

# 1. Subscriber Management Portal

- **Abstract:**

Build a web-based portal for managing subscribers' details including profile, plan, billing, and activation/deactivation. Admins can view, edit, and manage customer information and associated services.

- **Key Features:**

- CRUD operations for subscriber profiles
- Plan activation, suspension, and upgrade workflows
- REST API using Spring Boot (Microservices architecture)
- PostgreSQL for data storage
- Frontend in React for customer and admin interfaces
- CI/CD with Jenkins + Docker containers

## 2. Mobile Number Portability (MNP) Tracker

- **Abstract:**
- Develop a system that tracks MNP requests, validates them, and processes the number transfer workflow between telecom providers. Useful for customer retention analytics and compliance tracking.
- **Key Features:**
- Capture and validate portability requests
- Trigger inter-provider communications via REST APIs
- Audit logs with timestamps
- Real-time status updates using WebSockets or polling
- PostgreSQL for request and audit storage
- React-based dashboard for tracking requests

# 3. Telecom Billing and Usage Analytics System

- **Abstract:**

- Design a system that records call/data usage and generates bills accordingly. Admins can view revenue, user consumption trends, and send usage alerts

- **Key Features:**

- Call/Data usage ingestion via APIs (simulate usage logs)
- Bill generation engine using Java 8 Streams and Lambda
- Monthly invoice generation (PDF/email simulation)
- Dashboards for customer usage and admin analytics
- Spring Boot Microservices for Usage, Billing, Alerts
- Dockerize each service and deploy

# 4. Telecom Complaint Management System

- **Abstract:**
  - A customer grievance portal where users raise complaints (e.g., network issues, billing errors), track status, and receive resolutions from backend teams.
- **Key Features:**
  - Complaint ticket creation and tracking
  - SLA management with escalation logic
  - Workflow engine in Spring Boot
  - React frontend with chat-bot style UI for support
  - PostgreSQL for storing tickets and user responses
  - Git + Jenkins for pipeline deployment

# 5. SIM Card Activation and Verification System

- **Abstract:**
- Develop a secure system to manage new SIM activations, integrating ID verification, KYC upload, and status tracking.
- **Key Features:**
- ID upload and OCR (mock this part or use dummy validation)
- KYC verification workflow (simulate with Java services)
- SIM activation process via status flags in DB
- Microservice for notification (email/SMS simulation)
- Role-based UI in React (Admin vs. Customer)

# 6. Network Outage Detection Dashboard

- **Abstract:**
- Create a dashboard that displays real-time network outage alerts based on simulated sensor/region data, showing affected areas and expected resolution times.
- **Key Features:**
- Outage data simulation microservice (random outage injection)
- REST APIs to fetch affected zones and recovery times
- Admin dashboard in React showing map view + tables
- Alerts/notifications engine
- PostgreSQL for storing incident data
- Deploy as containerized services with Docker Compose