Assignment 7: PHP Basics: Creating a Product Catalog Using PHP

Background: As we transition into the second half of this course, we will shift our focus from client-side JavaScript to server-side programming with PHP. In the first half, we worked with the Fetch API to retrieve data from a JSON file on the client side. We will explore how PHP, a powerful server-side scripting language, handles data and generates dynamic content.

PHP differs from JavaScript because it runs on the server before sending the output (HTML) to the client (browser). This allows PHP to interact directly with files, databases, and other server resources, providing the backbone of many dynamic websites and web applications. In this assignment, we will start by creating a simple product catalog using PHP instead of JSON or JavaScript.

Objective: In this assignment, you will use PHP to create a dynamic product catalog page displaying a product list. Each product will have a name, price, and description, and will be rendered on the page using PHP, like how we worked with JSON in JavaScript. This assignment will introduce you to using PHP to generate dynamic HTML and reinforce the transition from client-side to server-side programming.

Requirements:

1. PHP Setup:
   - Create a new PHP file named product_catalog.php.
   - Create a JSON file that defines an array of objects where each element represents a product. Each product should have the following properties:
     i. name (string)
     ii. price (number)
     iii. description (string)
   - You may start with at least five products in the catalog.
2. Dynamic Display of Products:
   - Use PHP to loop through the product array and dynamically generate the HTML needed to display the product catalog.
   - Each product should be displayed with its name, price, and description.
   - Style the catalog with CSS to ensure a visually appealing layout.
3. Product Details:

- Allow users to click on a product name to view more detailed information on a separate product details page. This detail page should display the product name, price, and description.

Deliverables:

- Products.json – A file of JSON data holding product information
- product_catalog.php - The PHP file that dynamically displays the product catalog.
- product_detail.php - The PHP file that displays detailed information about a selected product.
- styles.css - A CSS file to style the catalog layout and the product details page.

Grading Criteria:

- **PHP Basics (30%)**
  - Correct use of arrays and loops to generate dynamic content.
  - Logical and organized structure of the PHP code.
- **Dynamic Display (30%)**
  - Accurate and dynamic rendering of products.
  - Correct use of conditional statements to highlight discounted products.
- **User Experience (20%)**
  - Proper navigation between the product catalog and product details pages.
  - Visually appealing design with the use of CSS for layout and styling.
- **Code Quality and Organization (20%)**
  - Clean, readable, and modular PHP code.
  - Well-organized files and consistent naming conventions.

Conclusion: Students will gain hands-on experience working with PHP to generate web pages dynamically by completing this assignment. They will also deepen their understanding of server-side programming and how it differs from client-side operations like JavaScript. This assignment is the foundation for building more complex web applications in the second half of the course.