Marketing Analytics Project: Problem Definition

1. Identify the Problem Area

The project is part of the Product Development and Customer Experience area of marketing. It focuses on solving the difficulties readers in Yerevan face when trying to find and buy books from local bookstores. Since local stores have separate websites, it is hard for people to check where a book is available, compare prices, or find good options for reading or gifting. This lack of centralized information reduces local bookstore sales and increases reliance on foreign online retailers.

2. Conduct Preliminary Research

Preliminary research reveals that:

• Many Yerevan bookstores, such as Bookinist, Books.am, and Zangak, have separate online platforms that are not integrated, making it difficult for customers to know where a specific book is available or at what price.

• Customers often spend considerable time comparing availability and prices across different stores or end up ordering from international websites, increasing waiting time and costs.

• Recommender systems and product-matching algorithms are widely used in e-commerce but are rarely applied to local offline bookstores.

• Studies show that personalized recommendation systems and price optimization significantly improve customer satisfaction and local business engagement.

This gap presents an opportunity to create a unified platform that enhances book discovery and supports local retail through intelligent search and recommendation.

3. Define a Specific Problem

Problem Statement: How can we design a data-driven recommendation platform that allows users to find the availability, price, and location of a desired book in Yerevan, and if unavailable, suggests the most similar locally available books based on plot, genre, and description?

4. Propose a Solution with Methodology

A. Data Collection

Data will be collected by scraping websites of major bookstores in Yerevan (e.g., Bookinist, Books, Zangak, etc.). The scraped data will include book details (title, author, genre, plot/description, publication year, ISBN), price and availability, and store information (name and address). Global book databases such as Google Books API or

Open Library API will also be used to retrieve plot summaries and metadata for similarity-based recommendations.

B. Analytical Techniques
The analytical component includes two major stages:

1. Exact Match Retrieval:
   - Fuzzy-matching techniques will identify the most accurate match between the user's query and the books in the Yerevan database.
   - When multiple stores have the same book, the optimal option will be chosen based on price ranking.

2. Similarity-Based Recommendation:
   - If the book is not available, or even if it is, a list of similar books will be generated using classic ML and DL models.

C. Implementation Plan
1. Database Construction: Build a comprehensive dataset of books in Yerevan through regular web scraping.
2. Search Engine Development: Implement a query processing system that matches user input with the most relevant book titles.
3. Recommendation Module: Integrate an ML-based recommendation engine to suggest similar books.
4. Deployment and Evaluation: Launch a functional prototype website, allowing user testing.

5. Expected Outcomes

• For users: Reduced time spent searching for books and improved satisfaction through personalized, local availability suggestions.
• For bookstores: Increased sales and visibility by appearing in user search results and recommendations.
• For the market: Strengthened customer engagement with local book retailers, reducing reliance on foreign e-commerce sites.
• For data insights: Opportunity to analyze customer search trends and preferences in the Yerevan book market.

6. Evaluation Metrics

The following Key Performance Indicators (KPIs) will measure success:
1. User satisfaction score
2. Local store engagement increase
3. Click-Through Rate

4. Search Accuracy
5. Response Time

7. Summary

This project uses marketing analytics and recommendation techniques to solve a real-world consumer challenge, the difficulty of discovering and purchasing books locally in Yerevan. By combining data scraping, and ML-based similarity modeling, the proposed solution creates tangible value for both customers and local businesses. It demonstrates how well implemented recommendation systems can enhance customer experience, brand visibility, and local market competitiveness.