

# Assessment

## Module 8: JavaScript Essentials and Advanced

### Case Overview

#### 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                  | <p>Create a form with the following fields:</p> <p>Full Name (Text)<br/>Phone Number (Number)<br/>Email Address (Email)<br/>Address (Textarea)<br/>Aadhar Card Number (Number)<br/>Check in date &amp; Check Out date (Date)<br/>No of Adult<br/>Purpose of visit (Textarea)</p> <p>Mobile-friendly layout using <b>Bootstrap Grid</b></p>                                                                                                                                                            |
| 2. Validation Rules with Advanced JavaScript | <p><b>Class:</b> CustomerFormHandler<br/>validateForm() – Validate:</p> <p>Name ≥ 3 characters</p> <p>Phone exactly 10 digits<br/>Valid email format (Regex)<br/>Address details not empty<br/>Aadhar Card Number : Exactly 12 digits<br/>Check in date &amp; Check Out date : Future date validation<br/>No of Adult : Number Validation<br/>Purpose of visit : Required Field</p> <p>saveToLocalStorage() – Save data as array in localStorage</p> <p>clearForm() – Reset form after submission</p> |

|                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                            |
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|                                                                                                                                                                                                                                                                                   | <p>showMessage() – Reusable UI message box for success/error</p> <p>Additional Requirements:<br/>Use <b>event delegation</b> for handling form events</p> <p>Implement <b>real-time validation</b> (on input or blur)</p>                  |
| 3. View Submissions Page (view.html)                                                                                                                                                                                                                                              | <p><b>Class:</b> SubmissionViewer</p> <p>Read from localStorage</p> <p>Dynamically generate table of submissions</p> <p>Search bar to filter by <b>Name</b> or <b>Date</b></p> <p>Show <b>“No data found”</b> message if results empty</p> |
| <p><b>Optional Bonus Tasks</b></p> <p>Add <b>Delete</b> button to remove individual records</p> <p>Use <b>utility module</b> for setItem() and getItem() (modularized code)</p> <p>Implement <b>import/export</b> (&lt;script type="module"&gt; or bundler like Vite/Webpack)</p> |                                                                                                                                                                                                                                            |

### Validation Rules

- All fields required
- Name  $\geq 3$  characters
- Phone exactly 10 digits
- Valid email format
- Complaint  $\geq 10$  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?