**Group Members:**

**Naitik Jain J031**

**Rishabh Jain J033**

**Project Overview:**

We will develop a tradebook application that securely stores and manages all trade transactions. The application will consist of a web front-end, a backend API for trade data submission and retrieval, and a database for storing trade records. We will use GitHub for version control and storing codes.

**Architecture:**

1. Frontend: Hosted on AWS S3, served via CloudFront for scalability and low latency. Developed using a framework like React.
2. Backend: Utilize AWS Lambda functions behind an API Gateway to handle trade data submission and retrieval. AWS Cognito will be used for user authentication.
3. Database: Implement Amazon PostgreSQL as the primary data store for trade records. It will allow us to efficiently store and query trade data.

**DevOps Practices:**

1. Continuous Integration/Continuous Deployment (CI/CD): Implement CI/CD pipelines using AWS CodePipeline and AWS CodeBuild to automate code deployments. This ensures that every code change is automatically built, tested, and deployed.
2. Monitoring and Logging: Set up monitoring using Amazon CloudWatch to track application performance and errors. Integrate with AWS X-Ray for tracing. Use centralized logging with Amazon CloudWatch Logs.
3. Automated Scaling: Configure auto-scaling for Lambda functions and containers to handle varying loads.

**Security:**

1. Implement AWS Identity and Access Management (IAM) roles and policies to ensure the principle of least privilege.
2. Enable AWS Web Application Firewall (WAF) and AWS Shield to protect against DDoS attacks.

**Backup and Disaster Recovery:**

1. Set up automated backups of PostgreSQL tables.

