

CSE 4410  
DATABASE MANAGEMENT SYSTEMS II LAB

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**LAB\_09: Neo4J Scenario**

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- Let's assume you want to build a recommendation engine for your online bookshop. Your online bookshop sells a variety of books and you want to improve the customer's buying experience by recommending books that they are likely to purchase by analyzing shared personal details and monitoring which books go together in one's purchase list.

This type of scenario generally includes four types of nodes-

- Customer: Contains information about customers such as customer ID, name, phone\_no, and demographic information like age, gender, country etc.
- Genre: It helps to filter different books according to the genre.
- Author: Contains information about authors such as name, country, date\_of\_birth etc.
- Book: Contains information like title, published\_year, language, page\_count, price etc.

And the relations are the following-

- Customers purchase or rate books. The purchase information also includes purchasing\_date and amount.
- Customer can also rate authors(this is different from rating a book).
- Books can be of different genres.
- Books can have multiple volumes.
- Authors write books. And this includes the writing\_year.

Now, your task is to:

1. Create necessary nodes and relations with properties.
2. Cypher Query
  - (a) Find the total revenue generated by each book.
  - (b) Find the average rating for each genre.
  - (c) Find books purchased by a customer 'N' within a specific time range.
  - (d) Find the customer who buys the maximum number of books.
  - (e) Find the best-seller books by the number of purchases.
  - (f) Find the customer who bought or rated a certain book. for example 'A'
  - (g) Find the customer who bought the books of a certain author. for example 'X'
  - (h) Find books frequently purchased together.