React – JSON-server and Firebase Real Time Database

Question 1: What do you mean by RESTful web services?

RESTful web services are APIs that adhere to the principles of Representational State Transfer (REST), an architectural style for building distributed systems. They use HTTP methods (GET, POST, PUT, DELETE, etc.) to perform CRUD (Create, Read, Update, Delete) operations on resources, which are typically represented as JSON or XML data.

Question 2: What is Json-Server? How is it used in React?

Json-Server is a lightweight tool that provides a full fake REST API based on a JSON file.

How to use it in React:

1. Install Json-Server
2. Create a db.json file with your mock data.
3. Start the Json-Server.
4. Fetch data from Json-Server in your React app using its endpoint

Question 3: How do you fetch data from a Json-Server API in React? Explain the role of fetch() or axios() in making API requests.

1. Use either the fetch() API or the axios library to make API requests.
2. Perform the API call in useEffect to ensure it executes when the component mounts.
3. Handle the response data and store it in state using useState.

-> **fetch()**: A native JavaScript API for making HTTP requests. It provides a simple syntax for handling API responses but requires additional handling for errors.

-> **axios**: A promise-based HTTP client with a richer feature set, such as automatic JSON transformation, request cancellation, and built-in error handling.

Question 4: What is Firebase? What features does Firebase offer?

Firebase is a platform developed by Google to help developers build and scale web and mobile applications. It offers a variety of services, including backend-as-a-service (BaaS) tools.

Features Firebase offers:

1. **Authentication**: Provides secure user authentication using email/password, social login (Google, Facebook, etc.), and custom authentication.
2. **Realtime Database**: A NoSQL cloud database for storing and syncing data in real time.
3. **Cloud Firestore**: A scalable and flexible NoSQL database for mobile, web, and server development.
4. **Cloud Storage**: Secure file storage for user-generated content such as images, videos, etc.
5. **Cloud Functions**: Serverless backend code that executes in response to events.

TASK-1:

```
import React, { useEffect, useState } from "react";
function UserTable() {
  const [users, setUsers] = useState([]);
 useEffect(() => {
    fetch("https://jsonplaceholder.typicode.com/users")
      .then((response) => response.json())
      .then((data) => setUsers(data));
  }, []);
  return (
    <div>
      <h1>Users Table</h1>
      <table border="1" style={{ width: "100%", textAlign: "left" }}>
        <thead>
          <tr>
            <th>ID</th>
            <th>Name</th>
            <th>Email</th>
          </tr>
        </thead>
        <tbody>
          {users.map((user) => (
            <tr key={user.id}>
              <td>{user.id}</td>
              <td>{user.name}</td>
              <td>{user.email}</td>
            </tr>
          ))}
        </tbody>
      </table>
```

```
    </div>
  );
}
export default UserTable;
```