Assessment

Module 8: JavaScript Essentials and Advanced

Scenario:

You are an intermediate JavaScript developer at **Swan Solution Pvt. Ltd**. The company wants a **Hotel Management System** to eliminate paper-based guest registration processes Web App. The app must be responsive, interactive, and follow good programming practices.

Core Functionality	
1.Responsive Form Creation	● Create a form with the following fields: ○ Full Name (Text) ○ Phone Number (Number) ○ Email Address (Email) ○ Address (Textarea) ○ Aadhar Card Number (Number) ○ Check in date & Check Out date (Date) ○ No of Adult ○ Purpose of visit (Textarea) ● Mobile-friendly layout using **Bootstrap Grid**
2. Validation Rules with Advanced JavaScript	**Class:** CustomerFormHandler ● validateForm() – Validate: ○ Name ≥ 3 characters ○ Phone exactly 10 digits ○ Valid email format (Regex) ○ Address details not empty ○ Aadhar Card Number : Exactly 12 digits ○ Check in date & Check Out date : Future date validation

	○ No of Adult : Number Validation ○ Purpose of visit : Required Field ● saveToLocalStorage() – Save data as array in localStorage ● clearForm() – Reset form after submission ● showMessage() – Reusable UI message box for success/error Additional Requirements: ● Use **event delegation** for handling form events Implement **real-time validation** (on input or blur)
3. View Submissions Page (view.html)	**Class:** SubmissionViewer ● Read from localStorage ● Dynamically generate table of submissions ● Search bar to filter by **Name** or **Date** ● Show **"No data found"** message if results empty **Optional Bonus Tasks** ● Add **Delete** button to remove individual records ● Use **utility module** for setItem() and getItem() (modularized code) ● Implement **import/export** (<script type="module"> or bundler like Vite/Webpack)

Validation Rules

- All fields required
- Name ≥ 3 characters
- Phone exactly 10 digits
- Valid email format
- Complaint ≥ 10 characters

Key Competencies Tested

- ES6 Classes & Modules
- DOM Manipulation & Event Handling
- Real-Time & Manual Form Validation
- LocalStorage CRUD Operations
- Dynamic HTML Rendering & Filtering
- Clean, Modular, and Reusable Code

Reflective Thinking Questions

- How could this app be enhanced by integrating with an **API** (e.g., saving data to a backend)?
- How can error handling be improved for a better **user experience**?
- What security concerns arise when storing customer data in localStorage?
- Could the app be scaled into a **PWA** (Progressive Web App) for offline use?