CardotCom

Final Report

– Group 4–

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ENGR 372

Aim of the Project

The primary goal of the car website project is to create an efficient and secure platform for the people to buy cars. The website allows users to browse and purchase cars from a diverse inventory, provides real-time updates on the availability of vehicles, and offers a seamless user experience with detailed information about each car. Users can easily search for their desired vehicles, compare different models, and make informed purchasing decisions, ensuring a convenient and efficient car-buying process.

Importance of the Project

The website creates a secure and centralized system for car inventory management, which makes the process of browsing and purchasing cars easier and more efficient for both users and the dealership staff. Additionally, the digital accessibility of the website helps raise awareness about available vehicles and keeps users up to date easily and instantly.

Roles

Project Manager: Behlul

Scrum Master: Deniz Bakici

Frontend Developers: Behlul, Hussein Tareq Hasan Al-Hadha, Abdulaziz Alfadhli, Berkay Ozifidan

Backend Developers: Tolga, Deniz

UI Designers: Behlul, Abdulaziz Alfadhli, Hussein Tareq Hasan Al-Hadha

System Designers: Behlul , Hussein Alhadha, Abdulaziz Alfadhli, Berkay Ozifidan, Deniz Bakici, Tolga

UX Developer: Behlul, Deniz Bakici

Integration & Performance Developer: Deniz, Tolga

QA Tester: Tolga, Berkay

Timeline

Phase 1: May 1 – May 10

- Research on website requirements and languages, tools, and services to be used

- Planning of essential features, and outlining action plan

- Design of the UI: Login, Signup, Homepages

- Design of the database

Phase 2: May 10– May 20

- Implementation of database.

- Testing basic features: user registration, user authentication, displaying cars.

- Beginning of work on the official UI pages: Login and User Homepage.

-Linking all the pages together.

-Integrating the backend and frontend together.

Phase 5: May 20 to May 26

-Testing the website and checking that everything is working perfectly

- Finalization and refining of the pages

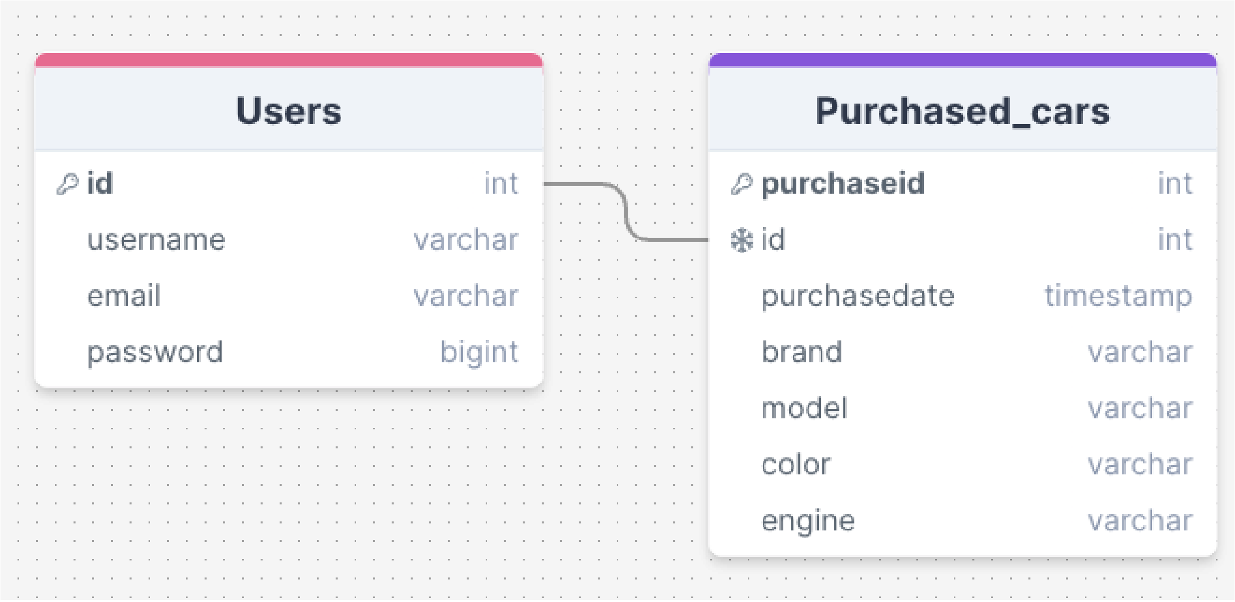
- Final Report & Submission

Requirement List

Identifier	Priority	Requirement
REQ1	5	The website should let users sign up and log into their accounts with the information stored on the database.
REQ2	5	The website should allow users to submit their purchases
REQ3	5	The website should display the cars
REQ4	3	The website should allow the user to check out the cars without logging in
REQ5	5	The website should show the inventory of purchases
REQ6	3	The website should allow the user to logout

Table 1: The website's requirements and their associated priority levels.

Full design



Users

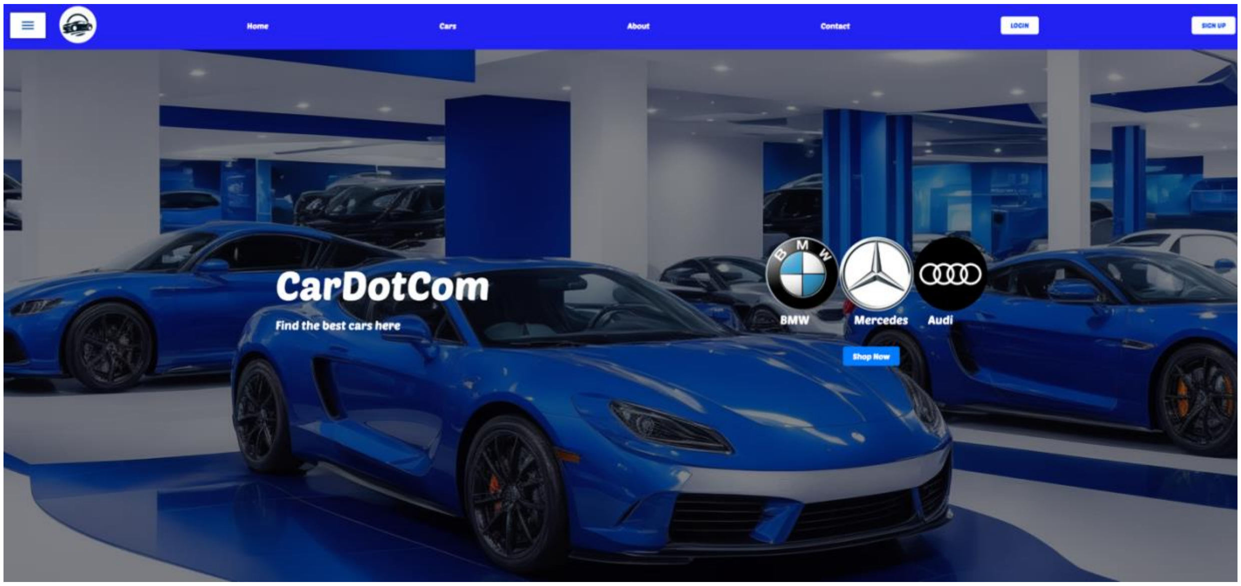
id	int
username	varchar
email	varchar
password	bigint

Purchased_cars

purchaseid	int
id	int
purchasedate	timestamp
brand	varchar
model	varchar
color	varchar
engine	varchar

Figure 1: Database Design

The database (Fig. 1) supporting the website efficiently stores and manages data related to the cars, users. Due to the structured nature of the data, the website uses a tabular approach to storing data, with MySQL being the language of choice.

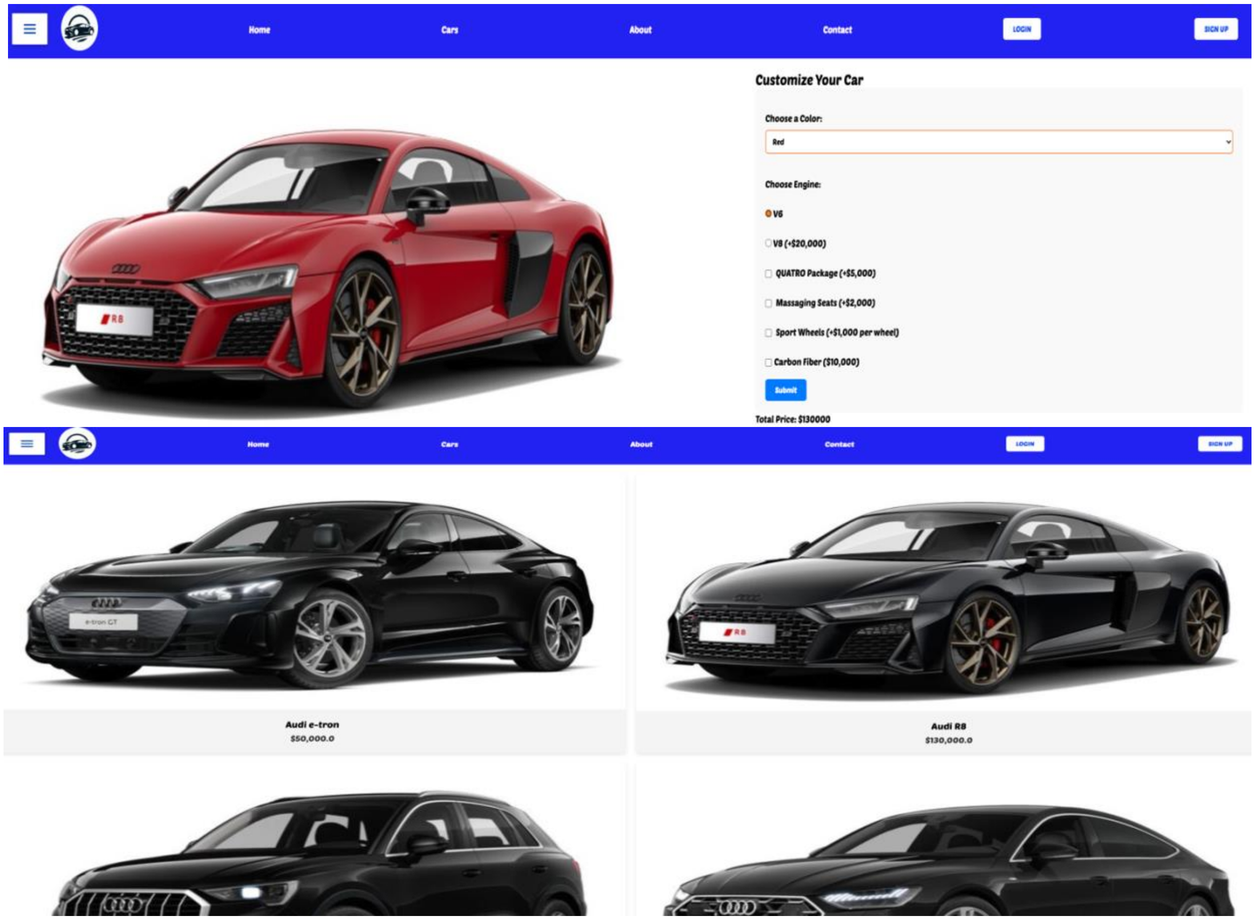


CarDotCom

Find the best cars here

Figure 2: Homepage

Our homepage shown in figure 2, where simplicity and elegance meet user-friendly design and visual appeal. Navigate effortlessly through our clean, modern layout, featuring high-quality images. Discover your perfect car with ease and stay updated with our latest offers and customer testimonials.



Customize Your Car

Choose a Color: Red

Choose Engine:

● V6

○ V8 (+$20,000)

□ QUATRO Package (+$5,000)

□ Massaging Seats (+$2,000)

□ Sport Wheels (+$1,000 per wheel)

□ Carbon Fiber ($10,000)

Total Price: $130000

Audi e-tron
$50,000.0

Audi R8
$130,000.0

Figure 3&4:Choose your model page and specifications

The "Choose Your Model" shown in figure 3 and 4 feature on our car website offers users a seamless and intuitive experience for selecting their desired vehicle. With a range of models to choose from, accompanied by detailed specifications and customization options, users can make informed decisions easily. The visually appealing layout and mobile responsiveness enhance accessibility, while integration with other website features ensures a cohesive browsing experience. User engagement metrics indicate strong interaction with this feature, emphasizing its significance in driving conversions and enhancing overall website usability. Looking ahead, potential improvements include further personalization options and integration with emerging technologies to maintain competitiveness in the market.

Construction of the Project and Details

Overview of the Project Code:

The project is structured around several PHP files, which handle all core functionalities of the website. The PHP files manage interactions between the client and server sides without the need for a dedicated server setup. User-related functionalities, such as browsing and purchasing cars, are handled by carsbmw.php and carsmerc.php and carsaudi.php, inventory.php.

PhP & HTML & CSS Files:

The index.php, indexAudi.php, indexMerc.php, indexBmw.php all follow a similar code structure while serving different purposes.

-The purchased cars are stored using post method in the purchased_cars table.

- The pages utilize POST methods to interact with the database to receive item data and to add or update items.

-The fonts that was used in our website were taken from google fonts.

-The style.css and style1.css files are used to apply styles to the elements on the pages.

CODE SNIPPET:	CODE EXPLANATION:

function changeCarPicture() {
        const selectedColor = colorSelect.value;
        let carImageSrc = "";
 	
        if (selectedColor === "red") {
            carImageSrc = "Images/r8red.jpg";
        } else if (selectedColor === "blue") {
            carImageSrc = "Images/r8blue.jpg";
        } else if (selectedColor === "black") {
            carImageSrc = "Images/r8black.jpg";
        }
 	
        carPicture.innerHTML = `<img src="${carImageSrc}" alt="Car Image">`;
    }
	This code allows the user to choose different colors and based on the color he chooses he will see the color the car with color he chooses
	
	This code was in inside and action listener and listens to the option he chooses and the source of the image changes to a different source based on the option he chooses

<?php
$conn = mysqli_connect('localhost', 'root', ", 'group4');
 	
if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $username = $_POST['uname'];
    $password = $_POST['pword'];
    $email = $_POST['adress'];
 	
    $sql = "INSERT INTO users (username, password, email) VALUES ('$username', '$password', '$email')";
    $result = mysqli_query($conn, $sql); //insert into db
 	
    if ($result){
        header("Location: login.php");
        exit();
    }
}
$conn->close();
?>
	This PHP snippet connects to a MySQL database, inserts form data into a 'users' table upon form submission, and redirects to a login page upon success.
	
	It makes sure that the user will be registered in the database

CODE SNIPPET:	CODE EXPLANATION:

.car-container.active {
    display: flex;
}
 	
.car {
    width: 45%;
    margin: 10px;
    background-color: #f4f4f4;
    border-radius: 10px;
    box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
    overflow: hidden;
    transition: transform 0.3s ease-in-out;
}
 	
.car:hover {
    transform: scale(1.03);
}
	This CSS snippet covers the responsive display of cars within the container, their styling including background color, border radius, box-shadow for a subtle 3D effect, and a hover effect for visual feedback when users interact with the cars.

<?php
session_start();
if ($_SERVER["REQUEST_METHOD"] == "POST" && isset($_POST['purchase'])) {
 	
    $username = $_SESSION['username'];
    $color = $_POST['color'];
    $engine = $_POST['engine'];
    $time = date('Y-m-d H:i:s');
    $conn = mysqli_connect("localhost", "root", "", "group4");
 	
    $sql = "INSERT INTO purchased_cars (username, color, engine, purchasedate, brand, model) VALUES ('$username', '$color', '$engine','$time', 'BMW', 'M5')";
   $result = mysqli_query($conn, $sql);
}
 	
    if ($result){
        header("Location: index.php");
        exit();
    }
	This PHP code snippet initiates a session and, upon form submission, inserts purchase data into a MySQL database. It then redirects to the index page upon success

```
<script>
      function toggleNav() {
          var sidebar = document.getElementById("sidebar");
          var menuButton = document.querySelector('.toggle-bar');
          var navBar = document.querySelector('.nav-bar');

          if (sidebar.style.left === "-250px") {
              sidebar.style.left = "0";
              menuButton.textContent = "close";
              navBar.style.display = "none"; // Hide the navigation bar
          } else {
              sidebar.style.left = "-250px";
              menuButton.textContent = "menu";
              navBar.style.display = "flex"; // Ensure the navigation bar remains visible
          }
      }

   </script>
```

This JavaScript snippet defines a toggleNav() function that toggles the visibility of a sidebar menu on the website. It dynamically adjusts the position of the sidebar by changing its left property, ensuring smooth sliding animation. Additionally, it updates the content of a menu button to reflect the current state of the sidebar (open or closed). This functionality enhances user interaction and provides a seamless navigation experience.

Challenges Encountered and Suggested Solutions

The group faced countless challenges throughout the process of making the website, as there was an evident lack of experience in working in a team and on a major project as such, a challenge the team learned to overcome with time. Several of the issues that plagued the team were the following:

- Timeline: Meeting self-assigned and actual deadlines was a major challenge due to hurdles, delays, and unexpected difficulties. However, the team learned how to distribute the workload effectively, and prioritize the essential tasks.

- Learning Curve: The group members had no previous experience in website development, hence designing and delivering the components of the website and learning languages and frameworks such as php and Express was a challenge. A challenge that was overcome by utilizing online resources and collaborating together.

- Software Issues: There were a number of persistent issues that had to be dealt with throughout development and especially during merging, such as bugs, errors, and flawed features. By debugging, testing, and taking proactive measures the team was able to handle the issues.

- Integration and Merging: The group divided into frontend and backend teams to maximize the efficiency of development but that made integration and merging a difficult task. The team members had to improve communication and learn to utilize GitHub to ease and speed up the process of development.

Tests and Results

Test Case	Description	Steps	Results
User Registration	Ensure users are successfully registered on the website.	Navigate to sign-up page, enter user data, and submit.	The user data gets stored, and user can log in.
Data Storage	Ensure data about users and items is stored correctly in the database.	Sign up a user or list an item and check the database for the new data.	Data is successfully stored in the database.
Car Listing	Ensure cars are listed and appear on the website.	check if the website displays all the cars it.	The cars are successfully listed.
Car Purchasing	Ensure the use can purchase a car	Try signing in and purchase a car	User can purchase the car
Car Inventory	Ensure that the user can see his purchases in the inventory	Checking in the website after purchasing if the car appear in the inventory	The car is successfully appearing in the inventory

Table 14: The general test cases and expected responses.

Future Works

In the future, we plan to implement several enhancements to further improve user experience and security on our website. Firstly, we aim to integrate a chat system to facilitate real-time communication between users and customer support, enhancing engagement and providing timely assistance. Additionally, we intend to expand our car inventory, offering a wider range of models to cater to diverse customer preferences. Furthermore, we aspire to revamp the aesthetic of the website, incorporating modern design elements and intuitive navigation for a visually appealing and user-friendly experience. Lastly, security remains a top priority, and we will implement robust measures such as data encryption, secure authentication methods, and regular security audits to safeguard user information and ensure a safe browsing environment.

References

https://drawsql.app/