# System Architecture Diagram

The following system architecture diagram illustrates the overall structure of the Testify system. The key components include:  
  
1. Client (Web/SPA):  
 - React or Next.js frontend where users can take tests and view results.  
 - Communicates with the backend via REST API.  
  
2. Backend API (Application Server):  
 - Built with Spring Boot.  
 - Handles business logic, authentication, authorization, and scoring.  
 - Connects with the database and sends email notifications.  
  
3. Authentication & Authorization:  
 - JWT-based authentication.  
 - Middleware to check roles and access permissions.  
  
4. Database Layer (PostgreSQL):  
 - Stores users, roles, tests, questions, answers, submissions, etc.  
 - Relationships are defined according to ERD.  
  
5. File Storage (S3):  
 - Stores images related to questions and answers.  
  
6. Admin Dashboard:  
 - Interface for admin to manage questions, tests, and submissions.  
  
7. CI/CD & Deployment:  
 - GitHub Actions for continuous integration and deployment.  
 - Deployed to AWS EC2.  
  
8. Monitoring & Logging (optional):  
 - Tools like Prometheus and Grafana for system monitoring.