**LECTURE 4: File System vs Database System**

**Case Study Question**

A retail company has been using a traditional file system to maintain records of sales, inventory, and customer details in separate Excel files. Over time, the company has started facing several challenges:

• Duplicate customer records due to multiple entries across different files.

• Inconsistent product details across inventory and sales files.

• Difficulty in generating consolidated sales reports for each customer.

• Lack of security and access control, as files are shared openly among staff.

• Scalability issues as the volume of data grows with business expansion.

The management is now considering moving from the traditional file system to a Database Management System (DBMS) to overcome these limitations.

**Questions**

1. Identify the major problems faced by the company due to the file system approach.

2. Explain how a DBMS can resolve these problems, highlighting features such as data integrity, security, and scalability.

3. Suggest a suitable database model (Relational, NoSQL, etc.) for this company and justify your answer.

4. Provide an example schema design for the company, including tables for Customer, Product, and Sales.

5. Discuss how implementing DBMS would improve decision-making and reporting for the company.