## **📝 Classroom Assignment: Password Manager (Mini Project)**

### **📌 Objective:**

Design and develop a **Password Manager** that securely stores login credentials for various websites and includes a built-in password generator. The application should be intuitive, functional, and simulate real-world utility.

### **📦 Tech Stack Options:**

* **Frontend Only Version:** HTML, CSS, JavaScript (localStorage)
* **Full Stack Version (Optional):** HTML, CSS, JavaScript, Node.js (Express), JSON/MongoDB

### **🎯 Functional Requirements:**

1. **Add New Credential**
   * Fields: Website, Username, Password
   * Option to auto-generate password
2. **Display Saved Credentials**
   * Show website, username, and password
   * Passwords can be toggled (show/hide)
   * Copy password button using Clipboard API
3. **Search Functionality**
   * Search credentials by website name
4. **Edit and Delete Credentials**
   * Allow users to update or remove stored entries
5. **Password Generator**
   * Let users generate a password with:  
     + Customizable length (min 8 chars)
     + Toggle for symbols, numbers, uppercase, lowercase
   * Optional: Show password strength indicator

### **🗃️ Data Storage (Choose One)**

* **Frontend-only:** Store credentials using localStorage
* **Backend Option (Bonus):** Save to a JSON file or MongoDB collection using an Express API

### **🔐 Bonus Features (Optional)**

* Encrypt passwords before saving (e.g., using crypto-js)
* Export credentials as CSV/JSON
* Responsive design for mobile
* Dark mode toggle

### **🧠 Instructions for Students:**

* Focus on **form validation** and **user experience**
* Keep your code modular and readable
* Use meaningful class and function names
* If using backend, maintain a clear route structure (/add, /get, /delete, /update)

### **📂 Suggested Folder Structure**

#### **🖥️ Frontend Only**

password-manager/

├── index.html

├── style.css

└── script.js

#### **🌐 Full Stack Version**

password-manager/

├── client/

│ ├── index.html

│ ├── style.css

│ └── script.js

├── server/

│ ├── index.js

│ └── passwordData.json (or MongoDB)

└── package.json

### **📤 Submission Requirements:**

* Upload your project folder or GitHub repo
* Demo video or live walkthrough (optional but encouraged)
* Include README.md with brief explanation