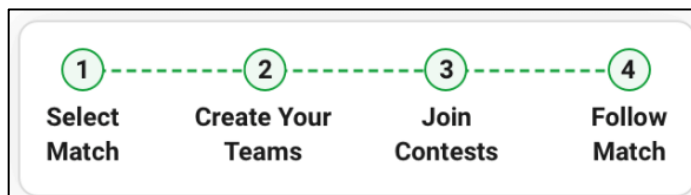




DREAM 11

An online fantasy sports app that allows users to create a virtual team of real players and earn points based on their performance in real matches.

A brief user journey --->



Objective: To develop an effective notification system, to increase Monthly Retention Rate (MRR) by 20% and Client Retention Rate(CRR) by 10%.

Notification can be published through: (1) Push Notification within the App (2) Emails (3) Text Msg (4) Tele Branding
For this assignment we have focused on – Developing a push notification system for Dream 11.

Functional Requirements –

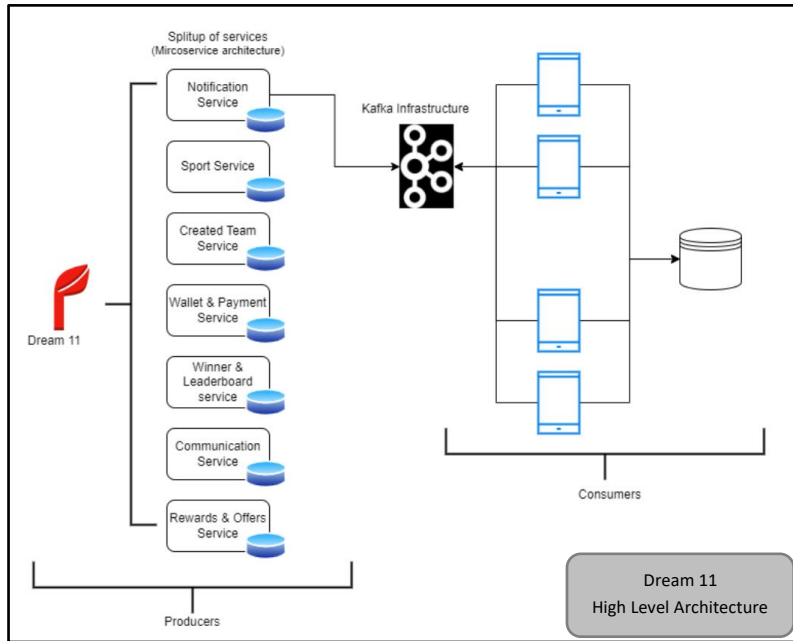
- Notification should be **personalized** based on user preferences, activity or engagement.
Eg: Upcoming IPL match notification if user has or had a team created from IPL section.
- Provide **real-time updates** on live matches, player performances to keep users engaged with the app.
- Notify users with **upcoming** contests, exclusive offers, and bonuses to encourage user participations.
- On event completion, notify users to provide **feedback**, to improve the system and gain trust from users.
- Target less active users** with lucrative offers notifications, with an attempt to onboard them back.
- Allow users with an **customizable** option to turn ON/OFF, notification based on their needs.
- Implement **analytics** tools to track notification performance metrics such as open rates, click-through rates, and user retention, and generate reports to assess the effectiveness of the notification strategy.

Non Functional Requirements:

- Notification system should **maintain availability** with less latency, even during peak hours.
- Design system in-terms of **scalability**. More resources can be easily added to system as the user base grows.
- Notification systems should also handle **security** measures.
Eg: Notifications sent to users should not reveal any personal data (wallet amount, bank details, etc).
- Ensuring compliance and telecommunication **laws and regulations** are strictly followed by the notification system been developed.

Proposed Notification System High-Level Diagram

- Mobile users are the consumers, where the installed Dream11 app is listening to various kafka topics / cluster-partitions created. These kafka topics are pre-defined sections created within the app based on the sports category. Whereas Dream11 as a whole acts as a producer publishing various data.
- Whenever a notification data about a specific event is published over a specific kafka topic and users are subscribed to that topic, the app should read the data and notify the user with the message received.
Eg: A notification data on the IPL Sports Category, with details on the upcoming match MI vs CSK, whose playing 11 has been declared and now users should start preparing their fantasy team 11 players, kind of message is published over the kafka stream. Push notification should appear on the user app with the details consumed.
- SQL database used to store clicks of user, notification published, fetching & storing sports and their relevant data.



Availability:

.. Create kafka topics and partition in proportion to the number of users, to maintain high throughput of data stream.

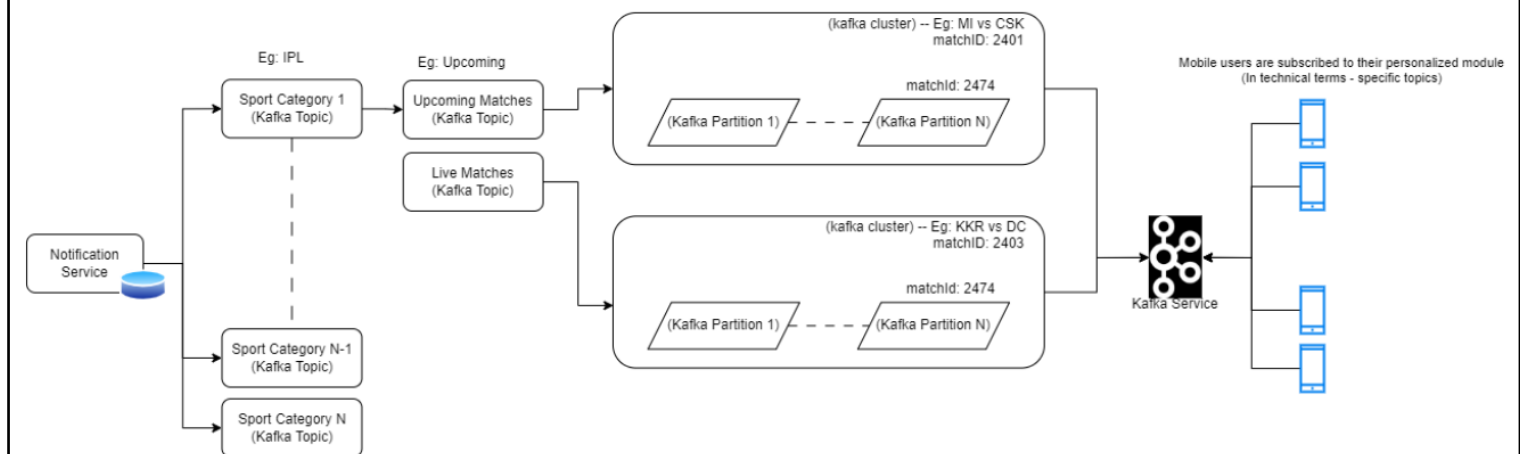
.. Maintain data recovery architecture with services spread across geographical areas.

.. Data replicas jobs should maintain high resilience.

Scalability:

.. System should adapt, if new topics or partitions added runtime during peak hours.

Notification Service High Level Diagram



Product Road Map

	Sprint I		Sprint II		Sprint III		Sprint IV		Sprint V		Sprint VI		Sprint VII		Go Live
	01-Jun	15-Jun	29-Jun	13-Jul	27-Jul	10-Aug	24-Aug	07-Sep	21-Sep	05-Oct	19-Oct	02-Nov	16-Nov	30-Nov	14-Dec
Analysis	Product Analysis		Define notification msg structure across various cases												
Designing(UX)	Push Notification UX design														
Development (UI)					UI notification pop-up designing Part -1		UI notification pop-up designing Part -2		UI notification pop-up designing Part -3						
Development (Backend)	Notification Service Tech Stack Setup				Kafka Producer Setup		Kafka Consumer Setup		Kafka Producer - Consumer Interaction						
Testing /UAT											UAT Testing & Bug Fixes		UAT Testing & Bug Fix		
Release															Release



Dream11



Cricket



Football



Kabaddi



eSports



Baseball



Basketball



NFL



Hockey



Handball



Volleyball