# Report on Online Retail Database Project

### Introduction

This project is based on the design and implementation of an **Online Retail Database** using MySQL Workbench. The database manages records of customers, products, orders, order items, and payments. The objective is to build a structured schema that demonstrates how retail transactions can be stored, managed, and retrieved efficiently.

### Abstract

The database schema consists of five main tables: **Customers, Products, Orders, Order\_Items, and Payments**. These tables are connected through primary and foreign key relationships to maintain data integrity. Sample records were inserted to validate the schema. Queries were executed to generate useful outputs such as order details, product sales, and payment summaries. The project highlights the practical implementation of database concepts like normalization, constraints, and relational mapping.

### Tools Used

* **MySQL Workbench** – for schema design and query execution
* **MySQL** – as the relational database management system
* **SQL** – for schema creation, data insertion, and queries

### Steps in the Project

1. **Database Creation**: A schema named online\_retail\_db was created.
2. **Table Design**:
   * **Customers**: Stores customer details such as name, email, phone, and address.
   * **Products**: Contains product details including product name, description, price, and stock.
   * **Orders**: Records order information with customer reference, order date, status, and total amount.
   * **Order\_Items**: Bridge table between Orders and Products to handle multiple products in one order.
   * **Payments**: Stores payment details like method, amount, and related order.
3. **Sample Data Insertion**: Records were added to test the database and verify relationships.
4. **Queries Implemented**:
   * Listing orders with customer details.
   * Fetching order details with product information.
   * Calculating total sales by product.
   * Displaying payment summaries.

### Conclusion

The Online Retail Database provides a well-structured model for handling basic operations in an e-commerce system. It ensures data consistency through the use of keys and constraints, while supporting important functionalities such as customer management, product tracking, order processing, and payment recording. The queries confirm that the schema is capable of delivering meaningful insights, making it suitable for use in retail applications.