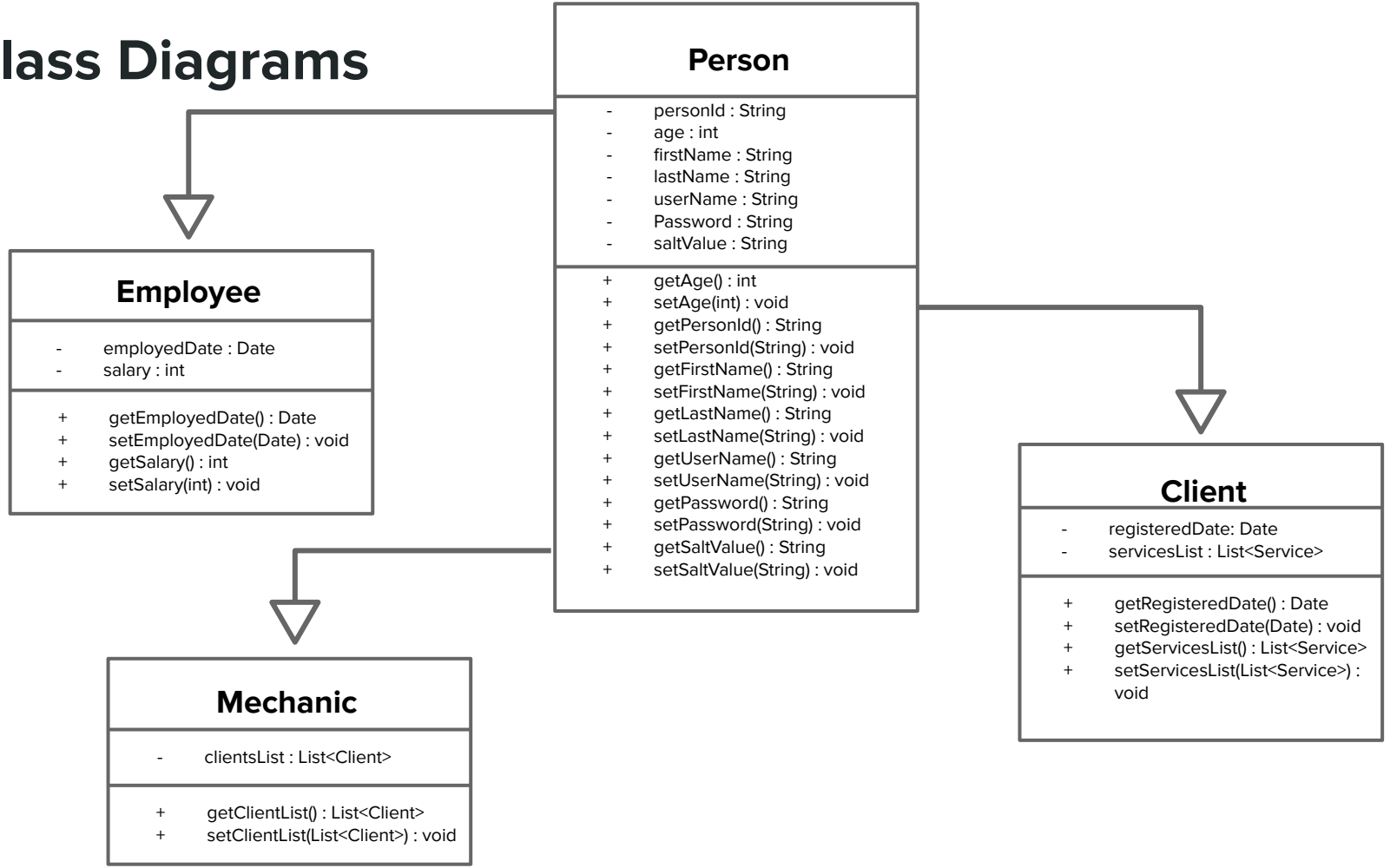
Design Features

- Collections
- Exception Handling
- Singleton Design Pattern
- Streams API
- Java Swing
- OOP Concepts
  - Inheritance
  - Polymorphism
  - Abstraction (private attributes and public methods)

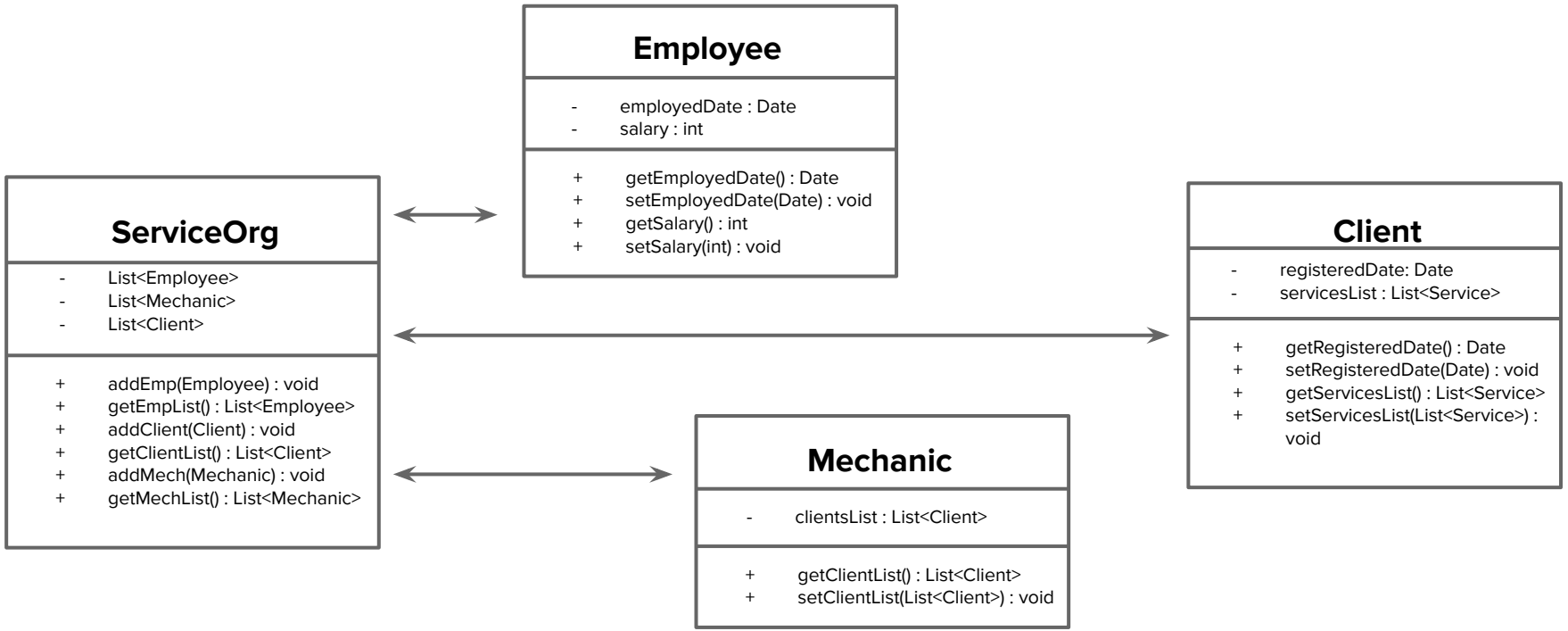
Class Hierarchy

- java.lang.**Object**
  - Business.Client.**ClientDirectory**
  - java.awt.**Component** (implements java.awt.image.ImageObserver , java.awt.MenuContainer , java.io.Serializable)
    - java.awt.**Container**
      - javax.swing.**JComponent** (implements java.io.Serializable)
        - javax.swing.**JPanel** (implements javax.accessibility.Accessible)
          - userInterface.Employee.**AddClientJPanel**
          - userInterface.Admin.**AddEmployee**
          - userInterface.Admin.**AddMechanic**
          - userInterface.Admin.**AdminWorkSpace**
          - userInterface.Employee.**ClientServiceInfo**
          - userInterface.Employee.**EmployeeWorkSpace**
          - userInterface.Employee.**ManageClients**
          - userInterface.Client.**ManageClientWorkSpace**
          - userInterface.Admin.**ManageEmployee**
          - userInterface.Mechanic.**MechanicWorkSpace**
          - userInterface.Admin.**UpdateEmployee**
      - java.awt.**Window** (implements javax.accessibility.Accessible)
        - java.awt.**Frame** (implements java.awt.MenuContainer)
          - javax.swing.**JFrame** (implements javax.accessibility.Accessible , javax.swing.RootPaneContainer , javax.swing.WindowConstants)
            - userInterface.**MainJFrame**
  - Business.ServiceCenter.**ConfigureSystem**
  - Business.Employee.**EmployeeDirectory**
  - Business.Organization.**Organization**
    - Business.ServiceCenter.**ServiceOrg**
  - Encrypt.Passcode.**PasscodeUtils**
  - Business.Person.**Person**
    - Business.Client.**Client**
    - Business.Employee.**Employee**
    - Business.Mechanic.**Mechanic**
  - Business.Service.**Service**
  - Business.Factory.**UsersFactory**

Class Diagrams

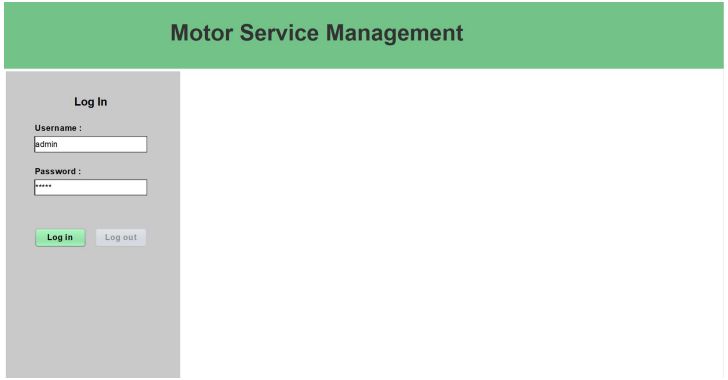


Class Diagrams



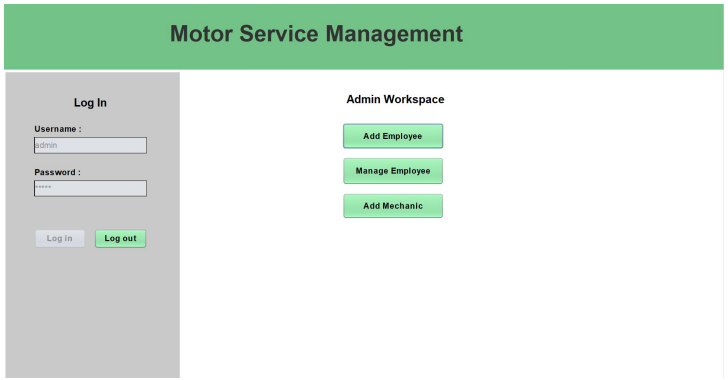
Operation Instructions

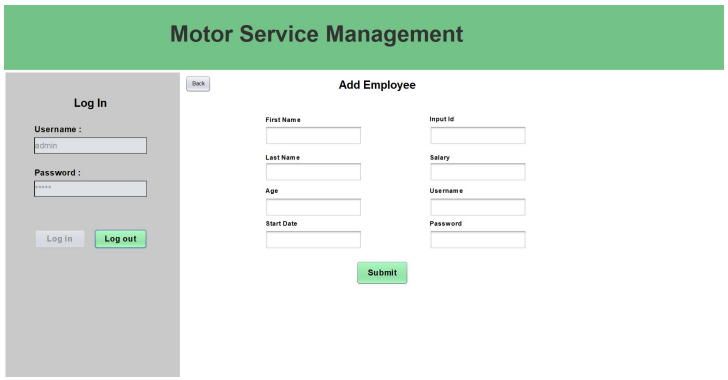
Operation Instructions



1. Log in as an admin:
    a. Username: admin
    b. Password: admin

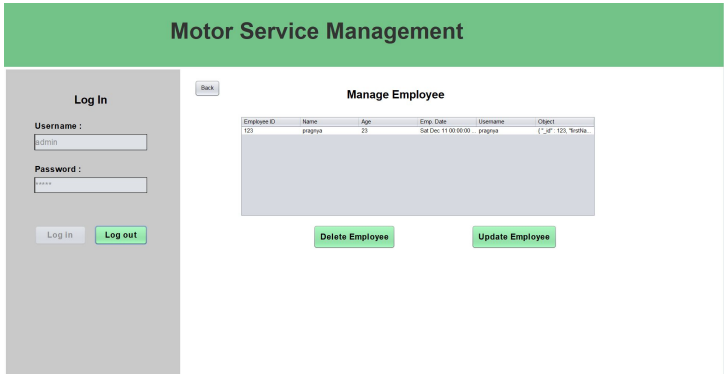
2. Add an employee:
    a. Fill in the details and click on Submit to Add an Employee.



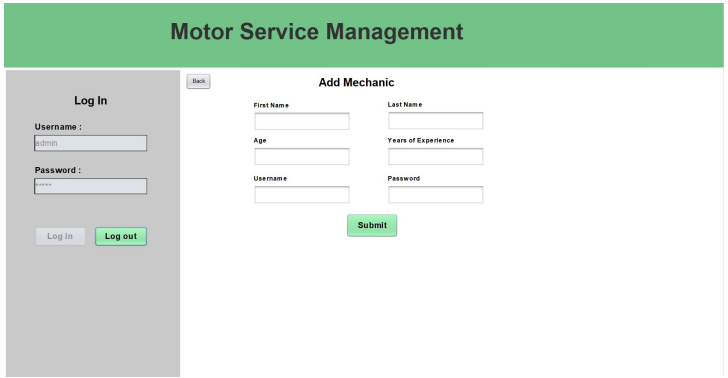


Operation Instructions

3. Manage Employees:
    a. Employee details can be updated and deleted by clicking on the Manage Employees button.

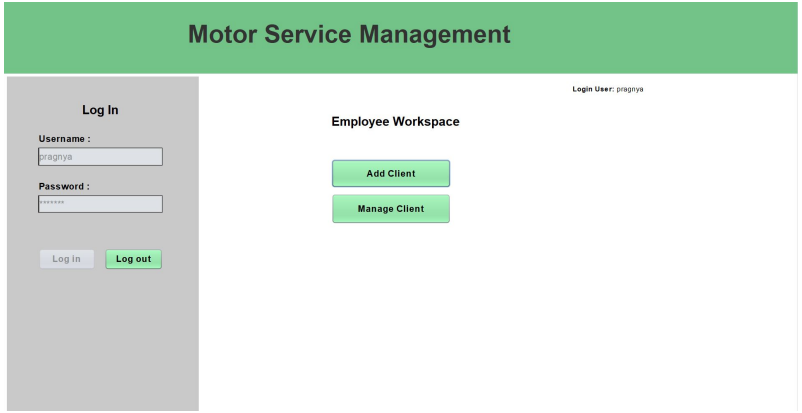


4. Add a mechanic:
    a. Fill in the details and click on **Submit** to add the mechanic.

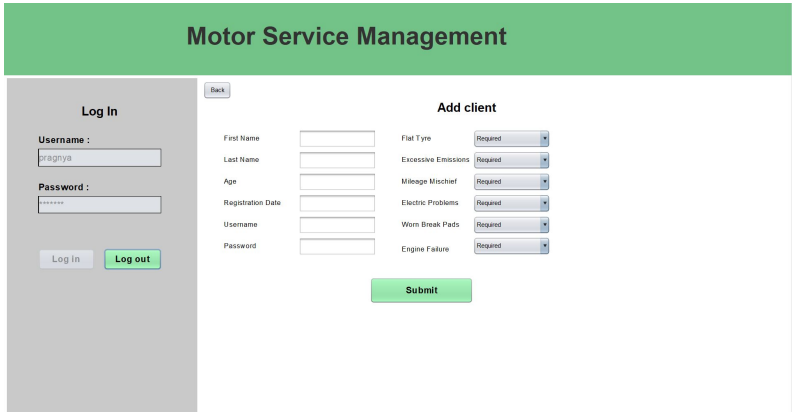


Operation Instructions

5. Log in as employee:
    a. Use your employee credentials to log in as an employee

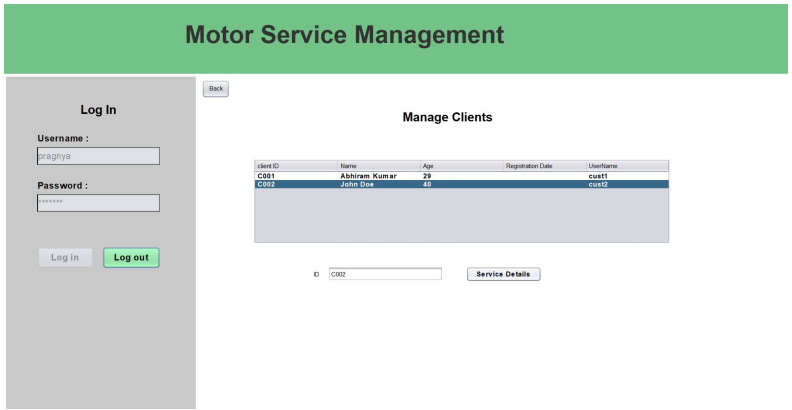


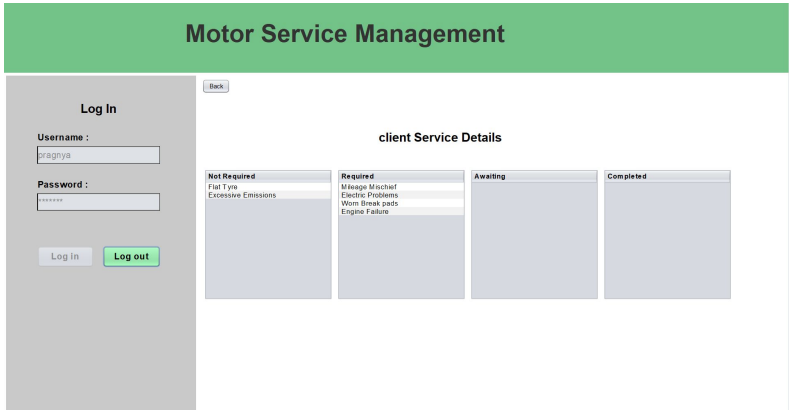
6. Add a client:
    a. Fill in the details of the client.
    b. Identify and select the requisite service jobs (like Engline Failure, Flat Tyre etc.) for the client.



Operation Instructions

5. Manage clients:
    a. In the **Manage Client**, you can see all the clients. By clicking on a particular client and clicking on Service details, you can view the status of each service.





Journey of Client

Add client

Input the first name, last name, age and credentials

Identify jobs

Employee can identify the motor service jobs that are required/ not required.

Login to portal

Client can log into the client dashboard to see the service jobs

Book appointment

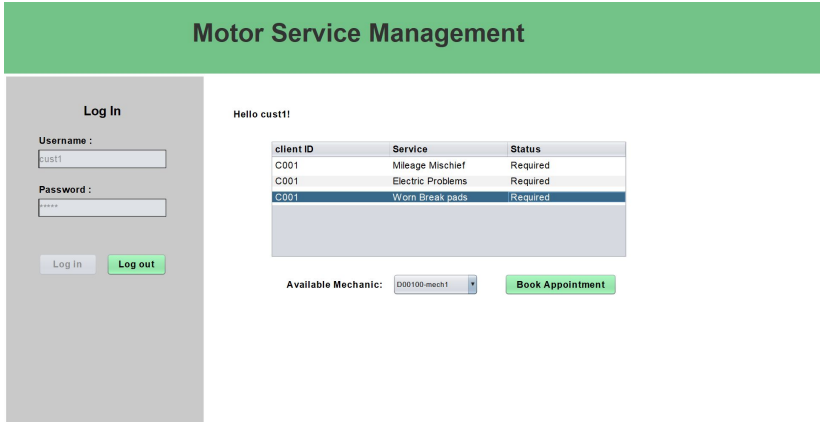
Clients can book an appointment with any of the mechanics for the service job

Job completion!

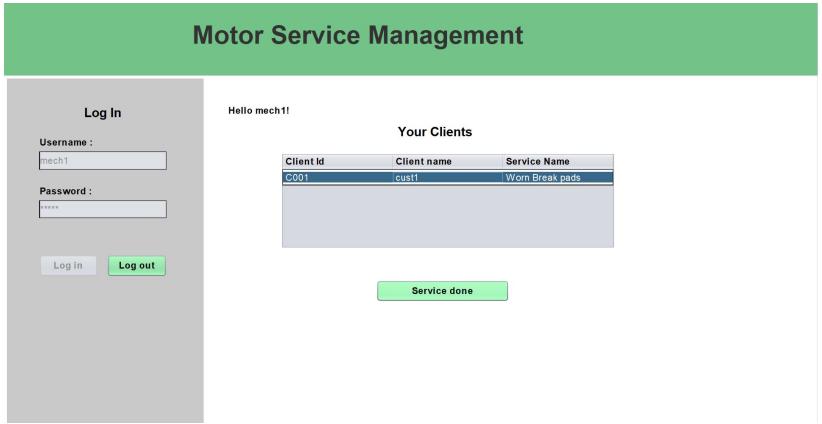
Upon completion of the service, the mechanic will update the dashboard.

Operation Instructions

5. Log in as a client:
   a. Use credentials to log in as an client and the required service jobs can be seen here.
   b. You can select any available mechanic and book an appointment with them
   c. Once you book the appointment the status of the service status changes to **awaiting**.

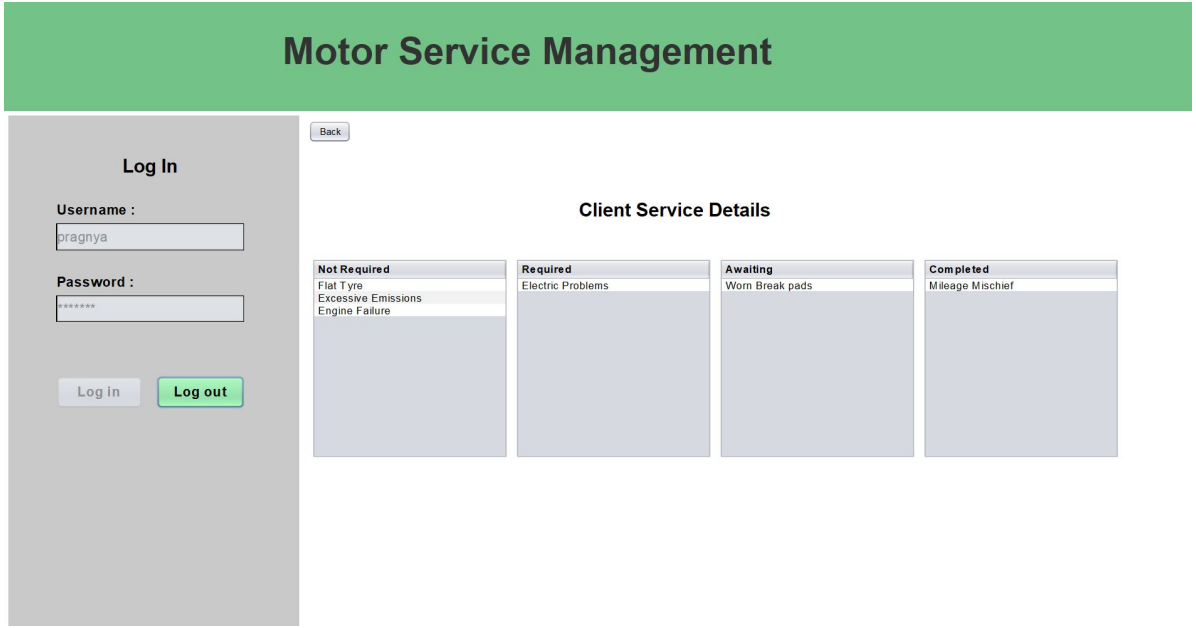


6. Log in as a mechanic
   a. Use credentials to log in as a mechanic and all bookings can be seen here.
   b. Once the service is completed, you can click on the button and the service status changes to **completed**.



Operation Instructions

All this can be monitored on the employee’s dashboard.



Future Scope

- Can be extended to other service level organisations (like pest control, car wash, salons).
- Analytics of the services & its status with graphical representations.
- Email/Phone integration for notifications to the client

Other libraries

- "jcommon-1.0.23.jar"
- "bson-4.2.3-javadoc.jar"
- "jfreechart-1.0.19.jar"
- "jfreechart-1.0.19-swt.jar"

Application Demo

Team

Lohita & Vamsi
- Backend & logic implementation

Pragnya & Surya
- UI design & Swing implementation

Vikyath & Rohith
- Logic Design & implementation

Everyone worked on the overall class structure and design of the project.

Thank you. Any Questions?