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*Department of Computer Science and Engineering (CSE)
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Royal Auto Car Servicing Center

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<u>Project Report Status</u>	
Marks:	Signature:
Comments:	Date:

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Chapter 1

Introduction

1.1 Overview

In the bustling world of automotive services, efficient management is key to ensuring customer satisfaction and operational excellence. "Royal Auto Car Servicing Center" is initiative aimed at developing a comprehensive website tailored to streamline the business operations of a fictitious car servicing center. This project encompasses the creation of a dynamic online platform equipped with essential features such as login authentication, product listings, employee management, billing functionalities, and a secure logout mechanism.

1.2 Motivation

The motivation behind the development of the "Royal Auto Car Servicing Center" website stems from several compelling factors:

- **Educational Pursuit**

- As students passionate about web development and business management, i recognize the immense value of practical, hands-on learning experiences. By undertaking this project, i aim to apply and enhance my skills in website development, database management, and user interface design within a simulated business environment.

- **Real-world Relevance**

- In today's digital age, businesses across all industries are increasingly leveraging technology to streamline their operations and enhance customer experiences. By conceptualizing and developing a web-based platform for a car servicing center, i seek to bridge the gap between theoretical knowledge and real-world application, preparing myself for future careers in the ever-evolving field of technology and business management.

- **Entrepreneurial Spirit**

- : "Royal Auto Car Servicing Center" embodies our entrepreneurial spirit and commitment to innovation. Through this project, i have the opportunity to conceptualize, design, and implement a solution that addresses the practical needs of a fictional business entity, fostering creativity and problem-solving skills along the way.
- **Community Impact**
 - While my project is rooted in academia, i recognize its potential to make a positive impact beyond the classroom. By creating a user-friendly and efficient platform for car servicing management, i aim to contribute to the advancement of small businesses and entrepreneurs, empowering them with the tools they need to thrive in an increasingly competitive market landscape

1.3 Problem Definition

In addressing the needs of the Royal Auto Car Servicing Center, I've identified several key challenges and opportunities that my website project seeks to tackle.

1.3.1 Manual Workflow Processes

Currently, the car servicing center relies heavily on manual paperwork and traditional record-keeping methods for managing customer information, employee schedules, and billing records. This manual approach not only consumes valuable time and resources but also increases the likelihood of errors and inefficiencies.

1.3.2 Limited Accessibility

With the absence of a digital platform, accessing critical business information and functionalities is restricted to on-site personnel only. This lack of accessibility hinders remote management capabilities and inhibits collaboration among team members, particularly in scenarios requiring immediate action or decision-making.

1.3.3 Data Security Concerns

Paper-based records and physical storage systems pose inherent risks to data security and confidentiality. Without proper safeguards in place, sensitive customer information, financial data, and employee records are susceptible to loss, theft, or unauthorized access, potentially compromising the trust and credibility of the car servicing center.

1.4 Design Goals/Objectives

The overarching goal of the Royal Auto Car Servicing Center website project is to modernize and optimize business operations by developing a comprehensive digital platform that enhances efficiency, accessibility, security, customer interaction, and performance monitoring. Develop an intuitive user interface for the website, ensuring easy navigation and efficient access to essential features. Implement a centralized database system to manage customer information, employee schedules, and billing records securely. Integrate automated workflows and task management functionalities to streamline processes such as appointment scheduling, inventory management, and invoicing.

1.5 Gantt Chart

This chart will show how I will complete my project and my efforts.

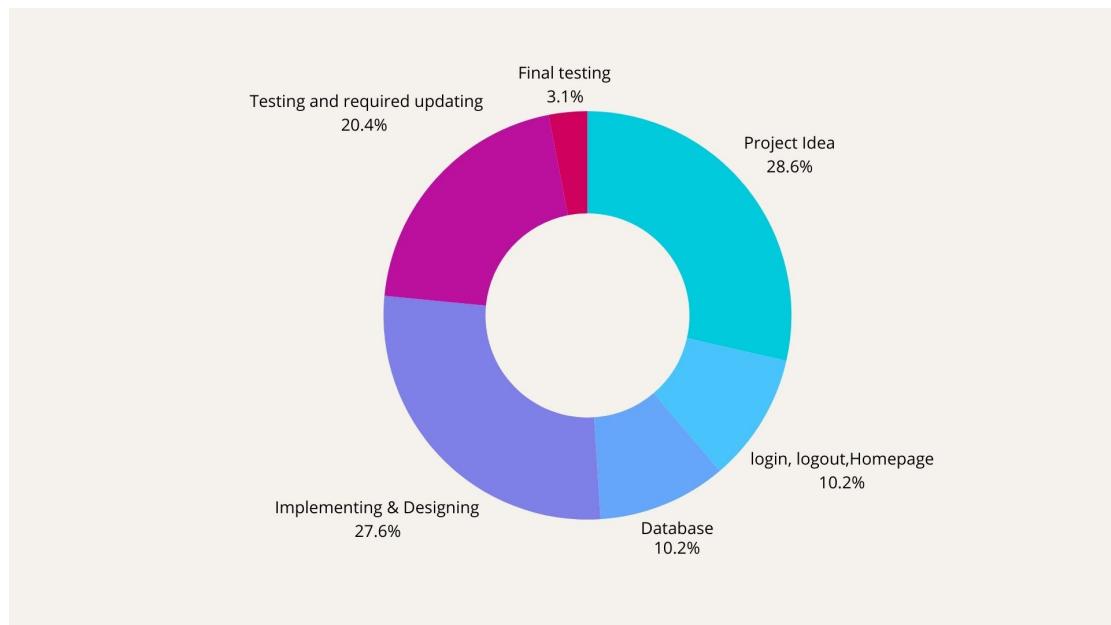


Figure 1.1: Project work flow.

1.6 Application

This project's practical application lies in personal business. But this is made for the achievement from my lab. It will manage customer details, employees list, attendance,billing and product list.The system offers comprehensive support for employee management. Through features such as an employee directory and attendance tracking, businesses can effectively monitor workforce dynamics and ensure optimal staffing levels. This not only promotes operational efficiency but also aids in fostering a productive and engaged workforce.Furthermore, the billing module of the system automates and streamlines the invoicing process, minimizing errors and delays associated with manual billing methods. Moreover, the project encompasses a robust product management component, enabling businesses to maintain accurate and up-to-date inventories. By tracking product availability, pricing, and sales trends, businesses can make informed decisions regarding inventory stocking levels and pricing strategies, ultimately maximizing profitability.

Chapter 2

Design/Development/Implementation of the Project

2.1 Introduction

The Royal Auto Car Servicing Center is a comprehensive web application designed to manage various aspects of an auto servicing business. The project integrates several features including weather updates, product management, and employee management, all within an interactive and user-friendly interface.

2.2 Design

2.2.1 Interface

- Home Page: Features a header with navigation links to all other pages (Home, Products, Employees, Attendance, Deposits).Also every page has this navigator. Here also have my social media link and to do list button .
- Products Page: Includes options to add, list, update, and delete products.
- Employee Page: Manages employee records with functionalities to add, update, and delete employee information, manage attendance, and record deposits.
- Billing page: In this page I can make a invoice for a customer and can download the pdf.

2.2.2 Database Schema

- Products Table: Stores product details such as Product ID, Name, Description, Price, and Quantity.
- Employees Table: Stores employee details including Employee ID, Name, Position, Contact Information, and Salary.

- Attendance Table: Records daily attendance of employees.
- Deposits Table: Tracks deposits made by employees.
- User table: Contain USer information which mannualy added in code .
- Bill table: Where store customer information and services which they take from my business.

2.2.3 Development

Tools & Technologies Used

- HTML
- PHP
- JS
- DATABASE(MySQL)
- VS code
- chrome browser
- XAMMP
- fpdf file

2.2.4 Key Features'

- Weather Update: Integrates a weather API to display current weather updates on the home page.
- Add Product: Form to add new products to the inventory.
- Product List: Displays all products with options to update or delete each product.
- Update Product: Allows editing of existing product details.
- Delete Product: Removes a product from the inventory.
- Add Employee: Form to add new employees.
- Employee List: Displays all employees with options to update or delete each employee.
- Update Employee: Allows editing of existing employee details.
- Delete Employee: Removes an employee from the database.
- Attendance Management: Interface for marking daily attendance of employees.

- Deposit Management: Interface for recording and displaying deposits made by employees.
- Billing : take Customer information and note services and make a invoice with total amount.

2.2.5 Implementation

Database

```

1 CREATE DATABASE royel_auto;
2
3 USE royel_auto;
4
5 CREATE TABLE users (
6     id INT AUTO_INCREMENT PRIMARY KEY,
7     username VARCHAR(50) NOT NULL UNIQUE,
8     password VARCHAR(255) NOT NULL
9 );
10
11 CREATE TABLE products (
12     id INT AUTO_INCREMENT PRIMARY KEY,
13     name VARCHAR(100) NOT NULL,
14     quantity INT NOT NULL
15 );
16
17 CREATE TABLE employees (
18     id INT AUTO_INCREMENT PRIMARY KEY,
19     name VARCHAR(100) NOT NULL,
20     position VARCHAR(100) NOT NULL,
21     salary DECIMAL(10, 2) NOT NULL
22 );
23
24 CREATE TABLE bills (
25     id INT AUTO_INCREMENT PRIMARY KEY,
26     customer_name VARCHAR(255),
27     mobile_number VARCHAR(20),
28     address VARCHAR(255),
29     car_bike_name VARCHAR(255),
30     wash_charge DOUBLE,
31     total DOUBLE,
32     created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
33 );
34
35 CREATE TABLE bill_products (
36     id INT AUTO_INCREMENT PRIMARY KEY,
37     bill_id INT,
38     product_id INT,
39     quantity INT,
40     total_price DOUBLE,
```

```
41     FOREIGN KEY (bill_id) REFERENCES bills(id),
42     FOREIGN KEY (product_id) REFERENCES products(id)
43 );
44 CREATE TABLE employee_attendance (
45     id INT AUTO_INCREMENT PRIMARY KEY,
46     employee_id INT NOT NULL,
47     date DATE NOT NULL,
48     status ENUM('present', 'absent') NOT NULL,
49     FOREIGN KEY (employee_id) REFERENCES employees(id)
50 );
51 CREATE TABLE deposits (
52     id INT AUTO_INCREMENT PRIMARY KEY,
53     employee_id INT NOT NULL,
54     month VARCHAR(7) NOT NULL, -- Format 'YYYY-MM'
55     amount DECIMAL(10, 2) NOT NULL,
56     FOREIGN KEY (employee_id) REFERENCES employees(id)
57 );
```

2.2.6 Code

```
header.php > ...
1  <?php
2  if (session_status() == PHP_SESSION_NONE) {
3  |   session_start();
4  }
5  if (!isset($_SESSION['user_id'])) {
6  |   header("Location: login.php");
7  |   exit;
8  }
9
10 // Function to fetch weather data for Dhaka
11 // reference
12 function fetchWeather() {
13     // API key
14     $apiKey = 'fb19a72f5fc86dce6d421593db5dfd9f';
15     // API URL for Dhaka
16     $apiUrl = 'https://api.openweathermap.org/data/2.5/weather?q=Dhaka&appid=' . \$apiKey . '&units=metric';
17
18     // Fetching data from the API
19     $response = file_get_contents($apiUrl);
20
21     // If successful response
22     if ($response !== false) {
23         // Decode JSON response
24         $data = json_decode($response, true);
25         return $data;
26     } else {
27         return false; // Failed to fetch data
28     }
29
30 // Function to display weather data
31 // reference
32 function displayWeather($data) {
33     // Check if data is available
34     if ($data !== false) {
35         // Display temperature
36         echo "<p>Temperature: {$data['main']['temp']}°C</p>";
37     } else {
38         // Display error message
39         echo "Error fetching weather data.";
40     }
41
42 // Fetch weather data for Dhaka
43 $weatherData = fetchWeather();
44 ?>
45
46 <!DOCTYPE html>
```

Figure 2.1: Header portion code.

As the Code file has many lines of code I just add their name.

```
46  <!DOCTYPE html>
47  <html lang="en">
48  <head>
49      <meta charset="UTF-8">
50      <title><?php echo $title ?? 'Royal Auto Car Servicing Center'; ?></title>
51      <meta name="viewport" content="width=device-width, initial-scale=1.0">
52
53      <style>
54          body {
55              font-family: Arial, sans-serif;
56              background-color: #f8f9fa;
57              margin: 0;
58              padding: 0;
59          }
60
61          .header-box {
62              position: fixed;
63              top: 0;
64              width: 100%;
65              height: 10%;
66              background-color: #007bff;
67              display: flex;
68              align-items: center;
69              justify-content: space-between;
70              padding: 0 20px;
71              box-sizing: border-box;
72              z-index: 1000;
73          }
74
75          .logo img {
76              height: 50px; /* Adjust the height as needed */
77          }
78
79          .weather {
80              color: cornsilk;
81              padding: 0 10px;
82              font-weight: bold;
83              font-size: x-large;
84          }
85
86          .navbar {
87              display: flex;
88              align-items: center;
89          }
90
91          .navbar a {
92              color: #fff;
93              text-decoration: none;
```

Figure 2.2: Header portion code.

```
96
97
98     .navbar a:hover {
99         background-color: #0056b3;
100    }
101
102    .content {
103        margin-top: 100px; /* Add a margin to push content below the fixed header */
104        padding: 20px;
105    }
106  </style>
107 </head>
108 <body>
109
110 <div class="header-box">
111     <div class="logo">
112         
113     </div>
114     <!-- Display Weather Data -->
115     <div class="weather">
116         <?php displayWeather($weatherData); ?>
117     </div>
118     <div class="navbar">
119         <a href="home.php">Home</a>
120         <a href="products.php">Product List</a>
121         <a href="employees.php">Employee Management</a>
122         <a href="billing.php">Billing Section</a>
123         <a href="logout.php" class="logout">Logout</a>
124     </div>
125 </div>
126
127 <div class="content">
128
129 </div>
130
131 </body>
132 </html>
133
```

Figure 2.3: Header portion code.

The screenshot shows a code editor interface with the following details:

- File Explorer:** On the left, it lists files under the "ROYAL" project folder, including login.php, home.php, products.php, update_product.php, logout.php, header.php, sql.txt, employees.php, attendance_history.php, Settings, and footer.php.
- Code Editor:** The main area displays the content of the `home.php` file. The code is a PHP script that handles user authentication and generates a todo list. It includes session management, header inclusion, and CSS styling for a responsive design.
- Bottom Status Bar:** Shows the current line (Ln 15), column (Col 38), and other settings like spaces, encoding, and file type.

```
<?php
session_start(); // Ensure session is started
$title = "Royal Auto Car Servicing Center";
include "header.php";

if (!isset($_SESSION['user_id'])) {
    header("Location: login.php");
    exit;
}

if ($_SERVER['REQUEST_METHOD'] === 'POST' && isset($_POST['todo'])) {
    $todo = $_POST['todo'];
    // Save the to-do list to session
    $_SESSION['todo_list'] .= $todo;
    // Redirect back to the home page
    header("Location: home.php");
    exit;
}

$todo_list = isset($_SESSION['todo_list']) ? $_SESSION['todo_list'] : '';
?>

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title><?php echo $title; ?></title>
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.0.0-beta3/css/all.min.css">
    <style>
        html {
            scroll-behavior: smooth;
        }
        * {
            margin: 0;
            padding: 0;
            box-sizing: border-box;
            font-family: 'Poppins', sans-serif;
        }
        a {
            text-decoration: none;
            color: #007bff;
        }
        a:hover {
            text-decoration: underline;
        }
    </style>

```

Figure 2.4: Header portion code.

EXPLORER

- ✓ ROYAL ✖️    
- fpdf186
- images
- uploads
- 🐘 attendance_history.php
- 🐘 billing.php
- 🐘 employees.php
- 🐘 footer.php
- 🐘 generate_invoice.php
- 🐘 header.php
- 🐘 home.php
- 🐘 login.php
- 🐘 logout.php
- 🐘 products.php
- ☰ salt.txt.txt

Chapter 3

Performance Evaluation

3.1 Functionality Testing

- Weather Update: Verified real-time weather updates integration.
- Product Management: Tested adding, viewing, updating, and deleting products to ensure data consistency and integrity.
- Employee Management: Tested adding, viewing, updating, and deleting employee records to ensure proper functioning.
- Attendance Management: Ensured daily attendance could be marked accurately and retrieved correctly.
- Deposit Management: Verified deposit entries were correctly recorded and displayed.

3.2 Usability Testing

Output

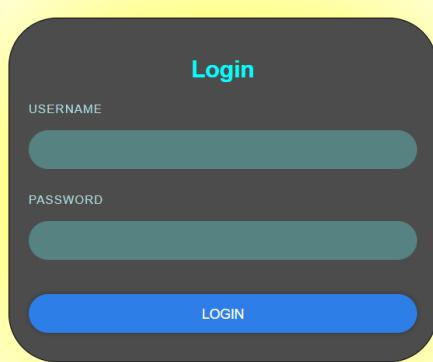


Figure 3.1: LOg in.

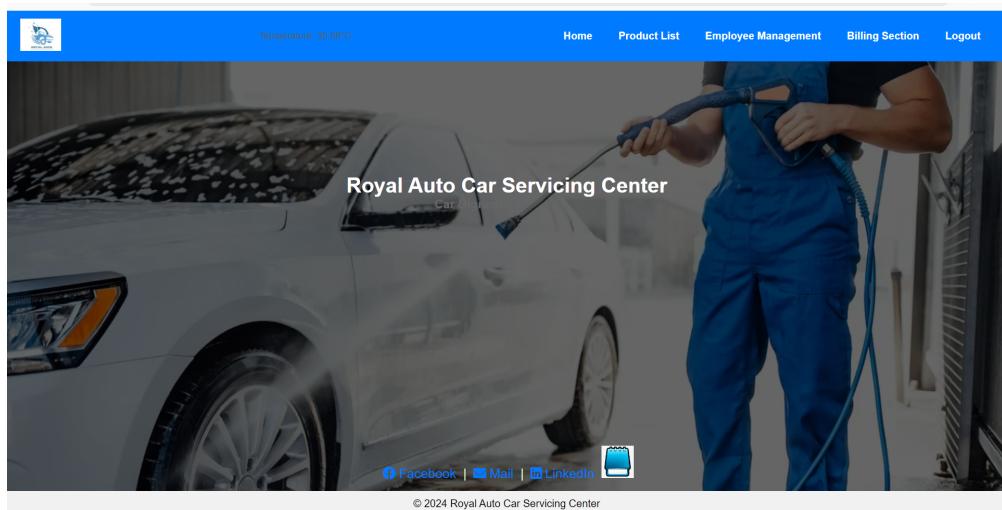
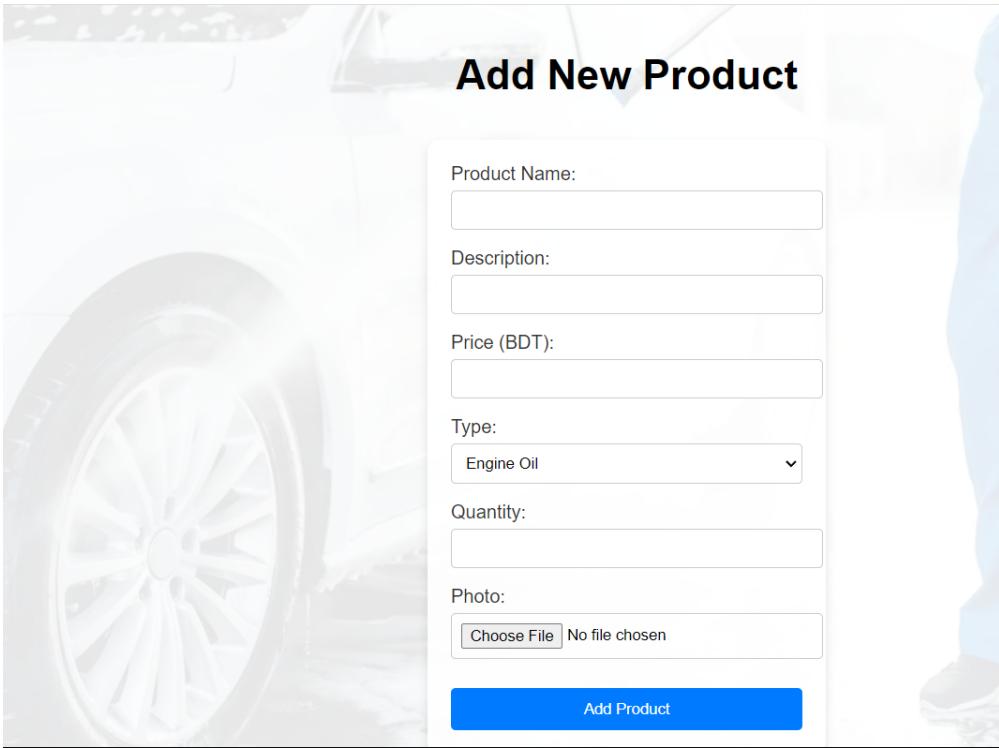


Figure 3.2: Home page.

The screenshot shows the 'Product List' page. At the top, it displays the temperature 'Temperature: 30.99°C' and navigation links. Below that is a search bar with a 'Search' button. The main content area features a table with columns: Product Name, Description, Price (BDT), Type, Quantity, Photo, and Action. Two products are listed: 'engine oil' (motor engine oil, BDT 450, Engine Oil, 142, photo of oil bottle, update button) and '2Nz' (China Filter, BDT 250, AC Filter, 5, photo of filter, update button).

Product Name	Description	Price (BDT)	Type	Quantity	Photo	Action
engine oil	motor engine oil	৳450	Engine Oil	142		<button>Update</button>
2Nz	China Filter	৳250	AC Filter	5		<button>Update</button>

Figure 3.3: Products List page.



Add New Product

Product Name:

Description:

Price (BDT):

Type:

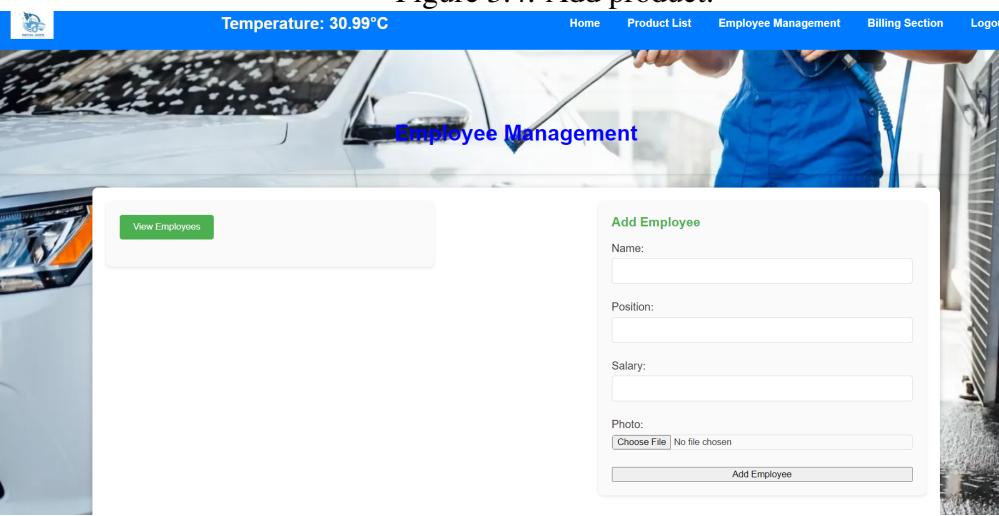
Engine Oil

Quantity:

Photo:

No file chosen

Figure 3.4: Add product.



Temperature: 30.99°C

Home Product List Employee Management Billing Section Logo

Employee Management

Add Employee

Name:

Position:

Salary:

Photo:

No file chosen

Figure 3.5: Employee Management.

Employee Name	Status
MD.SAIDUL ISLAM SHUVO	Present ▾
Hafiz	Present ▾
ahmen	Present ▾
মাহমুদুল হাসান	Present ▾
Rakibul	Present ▾
Hasib	Present ▾

Attendance History by Month

Select Month:

Figure 3.6: Employee Attendance

Add Monthly Deposit

Select Employee:

MD SAIDUL ISLAM SHUVO

Select Month:

Deposit Amount:

Deposit History

Employee Name	Total Amount
MD.SAIDUL ISLAM SHUVO	300010.00
Hafiz	1500.00
ahmen	12000.00
Rakibul	5500.00
Hasib	1500.00



Figure 3.7: View deposit.

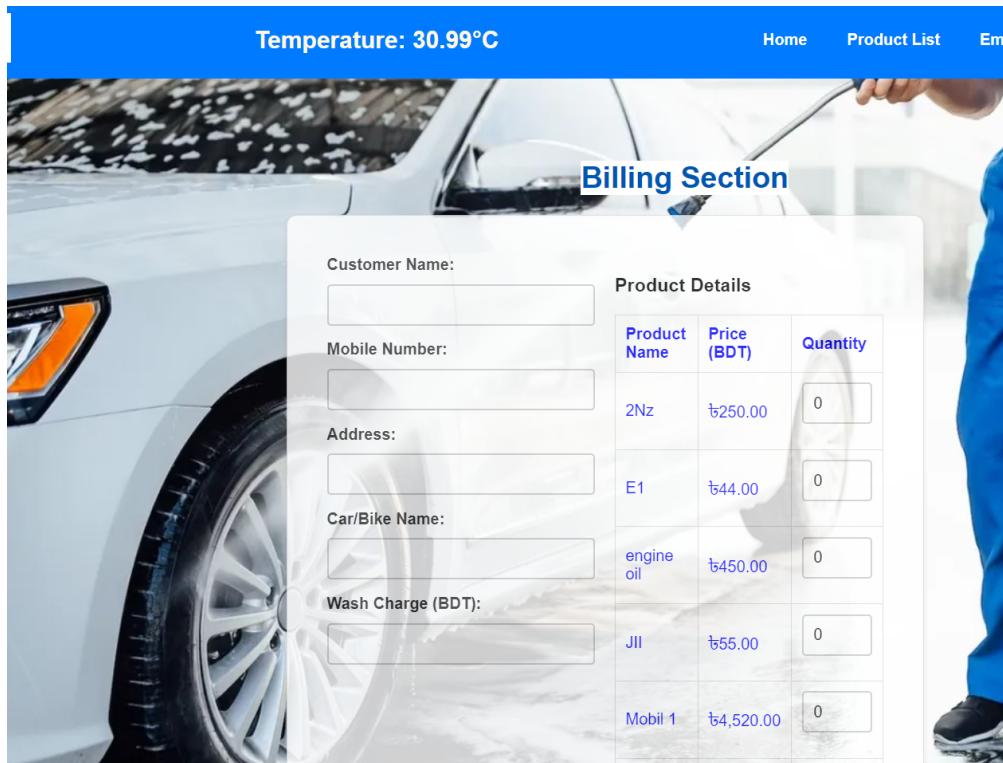


Figure 3.8: Billing section.

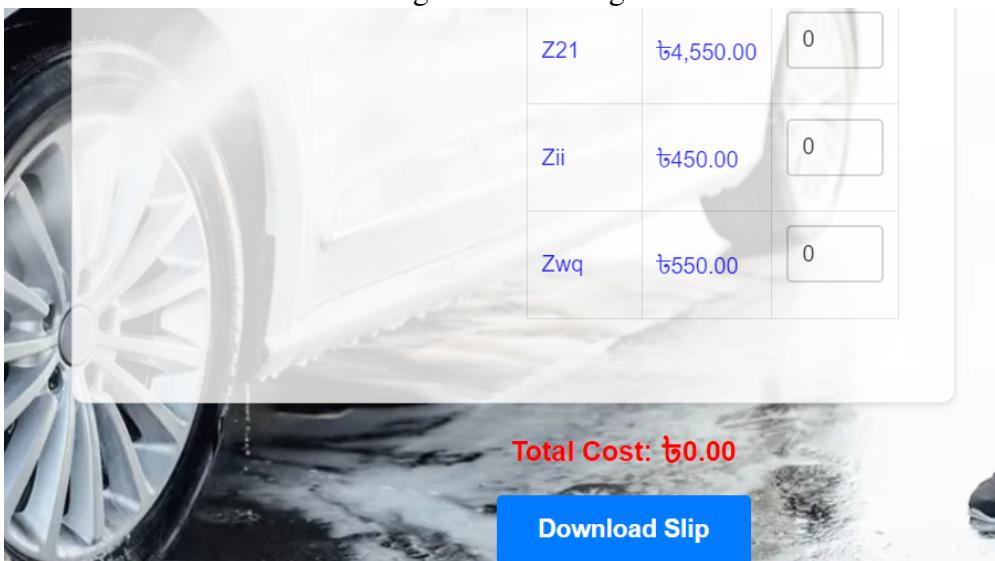


Figure 3.9: Billing Section.

Royal Auto Car Servicing Center

North Badda, Lake-view, Dhaka 1212

Mobile: 01609198657, 01712541481

Customer Name: Shuvo

Date: 2024-06-10

Customer Address: Dhaka

Bike/Car No: Axio

Mobile Number: 01609198657

No	P/S Type	Name	Quantity	Price(BDT)
1	Engine Oil	Z1	01	5.00
2	Service	Wash Charge	1	150.00
Total Cost (BDT)				155.00



Owner Signature: _____

Figure 3.10: INVOICE

Chapter 4

Conclusion

4.1 Discussion

The Royal Auto Car Servicing Center web application was conceptualized to streamline and optimize the management processes within an auto servicing business. The project successfully integrates several critical features, including product and employee management, attendance tracking, and deposit recording, all within a cohesive and user-friendly interface. By leveraging technologies such as HTML, CSS, JavaScript and PHP with , the application ensures robust performance and ease of use.

The weather update feature adds a unique touch, providing real-time weather information which could be useful. The product management system allows for efficient handling of inventory, ensuring that products can be added, updated, or deleted seamlessly. Employee management is enhanced through comprehensive records maintenance and attendance tracking, ensuring operational efficiency.

4.2 Limitations

Despite its robust functionality, the Royal Auto Car Servicing Center web application has certain limitations:

- Scalability: The current implementation may face challenges in handling a significantly large volume of data and concurrent users without further optimization.
- User Roles and Permissions: The application lacks a sophisticated user role management system. Here only admin can run this .
- Reporting: There is a limited capacity for generating comprehensive reports, which could be crucial for business analytics and decision-making.
- Mobile Responsiveness: The interface is primarily designed for desktop use and may not provide an optimal experience on mobile devices.

4.3 Scope Of Future Work

To further enhance the Royal Auto Car Servicing Center web application, several areas can be explored:

- Scalability Improvements: Implementing advanced database optimization techniques and leveraging cloud services can help scale the application to support a larger user base and more extensive datasets.
- User Roles and Permissions: Introducing a role-based access control system to define and manage different user roles, enhancing security and operational management.
- Advanced Reporting: Developing a comprehensive reporting module that allows for detailed analytics and insights, helping in strategic decision-making.
- Mobile Optimization: Redesigning the user interface to be fully responsive, ensuring a seamless experience across various devices, including smartphones and tablets.
- Integration with Third-party Services: Integrating with external systems such as payment gateways, CRM software, and other relevant services to broaden the application's capabilities and improve user experience.
- Customer Management: Adding features for managing customer information, service history, and appointment scheduling, providing a more comprehensive solution for the auto servicing business.
- Enhanced Security: Continuously updating and improving security protocols to protect against emerging threats and ensure data integrity and confidentiality.

4.4 REFERENCES

- .<https://www.w3schools.com/whatis/>
- .<https://www.geeksforgeeks.org/internet-and-web-programming/>
- .Lab Manuals