Assignment 1: Create a Static Homepage Layout Using Bootstrap

Aim

To design and implement a responsive static homepage for the Auto World web application using Bootstrap components such as containers, jumbotron (or hero section), headers, buttons, and the grid system. The objective is to create a structured, visually appealing, and adaptive layout that provides an optimal viewing experience across various devices including desktops, tablets, and smartphones.

Theory

The homepage is the first and most important section of any web application, as it serves as the entry point for users and sets the tone for the overall design and functionality of the site. For the Auto World pre-owned car buying and selling platform, the homepage is designed to introduce users to the platform, display featured cars or categories, and provide easy navigation to other sections such as Buy Cars, Sell Cars, Contact, and Login.

To build a responsive static homepage, the Bootstrap framework is used. Bootstrap is a free and open-source front-end toolkit developed by Twitter that helps developers create responsive and mobile-first web pages quickly. It provides a wide range of pre-defined CSS classes and components such as buttons, containers, grids, cards, and navigation bars, making the design process faster and more consistent.

1. Introduction to Bootstrap
Bootstrap follows a mobile-first approach, meaning the website layout is optimized first for smaller devices and then progressively enhanced for larger screens. It uses CSS Flexbox and a 12-column grid system, which allows developers to create flexible and organized layouts.

Bootstrap can be added to a project in two ways:
• Using CDN (Content Delivery Network)
• Using npm (for React-based projects)

2. Bootstrap Container and Grid System

At the heart of every Bootstrap layout is the container, which provides a responsive, fixed-width structure for the webpage's content. The grid system divides the page into 12 columns. Using classes like .row and .col, developers can define how much space each element occupies across different screen sizes.

3. Designing the Homepage Layout

The homepage for Auto World typically consists of the following sections:

• Header and Navigation Bar

• Hero Section (Jumbotron)

• Featured Cars Section

• Call-to-Action Section

• Footer Section

Bootstrap classes such as .d-flex, .justify-content-center, and .align-items-center help align elements properly, while spacing utilities like .m-3 (margin) and .p-3 (padding) ensure a clean and balanced look.

4. Ensuring Responsiveness

Responsiveness is a key feature of Bootstrap. The framework includes predefined classes like .col-sm-, .col-md-, .col-lg-, and .col-xl- to adjust layouts according to screen width. This ensures that all elements, including text, images, and buttons, resize and reposition appropriately.

5. Advantages of Using Bootstrap

• Fast Development

• Consistency

• Responsiveness

• Customizable

• Cross-Browser Compatibility

Code:

```html
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8" />

  <meta name="viewport" content="width=device-width, initial-scale=1.0" />

  <title>AutoHub - Drive Your Dream</title>

  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet" />

  <link href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.4.0/css/all.min.css" rel="stylesheet" />

  <style>

    :root { --primary:#007bff; --secondary:#6c757d; --dark:#121212; --accent:#ffb703; }

    body { background:linear-gradient(180deg,#f8f9fa,#e9ecef); font-family:'Poppins',sans-serif; color:#212529; }

    .navbar { background:#121212; } .navbar-brand{color:#ffb703;font-weight:bold;} .nav-link{color:white;margin:0 8px;}

    .hero { text-align:center;padding:120px 0;background:linear-gradient(135deg,#000,#343a40);color:white; }

    .hero h1{font-size:48px;font-weight:700;} .btn-primary{background:#ffb703;border:0;}

    .stats{background:#fff;padding:50px 0;text-align:center;}

    .stat-item{padding:20px;} .stat-item h3{color:#007bff;font-weight:bold;}

    .car-card{background:#fff;border-radius:10px;box-shadow:0 3px 6px rgba(0,0,0,0.1);padding:20px;text-align:center;transition:0.3s;}

    .car-card:hover{transform:translateY(-5px);box-shadow:0 8px 16px rgba(0,0,0,0.2);}

    footer{background:#121212;color:white;padding:20px 0;text-align:center;margin-top:40px;}

  </style>

</head>

<body>

  <!-- Navbar -->

  <nav class="navbar navbar-expand-lg navbar-dark">

    <div class="container">

      <a class="navbar-brand" href="#">AutoHub</a>

      <button class="navbar-toggler" data-bs-toggle="collapse" data-bs-target="#navMenu"><span class="navbar-toggler-icon"></span></button>

      <div class="collapse navbar-collapse" id="navMenu">
```

```
<ul class="navbar-nav ms-auto">

    <li class="nav-item"><a href="#"
class="nav-link">Home</a></li>

    <li class="nav-item"><a href="#"
class="nav-link">Inventory</a></li>

    <li class="nav-item"><a href="#"
class="nav-link">Financing</a></li>

    <li class="nav-item"><a href="#"
class="nav-link">About</a></li>

    <li class="nav-item"><a href="#"
class="nav-link">Contact</a></li>

    </ul>

    </div>

  </div>

</nav>


<!-- Hero Section -->

<section class="hero">

  <div class="container">

    <h1>Find Your Perfect Ride</h1>

    <p>Explore the best pre-owned cars at
unbeatable prices.</p>

    <a href="#" class="btn btn-primary m-
2">View Cars</a>

    <a href="#" class="btn btn-outline-
light m-2">Sell Your Car</a>

  </div>

</section>


<!-- Stats Section -->
```

```
<section class="stats">

  <div class="container">

    <div class="row">

    <div class="col-md-3 stat-
item"><h3>200+</h3><p>Cars
Available</p></div>

    <div class="col-md-3 stat-
item"><h3>500+</h3><p>Happy
Customers</p></div>

    <div class="col-md-3 stat-
item"><h3>10+</h3><p>Years of
Trust</p></div>

    <div class="col-md-3 stat-
item"><h3>99%</h3><p>Satisfaction
Rate</p></div>

    </div>

  </div>

</section>


<!-- Featured Cars -->

<section class="container my-5">

  <h2 class="text-center mb-4">Featured
Cars</h2>

  <div class="row">

  <div class="col-md-4"><div
class="car-card"><i class="fa-solid fa-car
fa-3x mb-3 text-
primary"></i><h5>Honda
Civic</h5><p>₹8,00,000 | 2019 |
Petrol</p></div></div>

  <div class="col-md-4"><div
class="car-card"><i class="fa-solid fa-
car-side fa-3x mb-3 text-
primary"></i><h5>Hyundai
```

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Creta</h5><p>₹10,50,000 | 2020 | Diesel</p></div></div>

    <div class="col-md-4"><div class="car-card"><i class="fa-solid fa-truck-pickup fa-3x mb-3 text-primary"></i><h5>Maruti Swift</h5><p>₹7,20,000 | 2021 | Petrol</p></div></div>
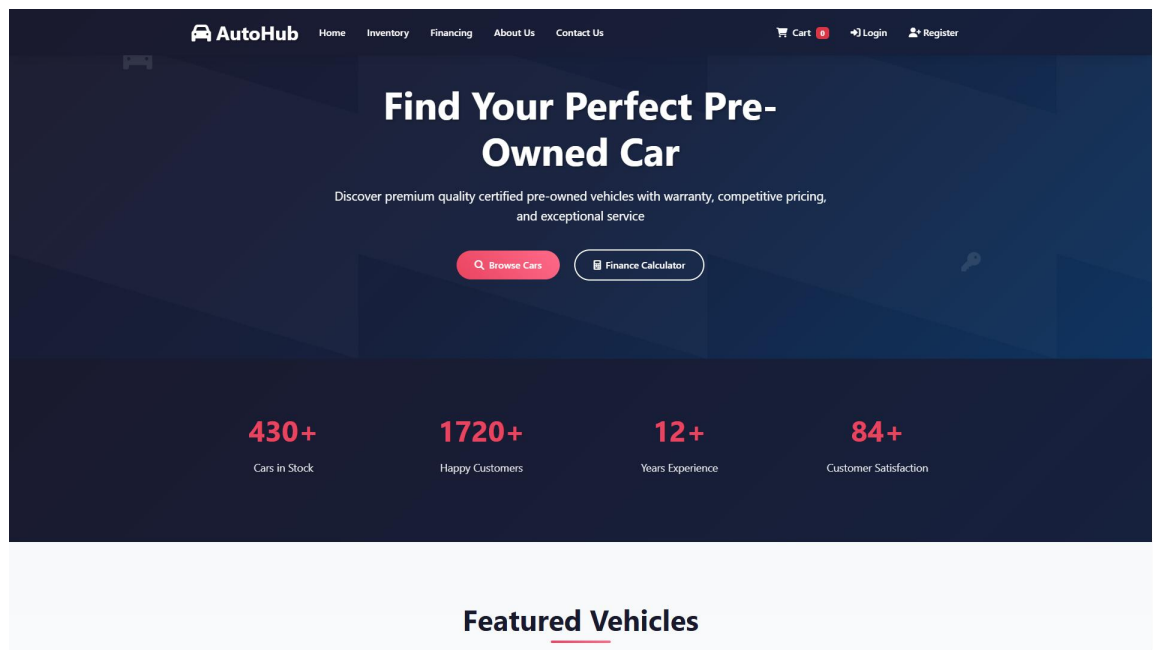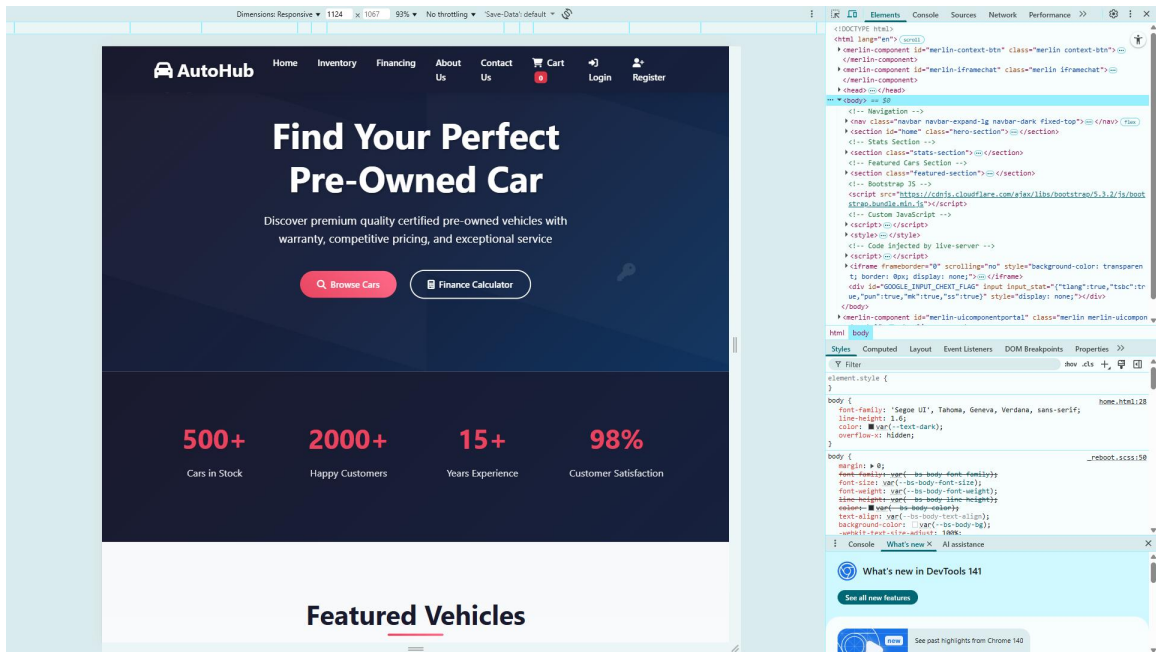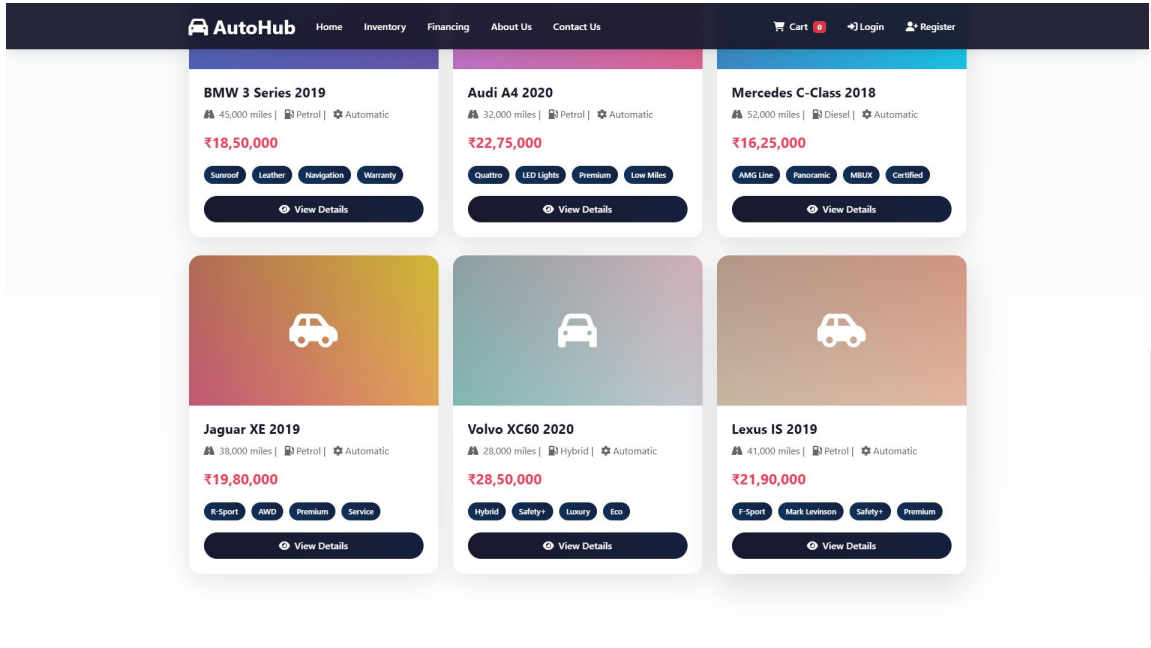
  </div>

 </section>

l>

<!-- Footer -->

 <footer><p>© 2025 AutoHub. All rights reserved.</p></footer>

 <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script>

</body>

</htm

Output:

AutoHub　Home　Inventory　Financing　About Us　Contact Us　　🛒 Cart 0　🔑 Login　👤 Register

BMW 3 Series 2019
🚗 45,000 miles | ⛽ Petrol | ⚙ Automatic

₹18,50,000

Sunroof　Leather　Navigation　Warranty

👁 View Details

Audi A4 2020
🚗 32,000 miles | ⛽ Petrol | ⚙ Automatic

₹22,75,000

Quattro　LED Lights　Premium　Low Miles

👁 View Details

Mercedes C-Class 2018
🚗 52,000 miles | ⛽ Diesel | ⚙ Automatic

₹16,25,000

AMG Line　Panoramic　MBUX　Certified

👁 View Details

Jaguar XE 2019
🚗 38,000 miles | ⛽ Petrol | ⚙ Automatic

₹19,80,000

R-Sport　AWD　Premium　Service

👁 View Details

Volvo XC60 2020
🚗 28,000 miles | ⛽ Hybrid | ⚙ Automatic

₹28,50,000

Hybrid　Safety+　Luxury　Eco

👁 View Details

Lexus IS 2019
🚗 41,000 miles | ⛽ Petrol | ⚙ Automatic

₹21,90,000

F-Sport　Mark Levinson　Safety+　Premium

👁 View Details

AutoHub　Home　Inventory　Financing　About Us　Contact Us　🛒 Cart 0　🔑 Login　👤 Register

Find Your Perfect Pre-Owned Car

Discover premium quality certified pre-owned vehicles with warranty, competitive pricing, and exceptional service

🔍 Browse Cars　　📋 Finance Calculator

500+	**2000+**	**15+**	**98%**
Cars in Stock	Happy Customers	Years Experience	Customer Satisfaction

Featured Vehicles

Conclusion:

In this assignment, a static and responsive homepage was successfully designed using Bootstrap. The use of containers, grid system, and ready-made components helped structure the layout effectively. The homepage created for Auto World provides users with a clear introduction to the platform, highlights its core features, and allows easy navigation to other sections like Buy Cars, Sell Cars, and Contact. Through this experiment, it is concluded that Bootstrap significantly simplifies frontend development by providing a responsive, mobile-first design structure that adapts to different screen sizes, making it an essential tool for modern web application design.

Assignment 2: Design a Grid-Based Information Page

Aim

To design and develop a grid-based information page using Bootstrap's Grid System to organize and display multiple car listings dynamically in the Auto World application. The purpose is to achieve a structured, visually appealing, and responsive layout suitable for displaying cars with consistent spacing, alignment, and adaptability across devices.

Theory

In modern web development, designing a well-structured and responsive layout is a key aspect of ensuring good user experience. Bootstrap provides a powerful Grid System that simplifies the process of creating structured layouts without manually defining CSS rules for different screen sizes. The grid system in Bootstrap is based on a 12-column structure, allowing developers to divide the webpage into rows and columns for content alignment.

In the Auto World project, the Grid System is used to create the 'Buy Cars' page that displays various pre-owned car listings. Each car is represented as a Bootstrap Card component within a grid column. For example, a row can contain three columns (col-md-4), each containing one car card. This ensures that the design is balanced and that the listings are displayed neatly across all devices.

Bootstrap's responsive design automatically adjusts the layout based on screen width. On larger screens, three cars may appear in a single row, while on smaller screens, the same layout collapses to one or two cars per row. This adaptability makes the grid layout essential for maintaining accessibility and aesthetic design.

The 'container' or 'container-fluid' classes in Bootstrap define boundaries for the grid system. Each 'row' serves as a horizontal group of columns, and the columns ('col-*') adjust dynamically based on screen size. Additional utility classes like 'g-3' for gutter spacing and 'p-' or 'm-' for padding and margins ensure proper spacing between cards.

For example, the Auto World page uses the following structure:

• A 'container' to wrap the entire section.

• A 'row' that holds multiple 'col-md-4' columns.

• Each column contains a 'card' component with car details.

This approach creates a visually consistent, modular, and scalable interface that enhances usability.

Code:

```
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8"><meta
name="viewport" content="width=device-
width, initial-scale=1.0">

<title>Shopping Cart - AutoHub</title>

<link
href="https://cdnjs.cloudflare.com/ajax/lib
s/bootstrap/5.3.2/css/bootstrap.min.css"
rel="stylesheet">

<link
href="https://cdnjs.cloudflare.com/ajax/lib
s/font-awesome/6.4.0/css/all.min.css"
rel="stylesheet">

<style>

body{font-family:sans-
serif;background:#f8f9fa}

.navbar{background:linear-
gradient(45deg,#1a1a2e,#16213e)}

.page-header{padding:120px 0
60px;background:linear-
gradient(45deg,#1a1a2e,#16213e,#0f3460)
;color:#fff;text-align:center}

.car-card{background:#fff;border-
radius:15px;padding:15px;margin:10px
0;box-shadow:0 5px 15px rgba(0,0,0,0.1)}
```

```
.car-title{font-weight:700;color:#1a1a2e}

.btn-action{border:none;border-
radius:20px;padding:6px
12px;color:#fff;font-size:.9rem}

.btn-view{background:#0f3460}.btn-
save{background:#ffc107}.btn-
remove{background:#dc3545}

.checkout{background:#fff;border-
radius:15px;padding:20px;box-shadow:0
5px 15px rgba(0,0,0,0.1)}

.btn-
checkout{background:#28a745;color:#fff;
width:100%;border-
radius:30px;padding:10px;font-
weight:600}

</style>

</head>

<body>

<nav class="navbar navbar-dark navbar-
expand-lg fixed-top">

  <div class="container"><a
class="navbar-brand" href="#"><i
class="fas fa-car"></i>
AutoHub</a></div>

</nav>
```

```html
<section class="page-header"><h1>Shopping Cart</h1><p>Review your selected vehicles</p></section>


<div class="container my-5" id="cart"></div>

<div class="container"><div class="checkout"><h5>Order Summary</h5><div id="summary"></div>

<button class="btn-checkout mt-3"><i class="fas fa-lock me-2"></i>Proceed to Checkout</button></div></div>


<script>

const cars=[{id:1,brand:'BMW',model:'3 Series',price:1525000},{id:2,brand:'Audi',model:'A4',price:1875000}];

let cart=[1,2];

function fmt(p){return'₹'+(p/1e5).toFixed(2)+'L'}

function load(){

 let c=document.getElementById('cart'),s=document.getElementById('summary');

 if(!cart.length){c.innerHTML='<p class="text-center text-muted">Your cart is empty.</p>';return;}

 c.innerHTML=cart.map(id=>{

  let x=cars.find(v=>v.id==id);

  return `<div class='car-card d-flex justify-content-between align-items-center'>
    <div><h5 class='car-title mb-1'>${x.brand} ${x.model}</h5><p class='mb-0 text-muted'>${fmt(x.price)}</p></div>
    <div><button class='btn-action btn-view' onclick='view(${id})'><i class='fas fa-eye'></i></button>
    <button class='btn-action btn-save' onclick='save(${id})'><i class='fas fa-heart'></i></button>
    <button class='btn-action btn-remove' onclick='remove(${id})'><i class='fas fa-trash'></i></button></div></div>`;

 }).join('');

 let t=cart.reduce((a,b)=>a+cars.find(x=>x.id==b).price,0);

 s.innerHTML=`<p>Subtotal (${cart.length} items): <b>${fmt(t)}</b></p>

 <p>Registration: ₹0.25L<br>Insurance: ₹0.15L</p><hr>

 <h6>Total: ${fmt(t+40000)}</h6>`;

}
function remove(id){cart=cart.filter(x=>x!=id);load()}

function save(id){alert('Saved '+cars.find(x=>x.id==id).model+' for later');remove(id)}

function view(id){alert('Viewing '+cars.find(x=>x.id==id).model)}

load();

</script>

</body>
```
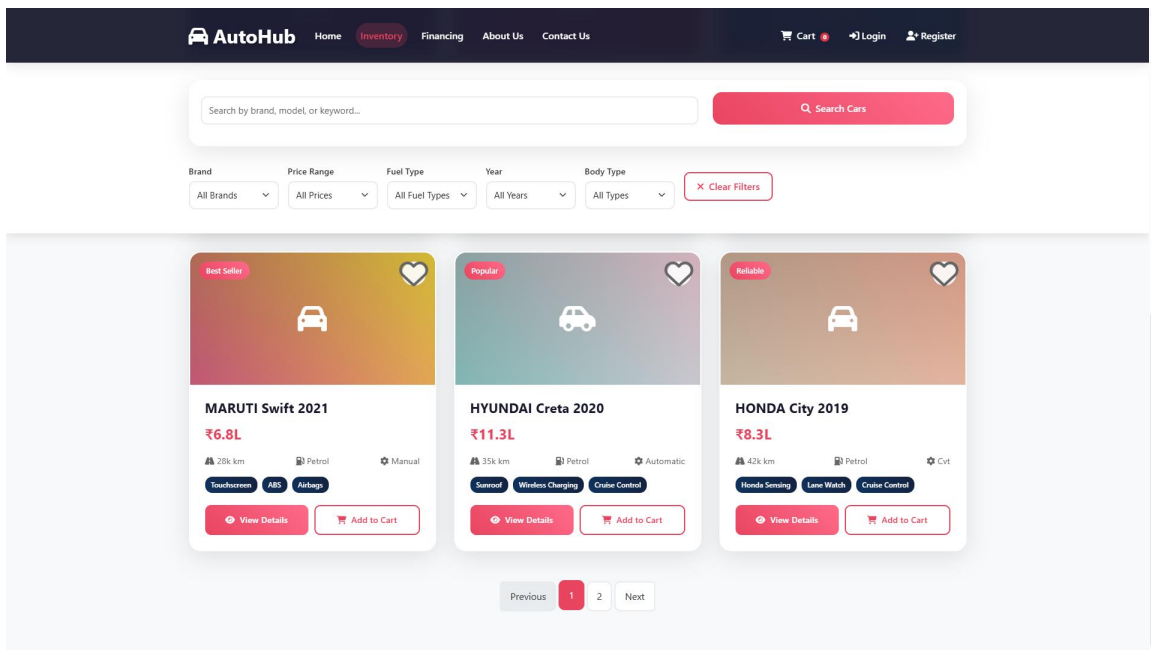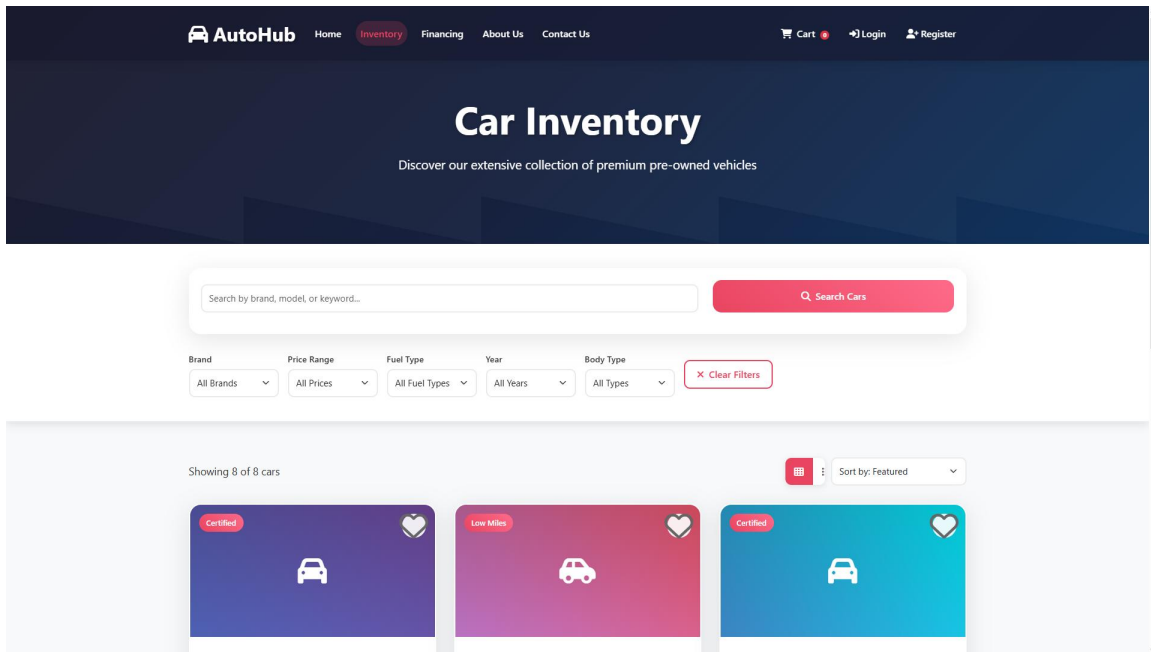
</html>

Output:

Conclusion

The Bootstrap Grid System provides a flexible and efficient structure for displaying content. In the Auto World project, using this system for car listings ensures a well-aligned and responsive layout that enhances the visual presentation and user engagement across all devices.

Assignment 3: Bootstrap Form and Table Integration

Aim

To integrate Bootstrap forms and tables in the Auto World application for efficiently handling user inputs and displaying data such as cart items and order history in a structured and responsive manner.

Theory

Forms and tables are fundamental UI components in web applications. In the Auto World project, forms are primarily used on the Login, Registration, and Sell Cars pages, whereas tables are used on the Cart and Order History pages.

Bootstrap simplifies the process of building visually appealing and user-friendly forms by providing classes like 'form-group', 'form-control', 'form-row', and validation classes ('is-valid', 'is-invalid'). These classes ensure that input elements, labels, and buttons are properly aligned and styled for consistency.

For example, the 'Sell Car' form in Auto World allows users to enter details such as car brand, model, price, and year. Using the 'form-group' and 'form-control' classes, developers can ensure that each input field maintains consistent spacing and visual alignment. Bootstrap also allows inline validation and error display, making the form more interactive and reliable.

Similarly, the 'Checkout' and 'Profile' sections utilize tables to display structured data. Bootstrap provides table styling options like 'table', 'table-striped', and 'table-bordered' to improve readability. The 'table-responsive' class ensures that tables adjust gracefully on smaller screens, enabling users to scroll horizontally if needed.

In the Auto World project, the cart table includes columns such as Car Name, Price, Quantity, and Total Cost. Each row represents a product the user added to their cart. The use of Bootstrap's responsive table ensures that users can easily manage their cart items from any device.

Integrating both forms and tables improves the website's functionality by maintaining design consistency, enhancing usability, and ensuring responsiveness across devices.

Code:

```html
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport"
content="width=device-width, initial-scale=1.0">

<title>Buyer Login - AutoHub</title>

<link
href="https://cdnjs.cloudflare.com/ajax/libs/bootstrap/5.3.2/css/bootstrap.min.css"
rel="stylesheet">

<link
href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.4.0/css/all.min.css"
rel="stylesheet">

<style>

body{font-family:'Segoe
UI';background:linear-gradient(135deg,#f8f9fa,#fff);min-height:100vh}

.navbar{background:linear-gradient(135deg,#1a1a2e,#16213e);box-shadow:0 4px 20px rgba(0,0,0,.1)}

.navbar-brand{color:#fff!important;font-weight:bold}

.login-container{display:flex;flex-wrap:wrap;margin-top:80px;min-height:90vh}

.features-panel{flex:1;background:linear-gradient(135deg,#1a1a2e,#16213e,#0f3460);color:#fff;display:flex;justify-content:center;align-items:center;text-align:center;padding:40px}

.login-panel{flex:1;display:flex;justify-content:center;align-items:center;background:#fff;padding:40px}

form{width:100%;max-width:360px}

.btn-login{background:linear-gradient(45deg,#e94560,#ff6b8a);color:#fff;border:none;padding:10px;border-radius:25px;width:100%}

.btn-login:hover{background:linear-gradient(45deg,#16213e,#0f3460)}

.form-control{border-radius:10px;padding:10px 15px}

.forgot-password{color:#e94560;text-decoration:none;font-size:.9rem}

.success-message{display:none;background:#28a745;color:#fff;padding:10px;border-radius:8px;text-align:center;margin-bottom:10px}
```

```
@keyframes
fadeIn{from{opacity:0;transform:translateY(2
0px)}to{opacity:1;transform:translateY(0)}}

</style>

</head>

<body>

<nav class="navbar navbar-expand-lg navbar-
dark fixed-top">

<div class="container"><a class="navbar-
brand" href="home.html"><i class="fas fa-
car"></i> AutoHub</a></div>

</nav>




<div class="login-container">

<div class="features-
panel"><div><h2>Welcome
Back!</h2><p>Access premium car deals and
features.</p></div></div>

<div class="login-panel">

<form id="loginForm" novalidate>

<h3 class="text-center mb-3">Buyer
Login</h3>

<div class="success-message"
id="successMessage"><i class="fas fa-check-
circle"></i> Login Successful!</div>

<input type="email" class="form-control mb-
3" id="email" placeholder="Email" required>
```

```
<input type="password" class="form-control
mb-3" id="password"
placeholder="Password" required>

<div class="d-flex justify-content-between
mb-3"><div><input type="checkbox"
id="rememberMe"> Remember me</div><a
href="#" class="forgot-
password">Forgot?</a></div>

<button type="submit" class="btn-
login">Login</button>

</form>

</div>

</div>




<script
src="https://cdnjs.cloudflare.com/ajax/libs/bo
otstrap/5.3.2/js/bootstrap.bundle.min.js"></scr
ipt>

<script>

document.getElementById('loginForm').addE
ventListener('submit',e=>{

 e.preventDefault();

 let
email=document.getElementById('email').val
ue.trim(),


pass=document.getElementById('password').v
alue.trim(),
```

```
msg=document.getElementById('successMess
age');

 if(email&&pass){

  msg.style.display='block';


setTimeout(()=>location.href='home.html',15
00);
```

```
}else alert('Please enter valid credentials!');

});

</script>

</body>

</html>
```

Register:

```
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport"
content="width=device-width, initial-
scale=1.0">

<title>Seller Registration - AutoHub</title>

<link
href="https://cdnjs.cloudflare.com/ajax/libs/b
ootstrap/5.3.2/css/bootstrap.min.css"
rel="stylesheet">

<style>

body{font-family:Segoe
UI;background:#f8f9fa;}
```

```
.navbar{background:linear-
gradient(135deg,#1a1a2e,#16213e);}

.page-header{background:linear-
gradient(135deg,#1a1a2e,#0f3460);color:#fff;
padding:100px 0;text-align:center;}

.form-
container{background:#fff;padding:30px;bord
er-radius:10px;box-shadow:0 5px 20px
rgba(0,0,0,0.1);}

.btn-
custom{background:#e94560;color:#fff;borde
r:none;border-radius:30px;padding:10px
30px;}

.success-message{display:none;text-
align:center;color:#28a745;margin-top:20px;}

</style>

</head>
```

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```
<body>

<nav class="navbar navbar-expand-lg navbar-
dark fixed-top">

  <div class="container">

    <a class="navbar-brand" href="#"><i
class="fas fa-car"></i> AutoHub</a>

    <button class="navbar-toggler" data-bs-
toggle="collapse" data-bs-
target="#nav"><span class="navbar-toggler-
icon"></span></button>

    <div class="collapse navbar-collapse"
id="nav">

      <ul class="navbar-nav ms-auto">

        <li class="nav-item"><a href="#"
class="nav-link">Home</a></li>

        <li class="nav-item"><a href="#"
class="nav-link">Inventory</a></li>

        <li class="nav-item"><a href="#"
class="nav-link active">Register</a></li>

      </ul>

    </div>

  </div>

</nav>


<section class="page-header mt-5">
```

```
    <div class="container">

    <h1>Seller Registration</h1>

    <p>Join AutoHub's trusted network of
sellers</p>

  </div>

</section>



<section class="form-section py-5">

  <div class="container">

    <div class="col-lg-8 mx-auto form-
container">

      <h3 class="text-center mb-4">Register
Your Details</h3>

      <form id="sellerForm" novalidate>

      <div class="mb-3"><input type="text"
class="form-control" id="name"
placeholder="Full Name *" required></div>

        <div class="mb-3"><input type="email"
class="form-control" id="email"
placeholder="Email *" required></div>

        <div class="mb-3"><input type="tel"
class="form-control" id="phone"
placeholder="Phone Number *"
required></div>

        <div class="mb-3"><input type="text"
class="form-control" id="car"
placeholder="Car Model *" required></div>
```

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```html
<div class="mb-3"><input type="number" class="form-control" id="price" placeholder="Expected Price *" required></div>

    <button type="submit" class="btn btn-custom w-100">Submit</button>

  </form>

  <div id="successMsg" class="success-message"><i class="fas fa-check-circle"></i> Registration Successful!</div>

  </div>

 </div>

</section>


<script src="https://cdnjs.cloudflare.com/ajax/libs/bootstrap/5.3.2/js/bootstrap.bundle.min.js"></script>

<script src="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.4.0/js/all.min.js"></script>

<script>

document.getElementById('sellerForm').addEventListener('submit',e=>{

  e.preventDefault();

  e.target.style.display='none';


document.getElementById('successMsg').style.display='block';

});

</script>

</body>

</html>
```

Output:

Conclusion

The integration of Bootstrap forms and tables allows for the creation of clean, interactive, and responsive UI components in the Auto World web application. This not only enhances the user experience but also ensures efficient data handling and consistent design across all sections.

Assignment 4: Responsive Design Using Bootstrap Grid and Utilities

Aim

To apply Bootstrap's Grid System and utility classes across all pages of the Auto World application to achieve a consistent, fully responsive design that adapts to various screen sizes and devices.

Theory

Responsive web design ensures that a website looks and functions well across different devices such as desktops, tablets, and smartphones. Bootstrap simplifies responsive design by offering a mobile-first Grid System and various utility classes that help in layout control, alignment, and spacing.

In the Auto World project, responsiveness is implemented across all main pages—Home, Buy Cars, Sell Cars, Contact, Login, and Register. The Bootstrap Grid System divides the layout into 12 columns, which can be customized for different screen sizes using classes like 'col-sm-', 'col-md-', 'col-lg-', and 'col-xl-'. This ensures that components automatically adjust their width and alignment depending on the device.

Bootstrap utilities such as 'd-flex', 'justify-content-center', 'align-items-center', 'm-', and 'p-' are used to fine-tune layout alignment and spacing. For example, 'd-flex' creates a flexible layout model, while 'justify-content-between' or 'align-items-center' manage element positioning. Similarly, margin and padding classes maintain uniform spacing between sections.

Other utilities like 'text-center', 'text-muted', and 'fw-bold' are used to enhance typography and ensure visual balance. The responsive navbar and image scaling also rely on Bootstrap utilities to maintain uniformity.
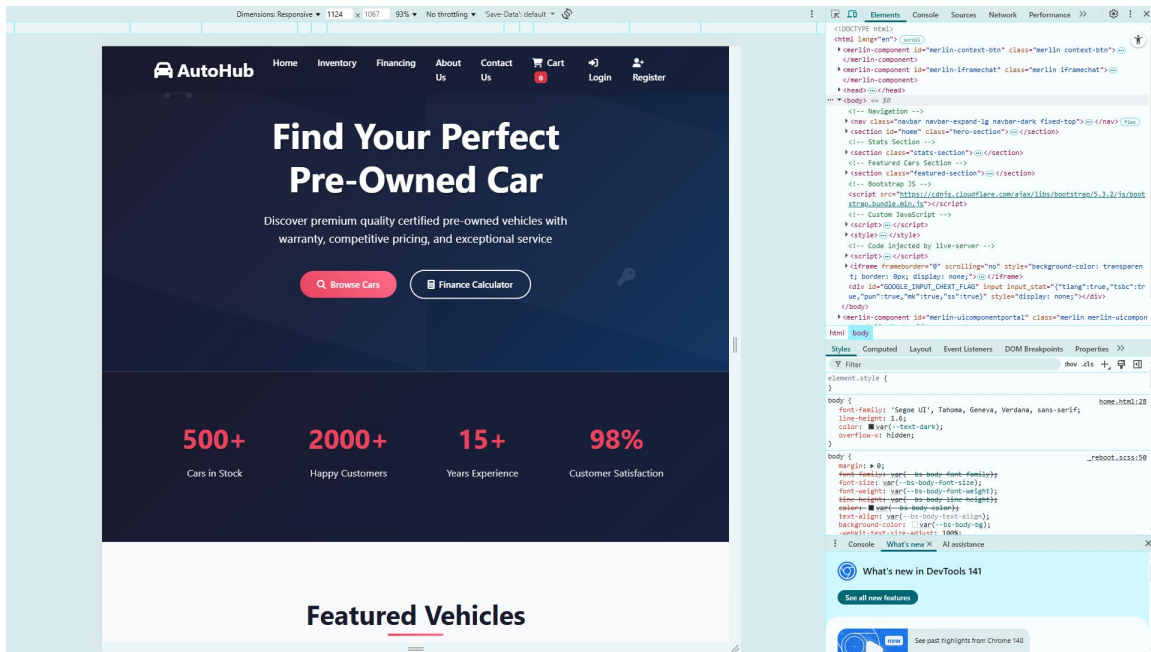
Regular testing is crucial to verify that the layout performs correctly on different screen resolutions. This process involves resizing browser windows or using browser developer tools to test breakpoints.
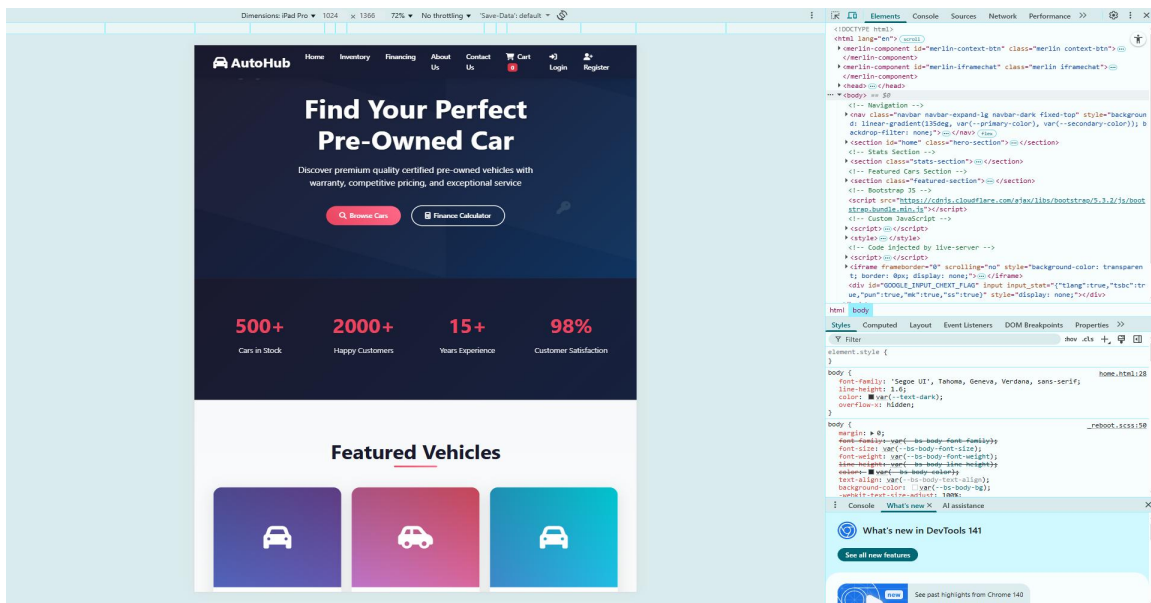
By combining these utilities, developers can build responsive web applications quickly without writing custom media queries for every element.
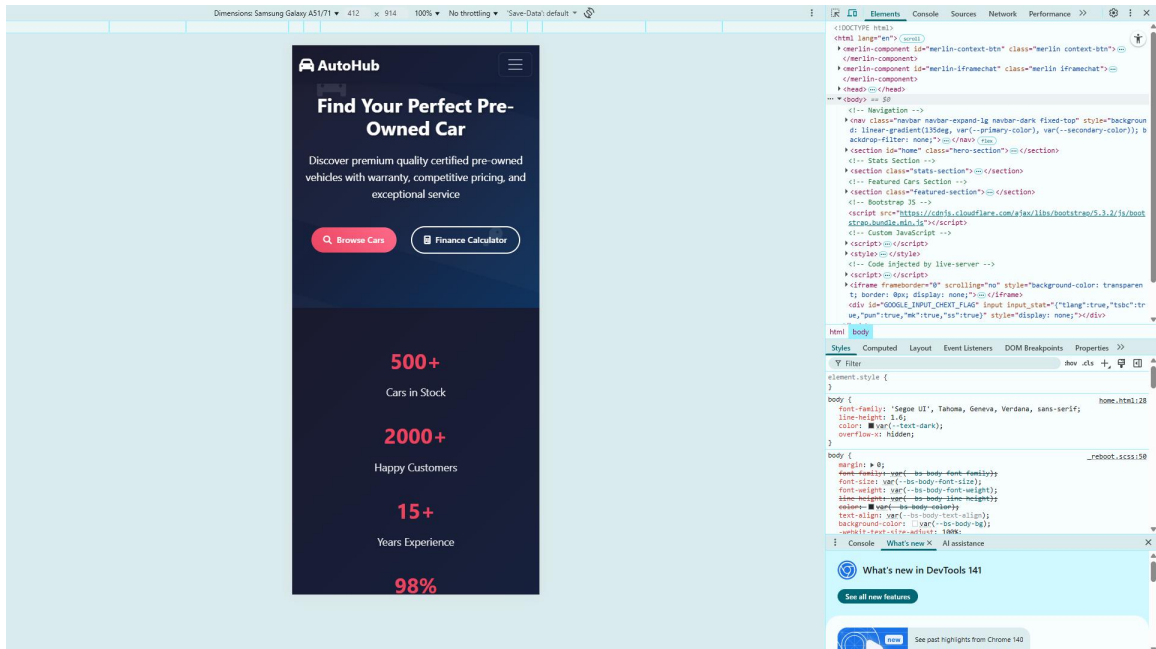
Output:

Screenshot 1: Desktop View

Screenshot 2: Tablet View

Screenshot 3: Mobile View

Conclusion

Applying Bootstrap's Grid System and utilities ensures that the Auto World application is responsive, user-friendly, and visually consistent across all devices. This approach enhances usability, accessibility, and maintains professional design standards for modern web applications.