

International Islamic University Chittagong

Department of Computer Science and Engineering

LAB REPORT

Course title : Software Engineering Sessional &

Software Development 2

Course Code : CSE-3638 & 3640

Report No : 07

Report Title : Introduction to Frontend Development with React

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Lab Report: Frontend Development with React

1. Overview

Frontend development with React empowers developers to build responsive, dynamic user interfaces efficiently. This report covers key concepts, implementation practices, challenges faced, and future recommendations.

Sections include:

- Introduction: React's significance in modern web development
- Fundamentals: JSX syntax, component structure, state, and props
- Implementation: Setting up a React environment, event handling, and API interaction
- Advanced Concepts: Routing (React Router), global state management (e.g., Redux or Context API), and performance tuning
- Challenges: Common debugging pitfalls and how to solve them

2. Objectives

- Set up a React project using a tool like Vite or Create React App
- ✓ Develop functional and class-based components
- ✓ Design reusable UI components to build a consistent interface
- ewline
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 fetch () or Axios
- ◆ Handle events such as user input, clicks, and form submissions effectively

3. **★** □ Tools and Environment

1 001	Purpose
Node.js	Runtime environment for JavaScript
VS Code	Code editor with extensions for React
ReactJS	JavaScript library for building UIs

Lab Tasks

1. Set Up a React Project

- Use Vite to scaffold a new React project
- Run the project in development mode (npm run dev or npm start)
- Verify that the app is working in the browser

2. React Components, Props, and State

- Create at least two functional components
- Pass props from a parent to a child component
- Use the useState hook to manage and display dynamic data

3. Create Simple UI Components

- Build a few simple UI elements such as:
 - A header or navbar
 - A card or list to display items
 - A button that updates or toggles content using state

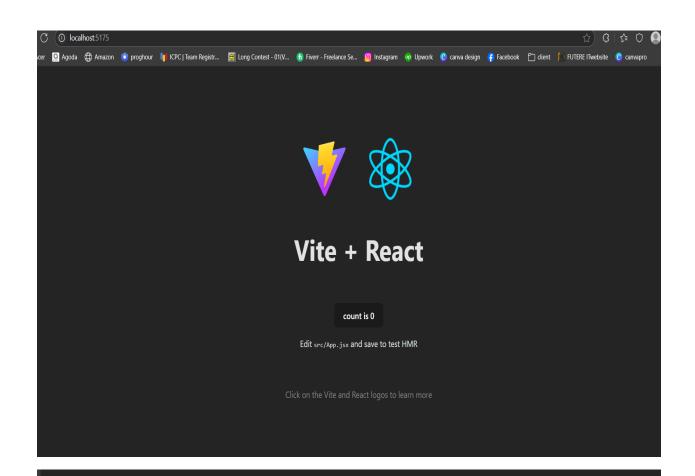
4. Fetch Data from an API

- Use the useEffect hook to fetch data from a public API (e.g., JSONPlaceholder, OpenWeather)
- Display the fetched data in your component using a list or table

5. Form Handling

- Create a simple form with input fields (e.g., name, email)
- Use controlled components to manage input values via state

Handle form submission and display the submitted data or log it



Welcome to React Lab

Hello, Adil khan!

