WEB PROGRAMMING LAB SPECIFICATIONS

Lab 1: Website Layout, Responsive Design & Navigation Setup

Objective:

- Set up the **basic structure** and layout of the website.
- Implement **responsive design** using CSS.
- Create the **navigation bar** with necessary links.

Tasks:

- **Website Structure:**
  - Create **HTML5 structure**: header, body, footer.
  - Design layout with **appropriate sizes** and colors.
  - Use CSS3 for **responsive design** with media queries.
- **Main Navigation:**
  - Implement **Home**, **Product/Service Categories**, **Contact**, **Login/Signup/Logout** links.
  - The navigation should be **fixed** at the top of the page and adjust properly on mobile devices.
- **Styling:**
  - Choose a **color scheme** and **font family** for the website.
  - Ensure that the website adapts to different screen sizes (desktop, tablet, mobile).

Deliverables:

- **HTML & CSS files** for the website layout and navigation.
- Screenshot of the website on **desktop, tablet, and mobile** views.
- Short report explaining the **layout design** choices.

Evaluation Criteria (15 points total):

Criteria	Points
Website layout & structure	5
Responsive design	5
Navigation bar implementation	5

Lab 2: Database Design, Dynamic Content Display, & Pagination

Objective:

- Set up the **MySQL** database for storing **products** and **categories**.
- Retrieve and display product categories on the website.
- Implement **pagination** or **lazy loading** for displaying product lists.

Tasks:

- **Database Design:**
    - Create **MySQL tables** for products (id, name, description, price, category_id, image) and categories (id, name).
- **Dynamic Product Display:**
    - Display **products** and **categories** retrieved from the database.
    - Implement **pagination** or **lazy loading** to display products in manageable chunks (e.g., 10 products per page).
- **Sorting Options:**
    - Add sorting functionality to display products by **name** or **price**.

Deliverables:

- **SQL script** for creating the database tables.
- **PHP scripts** for displaying products with **pagination/lazy loading**.
- Screenshot showing the **paginated product list** or **lazy-loaded products**.

Evaluation Criteria (20 points total):

Criteria	Points
Database design and structure	5
Dynamic content display	5
Pagination/lazy loading	5
Sorting functionality	5

Lab 3: User Authentication (Login/Signup/Logout), AJAX Search (Weeks 7-9)

Objective:

- Implement **user authentication** with **login**, **signup**, and **logout** functionality.
- Create an **AJAX-based search feature** for products or services.

Tasks:

- **User Authentication:**
  - Create **login**, **signup**, and **logout** forms using **PHP and MySQL**.
  - Implement **password hashing** for security.
  - Use **sessions** to maintain user login states and differentiate between **admin, users, and guests**.
- **AJAX Search:**
  - Implement **AJAX-based search** for products or services by name or category, displaying results dynamically without refreshing the page.

Deliverables:

- **Signup/Login/Logout** forms (HTML, PHP, MySQL).
- **AJAX search** functionality for dynamic product/service search.
- Screenshot of **AJAX search results** and login flow.

Evaluation Criteria (25 points total):

Criteria	Points
User Authentication (Login, Signup, Logout)	10
Session management (Admin/User/Guest)	5
AJAX search functionality	10

Lab 4: Google Maps Integration, Product Management, & Final Touches (Weeks 10-12)

Objective:

- Integrate **Google Maps** for displaying **store locations**.
- Implement **CRUD functionality** for managing products.
- Apply final touches such as styling and testing.

Tasks:

- **Google Maps Integration:**
  - Use the **Google Maps API** to display **store locations** on a map.
  - Store locations should be fetched dynamically from the database and displayed on the map.
- **Product Management:**
  - Implement **CRUD operations** for managing products:
    - **Add new products**, **update** existing products, **delete products**.
  - Each product should have a **profile** with details (name, price, description, image, category).
- **Final Touches:**
  - Review and polish the website's **responsive design**.
  - Test all **features** for functionality and compatibility across devices and browsers.

Deliverables:

- **Google Maps integration** to show store locations.

- **PHP scripts** for managing products (add, edit, delete).
- **Final working website** with all features integrated.
- **Final report** describing the features and technologies used.

Evaluation Criteria (30 points total):

Criteria	Points
Google Maps integration	10
Product management (CRUD)	10
Final website functionality	10

Total Evaluation (100 points)

Category	Points
Lab 1: Website Layout	15
Lab 2: Database & Pagination	20
Lab 3: User Authentication & AJAX Search	25
Lab 4: Google Maps & Final Touches	30
Total	**100**

Evaluation Methodology

- **Code Quality (40%)**: Clean, well-organized code.
- **Functionality (40%)**: Website features work as expected.
- **Design (10%)**: Visual appeal, responsiveness, and usability.
- **Report (10%)**: Clear explanation of the work done, design decisions, and challenges faced.

Conclusion

By the end of these 4 labs, students will have developed a **dynamic e-commerce website** with multiple functionalities, including **user management**, **AJAX search**, **Google Maps integration**, and **CRUD operations**. This project will help students become proficient in full-stack web development and the **SDLC process**.