**By using the reference of YouTube Publish + Subscribe service utilized are :**

**Scenario 1 :** Account Creation (Gmail / YouTube)

**Publisher** :

Account Creation Service:

Handles the creation and management of user accounts on the

platform.

**Subscribers** :

- User Data Management service:

Stores and manages user information like usernames, email addresses,

and preferences.

- Authentication Service:

Handles user login and verifies credentials for platform access.

- Personalized Content Recommendation System:

Analyzes user behavior and preferences to offer tailored content

recommendations matching their interests.

- Email Notification Service:

Subscribes to send a welcome email or account verification email to newly registered users.

- User Profile Service:

Subscribes to store and manage user profile data, preferences, and settings.

- Analytics Service:

Subscribes to collect user registration data and perform analytics on user demographics.

**Scenario 2 :** User Login

**Publisher** :

Authentication Service:

Manages user login and authentication to grant access to platform .

**Subscribers** :

- Personalized Content Recommendation System

- User Interaction Tracking Service:

Tracks user actions and engagement on the platform.

- Usage Statistics Service:

Collects and analyzes platform usage data for insights.

- Session Management Service:

Subscribes to track and manage user sessions, including login and logout events.

- Third-Party Login Integration:

Subscribes to handle login through third-party services like Google or Facebook.

**Scenario 3 :** Subscription Creation

**Publisher** :

Subscription Service:

Facilitates the creation and management of user subscriptions to

channels or content.

**Subscribers** :

- Channel Owner's Service:

Manages channels, content, and audience interactions for channel owners.

- User Subscription Management Service:

Handles user subscriptions and preferences for subscribed channels.

- Payment Gateway Service:

Subscribes to handle payment processing for subscription fees.

- Notification Service:

Subscribes to notify users about successful subscriptions and payment confirmations.

**Scenario 4 :** Channel Creation

**Publisher**  :

Channel Creation Service:

Enables users to create and manage their own channels.

**Subscribers** :

- Channel Initialization Service:

Sets up new channels with initial configurations.

- User Channel Management Service:

Allows users to manage and customize their channels.

- Metadata Extraction Service:

Subscribes to extract metadata from the channel, such as title, description, and tags.

- Recommendation System:

Subscribes to receive initial data about the newly created channel to start providing relevant recommendations.

**Scenario 5 :** Video Upload

**Publisher** :

Video Upload Service:

Allows users to upload and publish videos to the platform.

**Subscribers** :

-Video Processing Service:

Processes and optimizes uploaded videos for playback and storage on

the platform.

- Content Delivery Network (CDN) Service:

Speeds up content delivery by using geographically distributed servers

closer to users.

- Recommendation System:

Analyzes user data and behavior to provide personalized content

suggestions and recommendations.

- Transcoding Service:

Subscribes to transcode uploaded videos into various formats for

adaptive streaming.

- Video Metadata Service:

Subscribes to store and manage video metadata, such as duration,

resolution, and bitrate.