Task: Developing a To-Do List Application's RESTful API

Read the whole task before you begin the practical, and ask your queries on email directly, once you start the task no queries will be entertained.

User Authentication:

- JWT with Role-Based Access Control (RBAC), including token expiry and refresh token handling.

To-Do CRUD Operations:

- Perform CRUD actions with advanced features like pagination, sorting, and filtering.
- Use aggregation pipelines for data analytics, like fetching statistics on completed vs. pending tasks.

Middleware:

- Implement advanced middleware for request rate limiting and input sanitization.

API Design:

- Design scalable APIs with versioning (e.g., /api/v1/todos). User either of the below mentioned approaches.
    - URL Path Versioning
    - Header Versioning
- Separate API into microservices for scalability. (if aware about microservices pattern else you can use the MVC pattern)

Database Management:

- Efficient use of MongoDB with indexing, optimization, and performance strategies.

Testing:

- Unit tests and integration tests are required, following Test-Driven Development (TDD) practices.

Documentation:

- Complete Swagger / OpenAPI documentation.
- Include a README with instructions to run the project (Steps mentioned in the Readme would be followed so please carefully mention the steps)
- Include a README for setting up a CI/CD pipeline. (added advantage if you know about setting up CI/CD)

Note:

- API will have MICROSERVICES architecture if you are not aware you can opt for MVC.
- API should be authenticated API via bearer token (JWT)
- API versioning is a must.
- Code should be commented on properly.
- Proper naming conventions must be used.