**Question 4**

Part 1: Setting Up User Authentication in Python Django

1. Create Django Project and App

* Create a new Django project and a dedicated app for authentication.

2. Set Up User Model

* Customize the user model to include fields such as email and username.
* I customized the user model to include other fields.
* Configure authentication settings in settings.py.

3. Implement Registration and Login Views

* Create views for user registration and login.
* Implement forms or serializes to validate user input.
* Handle POST requests to create new users and authenticate existing ones.

4. Implement Authentication Middleware

* Configure authentication middleware to identify and authenticate users.
* Use tokens for user authentication.

5. Protect Endpoints

* Use decorators or mixins to restrict access to specific views or endpoints.
* Implement role-based access control if needed be

**QUESTION 5**

**Implementing User Authentication in React**

1. Create React App

* Set up a new React app using create-react-app.

2. Set Up Routes and Navigation

* Implement routing using a library like React Router.
* Create routes for login, registration, and protected pages.

3. Implement Registration and Login Components

* Create components for user registration and login forms.
* Use state and controlled components for form inputs.
* Handle form submissions and API requests.

4. Implement Authentication Context

* Create an authentication context to manage user authentication state.
* Use the context provider to wrap the app or specific components.
* I have a page To show your username so it is falling behind the auth context take note of that while testing the app.

5. Protect Routes

* Use the authentication context to protect routes that require authentication.
* Redirect users to the login page if they're not authenticated.

**Question 6**

I used react and django for the communication of both the front End and the backend .You can run the project to get realtimee errors from the django backend framework .It is good to note that this job was done entirely for coding challenge and evaded tedious work for front end and backend .

I also Used Postman for testing purposes only .

**QUESTION 9**

What is a unique but essential approach you use in your development process? {Be creative and try to stand out but also remain original}

At the forefront of my development approach lies a systematic and methodical process that unfolds in a carefully orchestrated sequence. Kicking off with the Problem Definition phase, I dive into the heart of the matter, scrutinizing and unravelling the intricacies of the challenge at hand. This phase serves as a compass, guiding me to not only comprehend the nature of the problem but also assess the technological requirements it necessitates. Moreover, a comprehensive gauge of its complexity sets the stage for what follows.

Transitioning seamlessly into the Requirement phase, I embark on an evaluation of the most valuable asset in my arsenal - my team. Here, I delve into a meticulous exploration of the collective skill set, ensuring that I align tasks with each member's expertise. This step is pivotal in ensuring an efficient allocation of responsibilities. Additionally, an eagle-eyed consideration of scalability factors is undertaken, enabling me to lay the groundwork for a solution that's geared for future growth. Furthermore, the choice of development methodology, whether Agile or otherwise, is thoughtfully made, laying the foundation for a collaborative and well-structured journey.

As the contours of the project continue to take shape, the Design phase unfurls, painting the blueprint of the system's architecture. It is during this stage that I embark on a rigorous risk analysis, delineating potential hurdles and crafting contingency strategies. Simultaneously, I construct a meticulously detailed Work Breakdown Structure (WBS) that acts as a guiding map for the project's progression. The crucial questions of "who, when, and where" are answered at this juncture, not merely as exercises in anticipation but as proactive measures to mitigate potential disruptions. It's within this design phase that I strive to minimize risks to their barest minimum, ensuring that, in the eventuality of a challenge, I'm not only primed to tackle it but can also confidently delegate responsibilities based on meticulous planning.

In essence, this approach intertwines method and strategy, embedding every phase of development within a carefully woven fabric of preparedness and forethought. It’s a unique blend that's grounded in pragmatism, yet enriched with an original perspective that places emphasis on holistic problem-solving and collaboration.

**QUESTION 10**

Outline the learning and research steps you follow when given a task that you do not yet have the skills/experience for.