



NETAJI SUBHAS UNIVERSITY OF TECHNOLOGY

Practical Report

Web Technology

Computer Science Engineering (Internet of Things)

Semester 3

Kushagra Lakhwani

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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1 Introduction

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2 Form With Validation

2.1 Project

Project Description

This project is a Signup form with validation.

Project Showcase

Sign Up

Name

Email

Password

Figure 1: Form With Validation

2.2 Source Code

```
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <meta charset="UTF-8" />
5     <meta http-equiv="X-UA-Compatible" content="IE=edge" />
6     <meta name="viewport" content="width=device-width, initial-scale=1.0"
7     ↪ />
8     <title>SignUp Form</title>
9     <style>
```

```

9      :root {
10         --message-display: none;
11     }
12     body {
13         font-family: "Courier New", Courier, monospace;
14     }
15     main {
16         width: 100%;
17         height: 100vh;
18         display: flex;
19         flex-direction: column;
20         justify-content: center;
21         align-items: center;
22     }
23     form {
24         text-align: center;
25     }
26     form .user-input {
27         display: grid;
28         grid-template-columns: 1fr 1fr;
29         align-items: center;
30         border: 1px solid black;
31         border-radius: 10px;
32         padding: 20px;
33     }
34     input {
35         height: 30px;
36         margin: 10px 0;
37         border-radius: 5px;
38         padding: 5px;
39     }
40     button {
41         margin: 10px 0;
42         border: 1px solid black;
43         border-radius: 5px;
44         padding: 5px 10px;
45         background-color: #f1f1f1;
46     }
47     button:hover {
48         background-color: #ddd;
49     }
50     input:invalid {
51         border: 2px solid red;
52     }
53     input:valid {

```

```

54     border: 2px solid green;
55 }
56 #message {
57     display: var(--message-display);
58 }
59 .valid {
60     color: green;
61 }
62 .invalid {
63     color: red;
64 }
65 footer {
66     width: 100%;
67     text-align: center;
68     text-decoration: none;
69 }
70 footer a {
71     text-decoration: none;
72 }
73 </style>
74 </head>
75 <body>
76 <main>
77 <h1>Sign Up</h1>
78 <form action="/signup" method="POST">
79 <div class="user-input">
80 <label for="name">Name</label>
81 <input required type="text" name="name" id="name" />
82 <label for="email">Email</label>
83 <input required type="email" name="email" id="email" />
84 <label for="password">Password</label>
85 <input
86     required
87     type="password"
88     name="password"
89     pattern="(?=.*\d)(?=.*[a-z])(?=.*[A-Z]).{8,}"
90     id="password"
91 />
92 </div>
93 <button type="submit">Submit</button>
94 </form>
95
96 <div id="message">
97 <h3>Password must contain the following:</h3>
98 <p id="letter" class="invalid">A <b>lowercase</b> letter</p>

```

```

99     <p id="capital" class="invalid">A <b>capital (uppercase)</b>
    ↪ letter</p>
100    <p id="number" class="invalid">A <b>number</b></p>
101    <p id="length" class="invalid">Minimum <b>8 characters</b></p>
102  </div>
103  </main>
104  <footer>
105    &copy; 2022 - 2023
106    <a target="_blank"
    ↪ href="https://github.com/KorigamiK">KorigamiK</a>
107  </footer>
108
109  <script type="text/JavaScript">
110    const form = document.querySelector("form");
111    form.addEventListener("submit", (e) => {
112      e.preventDefault();
113    });
114
115    const password = document.getElementById("password");
116    password.addEventListener("blur", () =>
    ↪ document.documentElement.style.setProperty("--message-display",
    ↪ "none"));
117    password.addEventListener("focus", () =>
    ↪ document.documentElement.style.setProperty("--message-display",
    ↪ "block"));
118
119    const message = document.getElementById("message");
120    const letter = document.getElementById("letter");
121    const capital = document.getElementById("capital");
122    const number = document.getElementById("number");
123    const length = document.getElementById("length");
124
125    password.onkeyup = () => {
126      const lowerCaseLetters = /[a-z]/g;
127      if (password.value.match(lowerCaseLetters)) {
128        letter.classList.toggle("invalid");
129        letter.classList.add("valid");
130      } else {
131        letter.classList.remove("valid");
132        letter.classList.add("invalid");
133      }
134
135      const upperCaseLetters = /[A-Z]/g;
136      if (password.value.match(upperCaseLetters)) {
137        capital.classList.remove("invalid");

```

```
138         capital.classList.add("valid");
139     } else {
140         capital.classList.remove("valid");
141         capital.classList.add("invalid");
142     }
143
144     const numbers = /[0-9]/g;
145     if (password.value.match(numbers)) {
146         number.classList.remove("invalid");
147         number.classList.add("valid");
148     } else {
149         number.classList.remove("valid");
150         number.classList.add("invalid");
151     }
152
153     if (password.value.length >= 8) {
154         length.classList.remove("invalid");
155         length.classList.add("valid");
156     } else {
157         length.classList.remove("valid");
158         length.classList.add("invalid");
159     }
160 };
161 </script>
162 </body>
163 </html>
```

3 Using HTML, CSS & JavaScript

3.1 Project

Project Description

This is a minimal To-do List application written in HTML, CSS and JavaScript. It is a single page application that allows the user to add, edit and delete tasks.

The tasks are added through a form that is displayed at the top of the page. The tasks are displayed in an unordered list below the form. And a delete button is displayed next to each task. The click and submit events are handled by JavaScript functions.

Project Showcase

To-do List

Learn DanceDelete

Play gamesDelete

Do homeworkDelete

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3.2 Source Code

```
1  <!DOCTYPE html>
2  <html lang="en">
3    <head>
4      <meta charset="UTF-8" />
5      <meta http-equiv="X-UA-Compatible" content="IE=edge" />
6      <meta name="viewport" content="width=device-width, initial-scale=1.0"
7        ↪ />
8    <style>
9      body {
10        font-family: "Courier New", Courier, monospace;
11      }
12
13      footer {
14        position: static;
15        width: 100%;
16        text-align: center;
17        text-decoration: none;
18        margin-top: 1rem;
19      }
20
21      footer a {
22        text-decoration: none;
23      }
24
25      .todo-list {
26        display: flex;
27        flex-direction: column;
28        align-items: center;
29        justify-content: space-between;
30        margin-top: 1rem;
31      }
32
33      .todo-list ul {
34        list-style: none;
35        padding: 0;
36      }
37
38      .todo-list li {
39        display: flex;
40        flex-direction: row;
41        justify-content: space-between;
42        max-width: 500px;
43        min-width: 300px;
```

```

43     margin: 0.5rem;
44     padding: 10px;
45     border: 1px solid black;
46     border-radius: 5px;
47 }
48
49 .todo-list li button {
50     border: none;
51     background-color: transparent;
52     cursor: pointer;
53     margin-left: 0.5rem;
54 }
55 .todo-list li button:hover {
56     color: red;
57 }
58 </style>
59 <title>To-do List</title>
60 </head>
61 <body>
62     <main class="todo-list">
63         <h1>To-do List</h1>
64
65         <form class="new-todo__form" action="/new-todo" method="POST">
66             <input type="text" name="todo" placeholder="New Todo" />
67             <button type="submit">Add To-do</button>
68         </form>
69
70         <ul>
71             <li>
72                 <span>Learn Node.js</span>
73                 <button>Delete</button>
74             </li>
75         </ul>
76     </main>
77
78     <footer>
79         &copy; 2022 - 2023
80         <a target="_blank"
81             ↪ href="https://github.com/KorigamiK">KorigamiK</a>
82     </footer>
83
84     <script type="text/javascript">
85         const deleteButtons = document.querySelectorAll(".todo-list li
86             ↪ button");

```

```

86     deleteButtons.forEach((button) => {
87         button.addEventListener("click", (event) => {
88             event.target.parentElement.remove();
89         });
90     });
91
92     const todoList = document.querySelector(".todo-list > ul");
93
94     const addTodo = (todo) => {
95         const todoItem = document.createElement("li");
96         const todoText = document.createElement("span");
97         todoText.innerText = todo;
98
99         const deleteButton = document.createElement("button");
100        deleteButton.innerText = "Delete";
101
102        deleteButton.addEventListener("click", (e) =>
103            e.target.parentElement.remove()
104        );
105
106        todoItem.appendChild(todoText);
107        todoItem.appendChild(deleteButton);
108
109        todoList.appendChild(todoItem);
110    };
111
112    const newTodoForm = document.querySelector(".new-todo__form");
113
114    newTodoForm.addEventListener("submit", (event) => {
115        event.preventDefault();
116
117        const formData = new FormData(event.target);
118        const todo = formData.get("todo");
119        todo.length ? addTodo(todo) : alert("Please enter a todo");
120
121        event.target.reset();
122    });
123
124    addTodo("Learn React");
125    </script>
126    </body>
127    </html>

```

References

- [1] A. Einstein, “Very cool guy. (German) [On the electrodynamics of moving bodies],” *Physics*, vol. 322, no. 10, pp. 891–921, 1905.