CSE 1300

ASSIGNMENT 3

DBMS Fundamentals – Online Shopping Database

Overview

This assignment will test your understanding of the basic DBMS concepts covered in class—from the difference between data and information to the types of database management systems, their advantages and disadvantages, and the use of database languages (DDL, DML, DCL, TCL, DQL). You will also practice writing SQL queries to reinforce your understanding of DDL and DML in an online shopping context.

Part A: Understanding Core Concepts

1. Data vs. Information (Short Answer)

- In your own words, explain how data differs from information.
- Give one real-life online shopping example that shows the transformation of raw data into useful information.

2. DBMS vs. File System (Short Answer)

- Briefly compare a DBMS with a traditional file system.
- Mention two advantages of using a DBMS for managing online customer orders.

3. Types of DBMS (Matching)

Match the following software systems with the correct type of DBMS:

Software	Type of DBMS
Oracle	?
Redis	?
ObjectDB	?

Choose from: Relational (RDBMS), Non-Relational (NoSQL), Object-Oriented (OODBMS).

Part B: DBMS Features & Pros/Cons

4. Key Features (Short Answer)

- List two features of a DBMS (e.g., backup & recovery, concurrency).
- Explain why each is important in an online shopping system.

5. DBMS: Advantages and Disadvantages (Table)

Create a two-column table. In your own words, write:

Advantage	Disadvantage
Example: Data Integrity – Ensures order records are accurate and consistent	Example: Cost – Requires investment in infrastructure

- Add two entries per column.

Part C: Database Language Identification

6. Match the Task to the Language Type

Use the table below and fill in the correct SQL language type (DDL, DML, DCL, TCL, or DQL):

Action	Language Type
Create a new database table for products	?
Retrieve all orders placed in the last month	?
Update the price of a product in the Products table	?
Rollback a failed transaction	?
Grant access to a sales manager	?

Part D: SQL Practice

7. Table Creation (DDL)
Write a `CREATE TABLE` statement for a Customers table with the following fields:

- `customer_id` (Primary Key, integer)
- `name` (text)
- `email` (text)
- `address` (text)

8. Data Manipulation (DML)
Write the following SQL statements:

- Two INSERT statements for adding different customers.
- One SELECT statement to display all customers.
- One UPDATE statement to change the address of one customer.

Part E: Real-World Application

9. Application Scenario (Short Answer)
Choose E-commerce as your industry.

- Write 2–3 sentences describing how a DBMS is used in online shopping.
- Explain why data security and concurrent access are critical when many customers shop at the same time.

Submission Requirements

- Submit a PDF or Word document with all answers to Parts A–E.
- Include SQL scripts or screenshots for Part D.
- Use your own words—no direct copying from slides or websites.
- Make sure your file includes your name, KSU ID, and assignment number at the top.