

Software Engineering - Internship Assignment

Duration : **5 days**

Written Questionnaire

1. Explaining what is design pattern and how we can use design patterns in projects.
2. What is DTO and explain the use of it.
3. How are you going to store secrets in an application without exposing it to the internet?
4. What is JWT and how does it work?
5. What is the difference between SQL and NoSQL databases?
6. Suggest a good state management for frontend application and explain why you recommend it.

Development task

Must be submitted on Github.

Technologies

Backend : Node.js (can use framework like nest.js) / SLIM or Spring Boot
Frontend : React.js / Next.js
Database : MongoDB

User Interface

```
interface IUser {  
  id: number;  
  firstName: string;  
  lastName: string;  
  email: string;  
  dateOfBirth: Date;  
  mobile: number;  
  status: boolean;  
  password: string;  
  accountType: string;  
}
```

1. Analyze below diagram and Create the frontend and backend application.
2. Explain the application briefly in the readme file.
3. Proper error handling should be implemented.
4. Add loading indicators to necessary places.
5. Implement backend pagination for list.
6. Search user by name, email or id.
7. Routes should be protected for user types.
8. Implement token based authentication.

9. Write a seed file to add admin to the database directly.
10. Write Unit testing. (Bonus Steps)
11. Host backend, frontend and DB in separate docker containers and should be able to up all using docker-compose. (Bonus Steps)

Evaluation Criteria

1. Are clear instructions provided on how to install and run the code?
2. Does the code repo have readable commit messages?
3. Does code compile, build and run without errors/warnings?
4. Does code follow naming conventions well?
5. Is code understandable, simple and clean?

Diagram

