CAPSTONE PROJECT

E-COMMERCE PRODUCT SHOWCASE

Presented By:

1. ARYA BHAGAT – Graphic Era deemed to be University – BTech



OUTLINE

- Problem Statement
- System Development Approach
- Algorithm & Deployment
- Result
- Conclusion
- Future Scope
- References



PROBLEM STATEMENT

Current Challenges:

- Small businesses lack easy-to-use online platforms to display products
- Existing e-commerce solutions are too complex and expensive
- No lightweight, visually appealing product galleries available
- Difficult for customers to browse, filter, and view product details

Our Solution:

- A modern, responsive e-commerce showcase built with pure frontend technologies that provides:
- Easy product management
- Interactive customer experience
- Zero backend dependency
- Cost-effective implementation



SYSTEM APPROACH

Frontend Technologies:

- HTML5 Semantic structure and accessibility
- **CSS3** Advanced styling, animations, and responsive design
- JavaScript (ES6+) Dynamic interactivity and business logic

Design Philosophy:

- Clean, modern interface with gradient aesthetics
- Mobile-first responsive design
- Smooth animations and transitions
- Intuitive user interactions
- Single-page application architecture



Key Features Implemented:

- Dynamic product grid rendering
- Category-based filtering system
- Interactive shopping cart
- Product modal views
- Real-time price calculations



ALGORITHM & DEPLOYMENT

Product Catalog Creation

```
// Product Schema Definition
const productSchema = {
   id: "Unique identifier",
   name: "Product title",
   category: "electronics|fashion|home|sports",
   price: "Formatted price string",
   description: "Detailed product description",
   icon: "Visual representation emoji"
}
```



Category Architecture

- **Electronics** (4 products)
 - Wireless Headphones Pro
 - Smart Watch Elite
 - Tech Laptop Backpack
 - Portable Bluetooth Speaker
- **Fashion** (3 products)
 - Premium Leather Jacket
 - Designer Sunglasses
 - Premium Denim Jeans
- **A** Home & Living (3 products)
 - Smart Coffee Maker
 - Modern LED Table Lamp
 - Luxury Throw Pillows Set
- Sports (2 products)
 - Performance Running Shoes
 - Premium Yoga Mat



Frontend Architecture

- HTML Structure Semantic layout with modal systems
- CSS Grid & Flexbox Responsive product layouts
- JavaScript Modules Cart management, filtering, animations

Interactive Features

- Add-to-Cart Algorithm Array manipulation with unique IDs
- Filtering System Real-time category-based filtering
- Modal Management Dynamic content loading
- Price Calculation Real-time total updates

Testing & Optimization

- Cross-browser compatibility testing
- Mobile responsiveness validation
- Performance optimization for smooth animations
- User experience testing



Deployment

- **GitHub Repository** https://github.com/Aryaaab/ecommerce-product-showcase.git
- **Repository name** ecommerce-product-showcase
- Live website https://aryaaab.github.io/ecommerce-product-showcase/



RESULT

```
index.html > ♦ html > ♦ head
  1 <!DOCTYPE html>
       <html lang="en">
       <head>
           <meta charset="UTF-8">
           <meta name="viewport" content="width=device-width, initial-scale=1.0">
           <title>Arya Bhagat - Product Showcase</title>
           <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.4.0/css/all.min.css">
  8
           <style>
  9
  10
                   margin: 0;
  11
                   padding: 0;
  12
                   box-sizing: border-box;
  13
  14
  15
               body {
                   font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
  16
  17
                   background: ■#0a0a0a;
                   overflow-x: hidden;
  18
  19
  20
  21
               .animated-bg {
  22
                   position: fixed;
  23
                   top: 0;
                   left: 0;
  24
  25
                  width: 100%;
  26
                   height: 100%;
  27
                   z-index: -1;
                   background: linear-gradient(45deg, ■#667eea, ■#764ba2, ■#f093fb, ■#4facfe);
  28
                   background-size: 400% 400%;
  29
  30
                   animation: gradientShift 15s ease infinite;
  31
  32
               @keyframes gradientShift {
  33
  34
                   0% { background-position: 0% 50%; }
  35
                   50% { background-position: 100% 50%; }
  36
                   100% { background-position: 0% 50%; }
  37
  38
  39
               .particles {
  40
                   position: fixed;
  41
                   top: 0;
  42
                   left: 0;
```

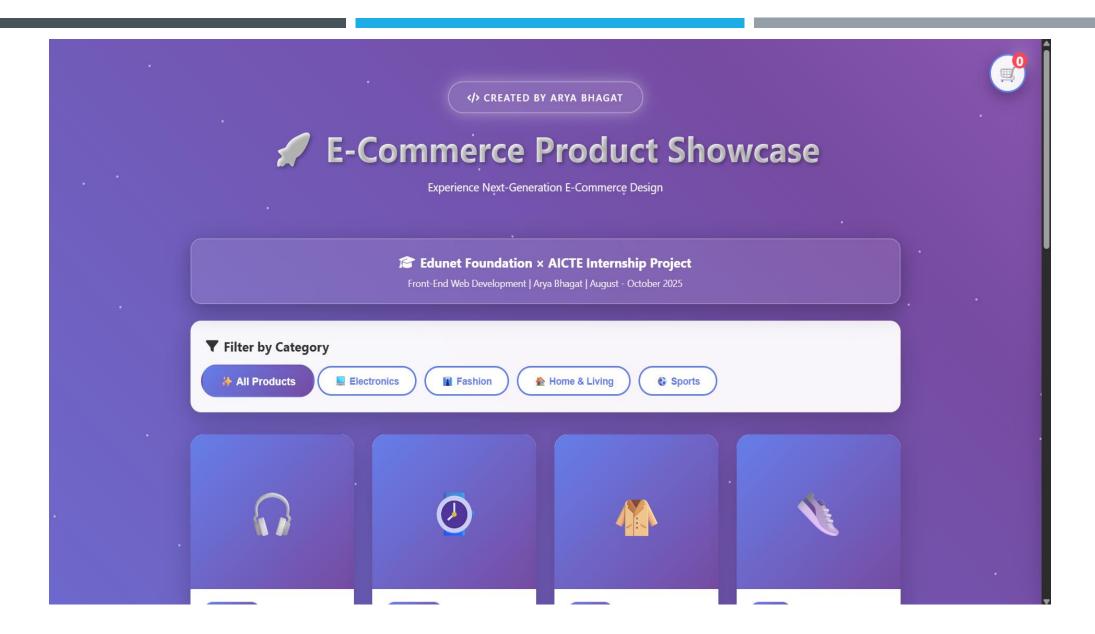


```
index.html > ⇔ html > ⇔ head
  2 <html lang="en">
 790
       <body>
 791
          <!-- Cart System -->
 792
          <div class="cart-icon" onclick="toggleCart()">
 793
 794
              <div class="cart-count" id="cartCount">0</div>
 795
          </div>
 796
 797
          <div class="cart-sidebar" id="cartSidebar">
              <div class="cart-header">
 798
 799
                  <h2 class="cart-title">■ Your Cart</h2>
                  <button class="close-cart" onclick="toggleCart()">&times;</button>
 800
              </div>
 801
 802
              <div class="cart-items" id="cartItems">
 803
                  <!-- Cart items will be dynamically added here -->
 804
 805
              </div>
 806
              <div class="cart-total">
 807
                  <div class="total-label">Total Amount</div>
 808
                  <div class="total-amount" id="cartTotal">$0.00</div>
 809
              </div>
 810
 811
              <div class="cart-actions">
 812
                  <button class="checkout-btn" onclick="checkout()">
 813
 814
                      <i class="fas fa-credit-card"></i> Proceed to Checkout
 815
                  <button class="clear-cart-btn" onclick="clearCart()">
 816
 817
                      <i class="fas fa-trash"></i> Clear Cart
                  </button>
 818
 819
              </div>
          </div>
 820
 821
          <div class="animated-bg"></div>
 822
 823
          <div class="particles" id="particles"></div>
 824
 825
          <div class="container">
              <header>
 826
 827
                  <div class="creator-badge">
 828
                      <i class="fas fa-code"></i> CREATED BY ARYA BHAGAT
 829
                  </div>
 830
```

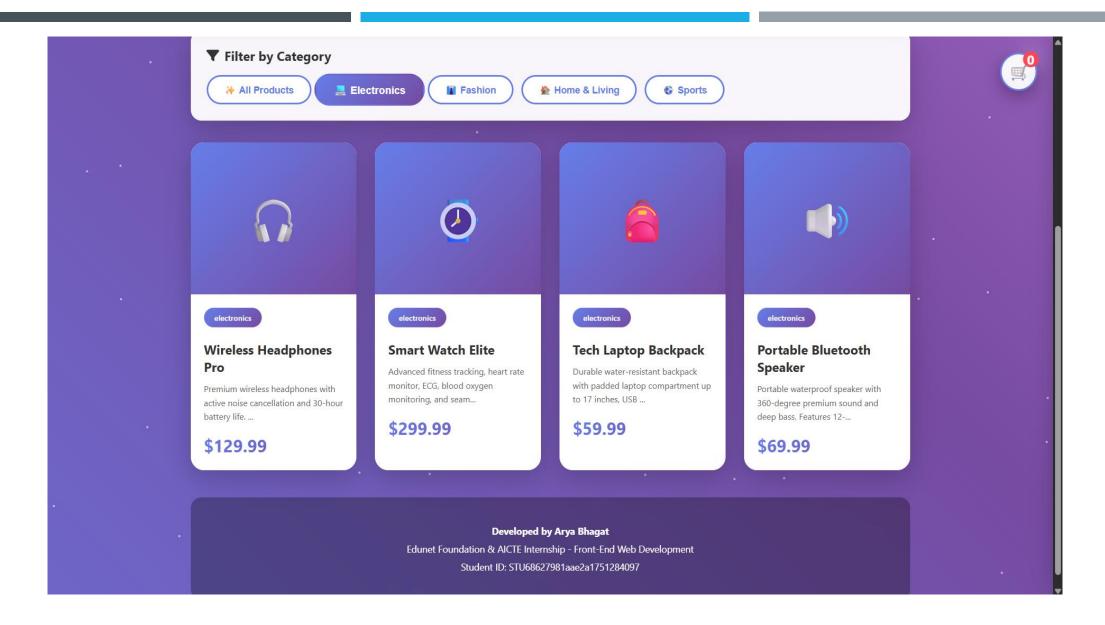


```
createParticles();
893
      const products = [
894
895
              id: 1,
896
              name: "Wireless Headphones Pro",
897
              category: "electronics",
898
899
              price: "$129.99",
              description: "Premium wireless headphones with active noise cancellation and 30-hour battery life. Experience crystal-clear audio quality w
900
              icon: " 🞧 "
901
902
903
              id: 2,
904
              name: "Smart Watch Elite",
905
              category: "electronics",
906
907
              price: "$299.99",
              description: "Advanced fitness tracking, heart rate monitor, ECG, blood oxygen monitoring, and seamless smartphone integration. Stay connec
908
              icon: " @ "
909
910
911
912
              id: 3,
              name: "Premium Leather Jacket",
913
              category: "fashion",
914
915
              price: "$179.99",
              description: "Stylish and comfortable genuine leather jacket with superior craftsmanship. Features a timeless design that works for any sea
916
              icon: " 🗥 "
917
918
919
              id: 4,
920
              name: "Performance Running Shoes",
921
922
              category: "sports",
923
              price: "$89.99",
              description: "High-performance running shoes with advanced cushioning technology and breathable mesh. Engineered for maximum comfort, speed
924
              icon: "\"
925
926
927
928
              id: 5,
929
              name: "Smart Coffee Maker",
```

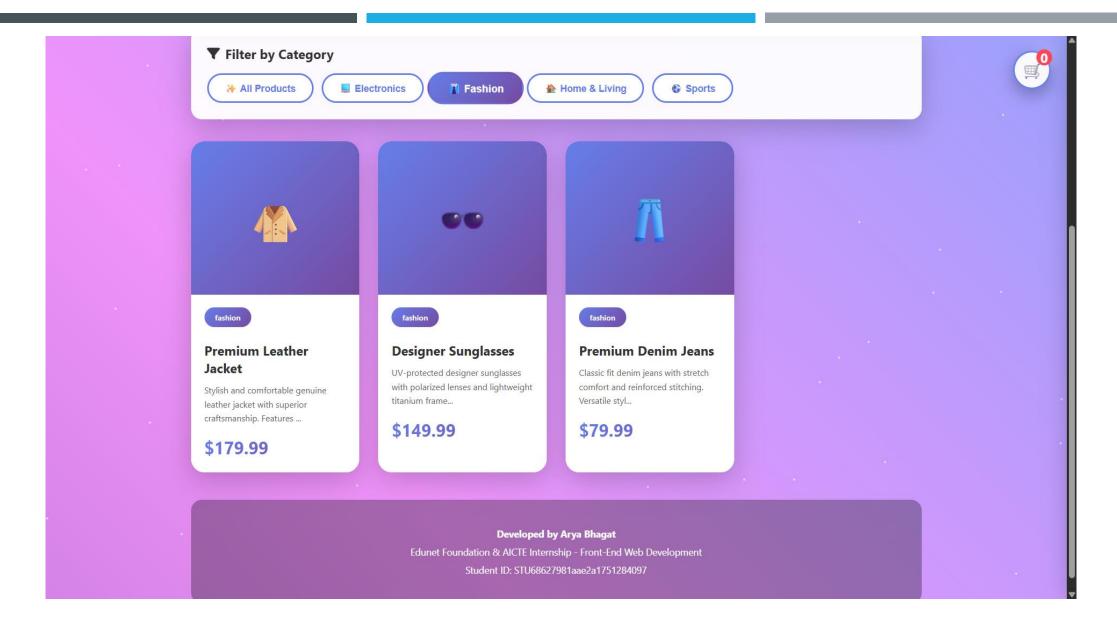




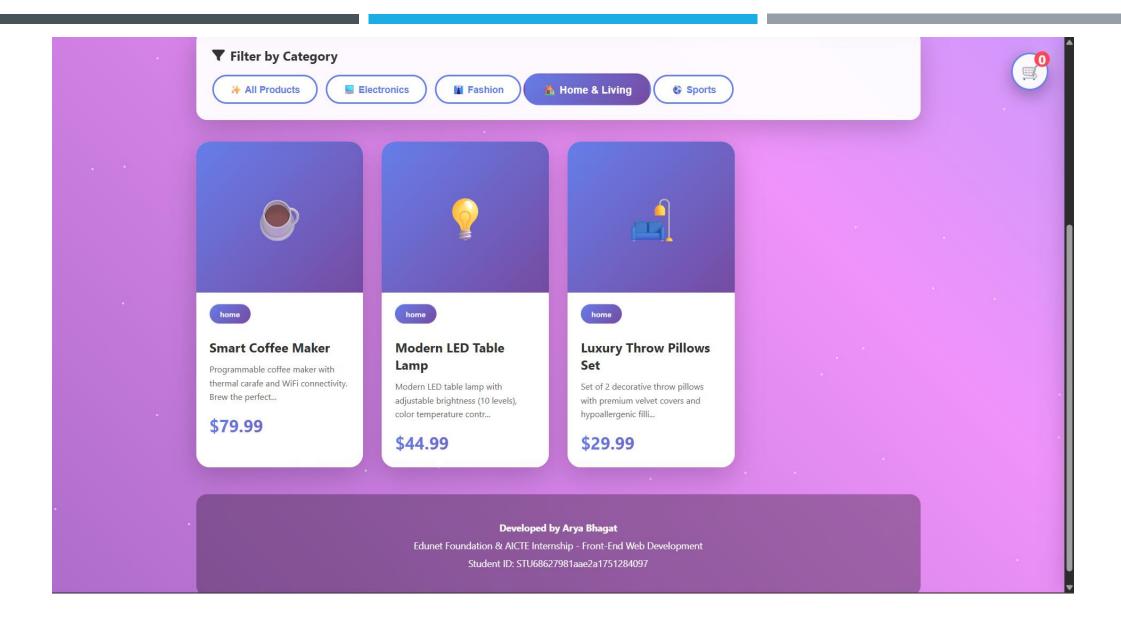




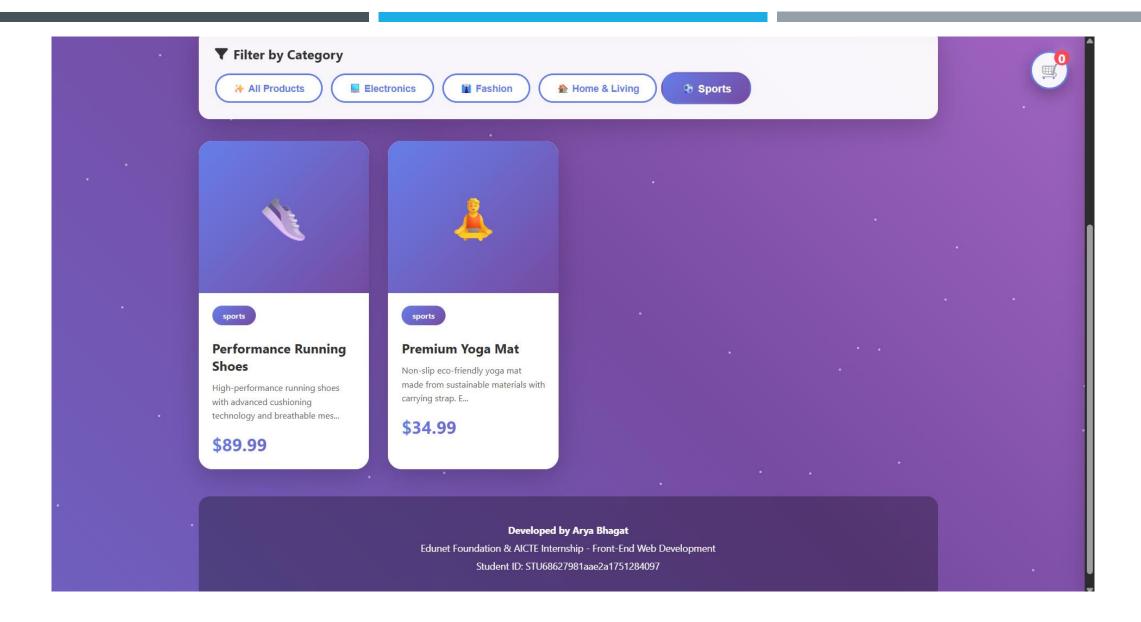




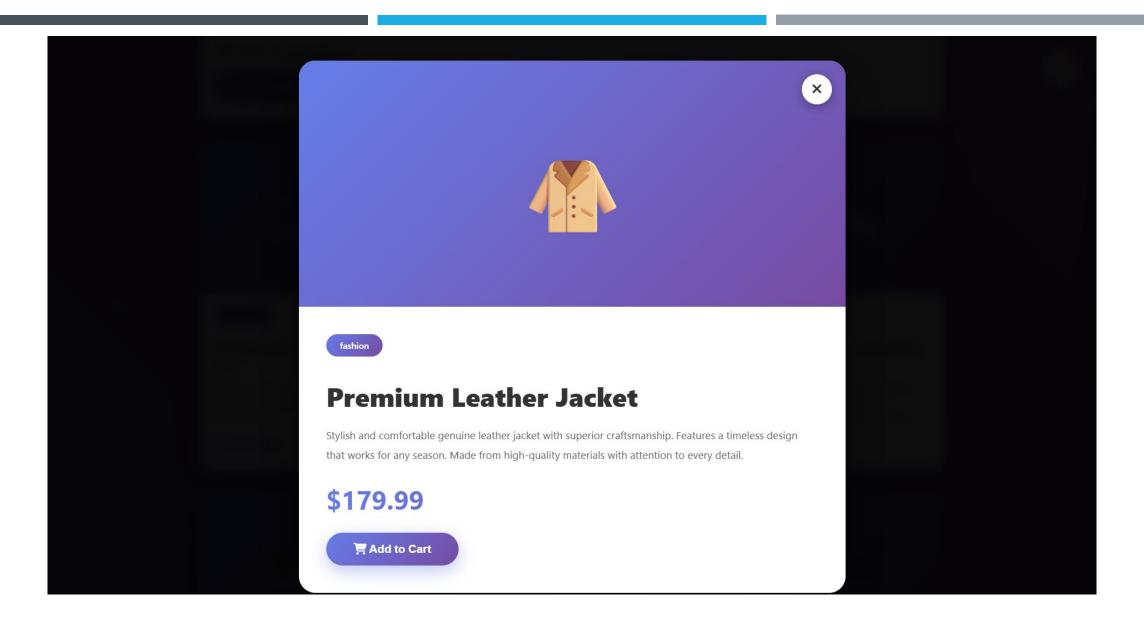




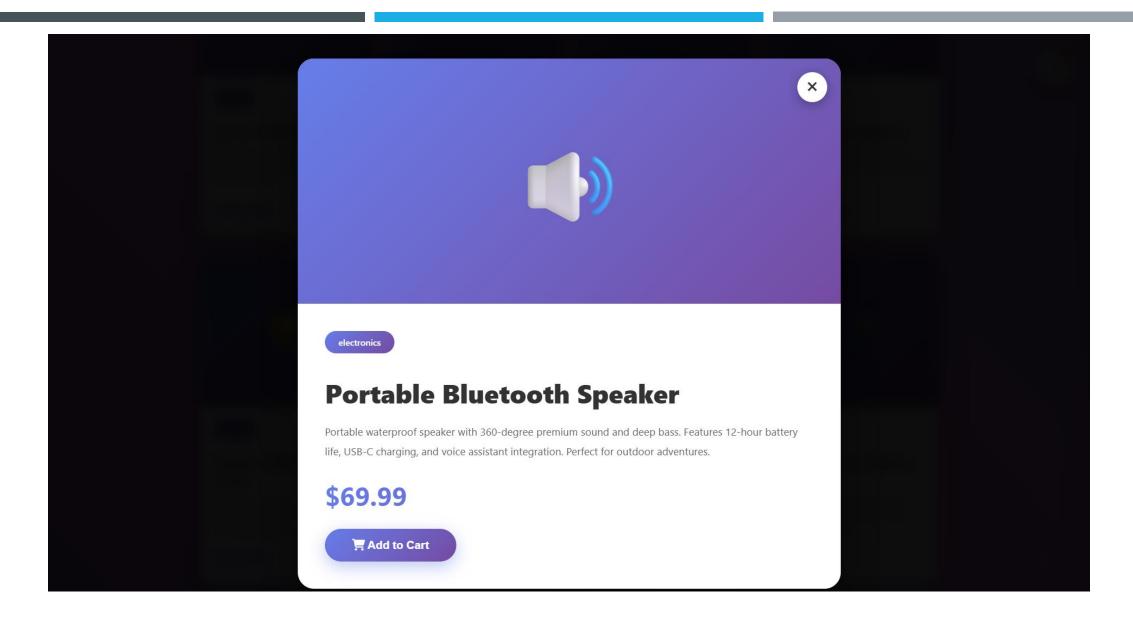




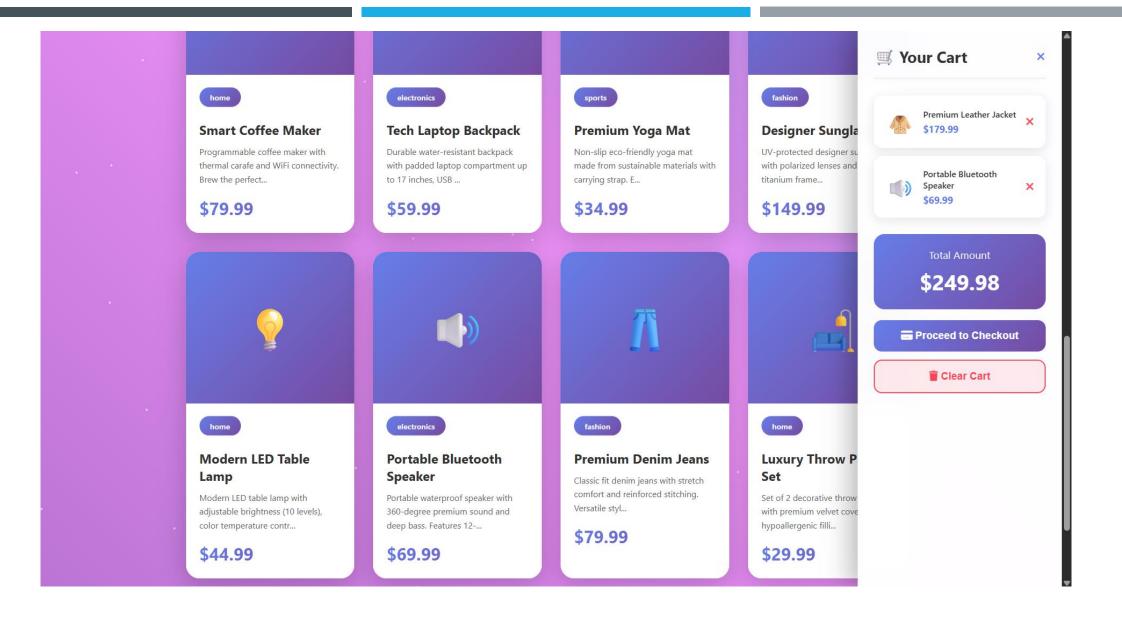




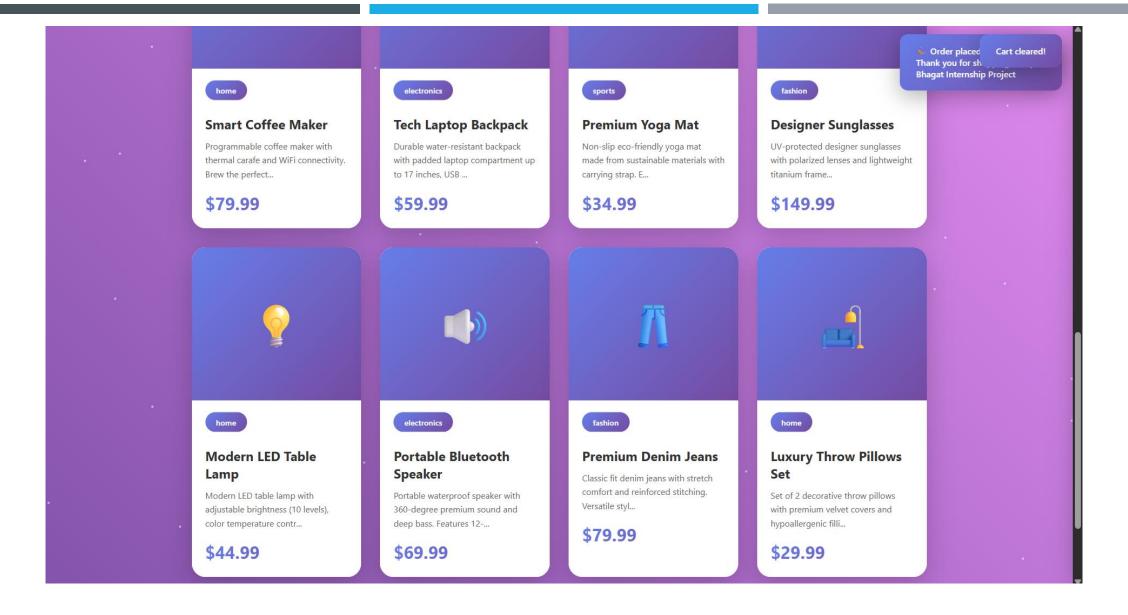














GITHUB AND DEPLOYMNET LINK

- Attach your Github Link: https://github.com/Aryaaab/ecommerce-product-showcase
- Deployment link: https://aryaaab.github.io/ecommerce-product-showcase/



CONCLUSION

Project Impact:

- Cost-effective solution for small businesses
- Eliminates complex platform dependencies
- Provides engaging customer experience
- Demonstrates modern web development skills
- Showcases frontend engineering capabilities

Key Takeaways:

- Successfully built a production-ready e-commerce showcase
- Implemented advanced CSS animations and JavaScript interactions
- Created a scalable architecture for future enhancements
- Demonstrated problem-solving skills in web development



FUTURE SCOPE

Immediate Enhancements:

- Backend Integration (Node.js/Express) for order management
- User Authentication system for personalized experiences
- Product Search functionality with advanced filters
- Wishlist Feature for saving favorite products

Advanced Features:

- Payment Gateway Integration (Stripe/Razorpay)
- Admin Dashboard for inventory management
- Order Tracking System with status updates
- Customer Reviews and rating system



REFERENCES

Technical Resources:

- MDN Web Docs HTML5, CSS3, JavaScript documentation
- **CSS-Tricks** Advanced CSS techniques and animations
- <u>JavaScript.info</u> Modern JavaScript patterns and practices

Educational Resources:

- **Edunet Foundation × AICTE** Internship curriculum and guidance
- Graphic Era deemed to be University Academic foundation in Computer Science
- Online Learning Platforms Continuous skill development



THANK YOU

