

MES's Abasaheb Garware College, Pune

M.Sc. (Computer Science) – II

CS-604-MJP Lab course based on CS-602 and CS-603

Student Name:

Roll No:

Full Stack Development- II Practical Assignment Questions

Sr. No	Assignment	Completion Date	Marks (out of 5)	Signature
1	<p><b>1.1</b> Create a basic React application that displays your name, a short bio, and an image.</p> <p><b>1.2</b> Design a <b>functional component</b> to display a list of 5 favourite movies using <b>JSX</b>.</p> <p><b>1.3</b> Demonstrate the concept of <b>virtual DOM</b> by comparing <b>traditional DOM</b> vs React rendering through a counter example.</p> <p><b>1.4</b> Create <b>reusable components</b> like Header, Footer, and Card, and use them in a homepage layout.</p> <p><b>1.5</b> 5. Build a counter app using <b>useState</b> to increment and decrement a number.</p>			
2	<p><b>2.1</b> Create a functional component using <b>useEffect()</b> that fetches and displays data from an API (e.g., users list).</p> <p><b>2.2</b> Demonstrate the use of <b>useReducer()</b> hook by building a to-do list app with add/delete functionality.</p> <p><b>2.3</b> Create a <b>custom hook</b> to manage form input fields with validation (e.g., email or password).</p> <p><b>2.4</b> Build a theme toggler app using <b>useContext()</b> hook to switch between dark and light modes.</p> <p><b>2.5</b> Create a login form with event handlers for input and submit events. Display the entered values in the console.</p>			

3	<p>3.1 Demonstrate <b>synthetic events</b> by creating a button that logs click and double-click events differently.</p> <p>3.2 Create a multi-page React app using <b>react-router-dom</b> with Home, About, and Contact pages.</p> <p>3.3 Pass parameters through routes and display the dynamic data (e.g., /user/:id should show user details).</p> <p>3.4 Create a protected route that only shows a page if the user is authenticated (mock authentication).</p> <p>3.5 Set up Redux in a React app and create a simple counter using actions and reducers.</p>			
4	<p>4.1 Build a <b>shopping cart app</b> where Redux manages the state of cart items (<b>add, remove, quantity</b>).</p> <p>4.2 Design a <b>login system</b> with mock authentication using hardcoded user data and simulate token-based login using <b>JWT</b> (can be mocked).</p> <p>4.3 Build a <b>notes management app</b> using Redux Toolkit with <b>createSlice()</b> to manage state.</p> <p>4.4 Use <b>RTK Query</b> to fetch posts from a fake API (like JSON Placeholder) and display them with <b>loading/error states</b>.</p> <p>4.5 Demonstrate the migration to Redux Toolkit by converting a <b>traditional Redux app</b> into one using <b>Redux Toolkit</b> and compare both.</p>			
5	<p><b>5.1</b> Create React Application to take input from the user (number, string). Check whether the <b>number is even or odd</b> and also check whether the string is <b>palindrome or not</b>. Display appropriate messages to the user.</p> <p><b>5.2</b> Create a react application to create a <b>Calculator</b>.</p>			

	<p><b>5.3</b> Create a react application which contains a toggle button. When a button is clicked by the user, button text should toggle between ON and OFF and background colour of text should also get changed, visually reflecting the state.</p> <p><b>5.4</b> Create a react application to check whether a <b>number is valid or not</b> and also calculate the <b>sum of the digit of the number</b> entered by the user.</p> <p><b>5.5</b> Create React Application which will perform <b>string operations</b> such as Uppercase, Lowercase, Length of String, Reverse of String.</p>			
	<b>Total</b>			

### **CERTIFICATE**

This is to certify that Mr./Ms. \_\_\_\_\_  
 has successfully completed M.Sc. (Computer Science) – II, CS-604-MJP Lab  
 course based on CS-602 and CS-603 Sem III in Year 2025-26 and his/her seat no  
 is \_\_\_\_\_.