Technical Assessment for Full-Stack Developer - Test Case 1

Objective:

Build a **Customer Relationship Management (CRM)** application that allows staff to manage customers and handle feedback.

- Customer information must be stored securely.
- A **Customer Service Officer (CSO)** can view customers and reply to feedback.
- A **Manager** can review and approve/reject replies.

Assume:

- A daily batch job will send out all approved replies to customers. You do **not** need to implement this job.
- **User management (creation, deletion, assignment of roles)** is **out of scope**. Assume roles are predefined and assigned.

Technologies Required:

- Language: Typescript
- Frontend: React.js with Refine framework
- Backend: Node.js with Express/Nest.js framework
- Database: Postgres
- ORM: TypeORM

Evaluation Criteria:

- Demonstrate usage of cross-cutting concepts
- Simple role-based access control should be included
- CRUD operations with correct authentication and authorization verification.
- Implement pagination and filtering for the listing endpoint.
- Unit testing is recommended.
- Code readability, structure, and modularity.

- Proper handling of asynchronous operations and error handling.
- Implementation must be done via TypeScript.
- Project must be pushed to an accessible GitHub repository for evaluation, including the DB schema with the necessary migration or seeding script.
- API specifications should be provided, Swagger preferred.
- Clear and concise documentation in the README (including, but not limited to, feature list, setup guide, and possible use cases). Additionally, document any deviations or shortcuts taken to run the project locally, and specify the changes required to make the application production-ready.