

Telemedicine Platform Architecture

Telemedicine Platform Architecture (Flowchart Style)

1. User (Doctor/Patient/Admin) -> Frontend (ReactJS / Angular / Bootstrap)
2. Backend (Django / Flask API Layer) -> Authentication Module -> Token-Based Auth (DRF Token or JWT)
3. API Gateway & Routing (RESTful APIs) -> Core Services Layer:
 - Video Calls (WebRTC / OpenTok / Jitsi Meet)
 - EHR Sync (FHIR/HL7)
 - AI Modules (Diagnosis, NLP, ML Models)
 - Analytics Engine (Health trends, Usage statistics)
4. Secure Database Layer (PostgreSQL / MongoDB / Oracle / EHR DB)
5. File Storage (Encrypted Medical Records, Media Files via AWS S3 / Azure Blob)
6. Logging & Monitoring (Docker, Kubernetes, Jenkins, Grafana, ELK Stack)
7. CI/CD Pipeline (GitHub Actions / Jenkins / Docker Build & Deploy)
8. Hosting Platform (AWS / Azure / GCP with Load Balancer & Auto-scaling)

Key Technologies:

- Frontend: ReactJS, Bootstrap, JS, HTML5
- Backend: Django/DRF, Flask, Node.js
- Authentication: Token-based (JWT or DRF Token), Role-based
- Video Calls: WebRTC, OpenTok, Jitsi Meet
- EHR Integration: FHIR, HL7 API
- AI Models: PyTorch, TensorFlow, SleepTransformers
- Database: PostgreSQL, Oracle, MongoDB
- Cloud: AWS / Azure / GCP
- CI/CD: Jenkins, Docker, Kubernetes