

# LUMEN Quest 2.0 - Subscription Management System

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## Student Guide

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# Subscription Management System

## Use Case Description

The system allows users to manage their subscriptions to products and services, enabling them to easily subscribe, upgrade, downgrade, or cancel their plans. Service provider administrators are equipped with tools to create new subscription plans, adjust pricing, and manage discounts. Additionally, the system offers optional analytics features that provide insights into the most suitable plans for users and offers pricing strategy recommendations for administrators.

## Assumptions

- Multiple broadband products exist (Fibernet, Broadband Copper); admins manage subscription plans with defined quotas and prices.
- System supports admin and end-user roles; authentication uses role-based access control.
- Subscription Operations: Users can subscribe, renew, upgrade, downgrade, or cancel plans; no top-ups allowed; auto-renew configurable.
- Plans include fixed monthly data quotas; usage tracked per subscription; quota guides recommendations but are not enforced for blocking.
- Payment is simulated or out of scope, focusing on subscription and usage management.
- Optional alerts for renewals and recommendations can be a simulation.
- Basic authentication included advanced security and real-time enforcement excluded.

## End-User Perspective

As an end-user, I want to:

1. **Subscribe to a Plan or Service:**
  - Browse available plans or services.
  - Select a plan based on my needs and subscribe seamlessly.
2. **Upgrade or Downgrade Subscription:**
  - Easily switch between higher-tier and lower-tier plans as my requirements change.
3. **Cancel/Renew Subscription:**
  - Cancel/Renew my subscription without hassle.
4. **Recommendations:** (*Nice-to-Have*)
  - Get personalized suggestions for the best plan based on my usage and preferences.
5. **Track Offers and Discounts:** (*Nice-to-Have*)
  - Be notified of discounts or promotional offers that align with my interests.

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## Administrator Perspective

As a service provider admin, I want to:

### 1. Manage Plans and Pricing:

- Add new plans or services to the catalog.
- Modify existing plans, including updating features and pricing.

### 2. Add and Manage Discounts: *(Nice-to-Have)*

- Create promotional offers and discounts.
- Set conditions for discounts (e.g., seasonal offers, usage-based discounts).

### 3. Track Analytics for Plans:

- Analyze user subscriptions to determine the most popular plans and those with low engagement.
- Trends like active subscriptions vs cancelled subscriptions on month basis and many more.

### 4. Optimize Plans and Discounts: *(Nice-to-Have)*

- Get AI-powered suggestions on modifying plans, adding features, or adjusting discounts based on market trends and customer behavior.

## Auditing Requirements

### 1. User Activities

- Updates to subscription by user
- Records of notifications

### 2. Admin Activities

- Plan Modifications
- Discount Modifications
- Admin Actions

## Technical Considerations

### 1. Architecture

- **Frontend:** Responsive web/mobile interface for users and admin dashboards.
- **Backend:** RESTful or GraphQL API to handle business logic.
- **Database:** Relational or NoSQL database for managing subscription data, plans, and user profiles.
- **Analytics Engine:** Machine learning module for recommendations (optional).

### 2. Key Functionalities

- User authentication and authorization (a simple login table can be considered for this).

- Plan CRUD operations (Create, Read, Update, Delete).
- Subscription lifecycle management (subscribe, modify, cancel).
- Notification system for plan updates and promotions.
- Analytics and insights for admins (if implemented).

### 3. Security

- Protect sensitive user data with encryption.
- Role-based access control for admin and user functionalities.

## Acceptance Criteria

### Minimum Viable Product (MVP)/Must-Have Features

Authentication/Authorization can be assumed to be taken care of by another system. For hackathons, a table can be maintained to keep simulated end-user and service provider administrators' data.

1. Users can subscribe, upgrade, downgrade, and cancel plans seamlessly via self-service portal.
2. Admins can create, update, delete, and view plans and pricing via self-service portal.
3. Admins will have access to dashboard to view the top plans of the recent past, current month and year.
4. Enable users to view and manage their own subscriptions, plans and discounts. Provide administrators with full access to manage all subscription-related data.
5. AI based personalized recommendations are provided to users based on their usage.

### Nice-to-Have Features

1. Analytics to provide insights for admins based on the product/service usage, pattern etc.,
2. Use historical subscription and usage data to predict which users are likely to **cancel or not renew** their subscriptions soon and perform user engagement.
3. Discount Management including offer creations and application of offers during buying/renewing.
4. Notifications to end user up on changes made to subscriptions.

### Recommended Data Set

**Refer the attached SubscriptionCaseStudy\_Dataset.xlsx in email.**

## Evaluation Criteria

Evaluation Criteria	Weightage %
Functionality and Features	30%
Technical Implementation	20%
User Interface and Experience	20%
Innovation and Creativity	15%
Presentation and Documentation	10%
Team Collaboration	5%
Total	100%