Practical No. 5
Study and implementation of ReactJs

Perform following problem statements using ReactJs

Problem Statement 0: Basics of ReactJs

- What is React and what problem does it solve?
- What are React components and how are they used?
- What is JSX in React?
- What are props in React and how do they differ from state?
- What is state in React and how does it work?
- What are React lifecycle methods, and why are they important?
- Elaborate following with respect to ReactJs
    - Event Handling
    - Conditional Rendering
    - Lists and Keys
    - Forms
    - Hooks
    - React Router
    - State Management
    - React Context API
- How can you optimize the performance of a React application?

Problem Statement 1: Star Wars character app

(In this problem statement, example of Star Wars is given, you may choose any characters from the series of the movie like Harry Potter, etc. Every group in a batch will have different characters.)

- Using a public API, display a list of all Star Wars characters using the endpoint "/people". The API has paging, so the developer must also implement pagination. Also, a simple loader for fetching/refetching data as well as handling the error state (i.e., if the API server is down).
- For every user, we'd like to display a card with the name of each character along with a random picture for each character (see Picsum photos for random picture inspiration). Each character card should be colored based on their species and have some kind of animation when the user hovers over the card. When we click on a character's card, more information should appear in a modal about the character.
- In the character details modal, we'd like to display information about the person: name as the header of the modal, height displayed in meters, mass in kg, date

person was added to the API (in dd-MM-yyyy format), number of films the person appears in and their birth year. We should also fetch information about the person's homeworld and display its name, terrain, climate, and amount of residents.

Note:

1. Create a **document** of the above website with screenshots.
2. Scan the document and **create a pdf file** with **"ExamSeatNum_P#PS#" as its name**.
3. Upload the file on the **WCE Moodle** before the given deadline.