**Problem Definition & Design Thinking**

**Title: Customer Behaviour Analysis**

**Problem Statement**

Understanding customer behaviour is crucial for businesses to enhance engagement, improve sales, and optimize marketing strategies. However, many companies struggle with fragmented customer data, lack of real-time insights, and difficulty in predicting purchasing patterns. The challenge is to analyse customer interactions effectively to personalize experiences, increase retention, and drive revenue.

**Target Audience**

* **E-commerce businesses** seeking to improve conversion rates.
* **Retail stores** aiming to enhance in-store and online customer experiences.
* **Marketing teams** needing data-driven strategies for targeted campaigns.
* **Customer support departments** looking to reduce churn and improve satisfaction.

**Objectives**

* To develop an AI-driven system that analyses customer behaviour across multiple touchpoints.
* To predict purchasing trends and recommend personalized offers.
* To create an intuitive dashboard for businesses to track key customer metrics.
* To ensure data privacy while collecting and processing customer insights.

**Design Thinking Approach**

**Empathize**

Businesses often miss opportunities due to a lack of actionable customer insights. Understanding pain points such as:

* Difficulty in tracking customer journeys across platforms.
* Inability to predict churn or identify high-value customers.
* Over-reliance on generic marketing instead of personalized engagement.

**Define**

The solution should

* Aggregate customer data from multiple sources (websites, apps, POS systems).
* Use AI to segment customers based on behaviour, preferences, and purchase history.
* Provide real-time recommendations for targeted marketing.

**Ideate**

Potential solutions

* **AI-powered analytics dashboard** for real-time customer insights.
* **Predictive modelling** to forecast buying behaviour.
* **Automated recommendation engine** for personalized promotions.
* **Sentiment analysis** from reviews and social media to gauge satisfaction.

**Prototype**

A basic prototype includes

* **Customer segmentation tool** (e.g. frequent buyers, at-risk customers)
* **Behavioural tracking** (click patterns, cart abandonment rates)
* **Automated alerts** for unusual activity (e.g. sudden drop in engagement)

**Test**

The prototype will be tested with

* Small businesses to assess usability.
* Marketing teams to validate insights accuracy.
* Customers to ensure personalization improves satisfaction.

**Testing Goals**

* Verify if AI predictions align with real customer actions.
* Assess ease of use for non-technical users.
* Measure improvement in engagement and sales after implementation.