

## Devpos Assignment

Name: Trisha jha

HT NO: 2303A51947

### **1. How would you set up a new React project using tools like Create React App or Vite?**

#### **Using Create React App (CRA)**

Create React App is an official tool that sets up a React project with all required configuration.

##### **Steps:**

1. Install Node.js (includes npm)
2. Open Command Prompt / Terminal
3. Run:

```
npx create-react-app my-app
```

4. Move into the project folder:

```
cd my-app
```

5. Start the development server:

```
npm start
```

The React app opens in the browser at **http://localhost:3000**.

#### **Using Vite (Faster and modern)**

Vite is a lightweight and fast build tool.

##### **Steps:**

1. Open Command Prompt / Terminal
2. Run:

```
npm create vite@latest my-app
```

3. Select:

- Framework: React
- Variant: JavaScript or JavaScript + SWC

4. Move into the folder:

```
cd my-app
```

5. Install dependencies:

```
npm install
```

6. Start the server:

```
npm run dev
```

The app runs at **http://localhost:5173** (default).

## 2. What is the role of package.json in a React project?

package.json is the **heart of a React project**. It manages the project configuration.

### Main roles:

- Lists project dependencies (React, React DOM, etc.)
- Stores scripts like:
  - npm start
  - npm run dev
  - npm build
- Defines project name and version
- Manages development and production dependencies

### Example:

```
{  
  "name": "my-app",  
  "dependencies": {  
    "react": "^18.2.0",  
    "react-dom": "^18.2.0"  
  },  
  "scripts": {  
    "start": "react-scripts start"  
  }  
}
```

```
}
```

### 3. How do you create a functional component in React?

A **functional component** is a JavaScript function that returns JSX (UI).

#### Example:

```
function Welcome() {  
  return <h1>Welcome to the Dashboard</h1>;  
}
```

```
export default Welcome;
```

Or using arrow function:

```
const Welcome = () => {  
  return <h1>Welcome to the Dashboard</h1>;  
};
```

```
export default Welcome;
```

### 4. How are components rendered inside the main App component?

Components are rendered by **importing them into App.js** and using them like HTML tags.

#### Example:

```
import Welcome from './Welcome';
```

```
function App() {  
  return (  
    <div>  
      <Welcome />  
    </div>  
  );  
}
```

```
}
```

```
export default App;
```

Here:

- Welcome is a child component
- App is the main/root component

## 5. What are the benefits of breaking the UI into small reusable components?

Breaking UI into components is one of React's biggest strengths.

### Benefits:

1. **Reusability** – Same component can be used multiple times
2. **Easy maintenance** – Fix or update one component without affecting others
3. **Better readability** – Code is cleaner and well-organized
4. **Scalability** – Easy to add new features
5. **Faster development** – Teams can work on different components independently

### Example components:

- Header
- Sidebar
- CourseCard
- Footer

