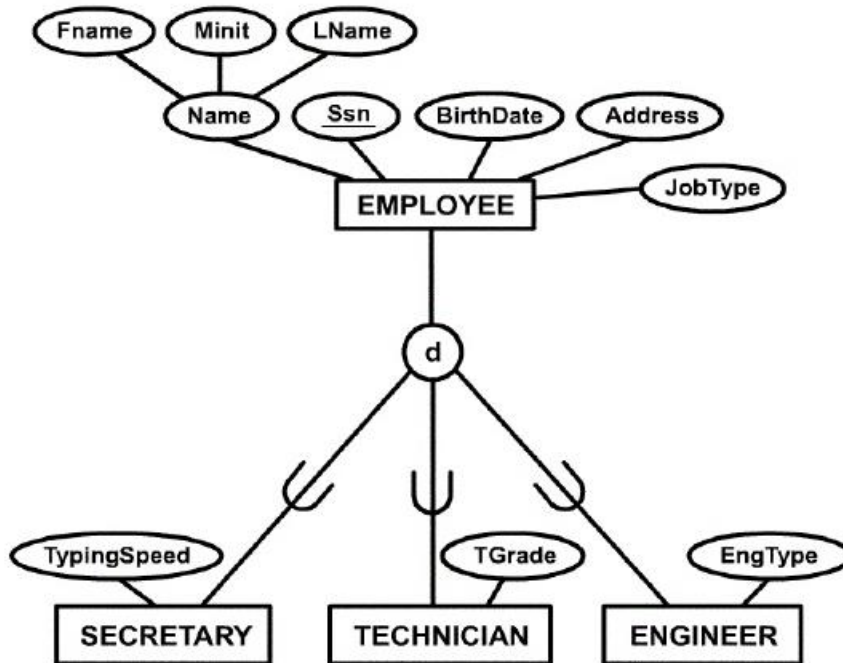# CSCI 585 QUESTION BANK

Q1. What do you think is the need of metadata? Give an example of your choice of how you would use metadata in a real world application.

Q2.

What type of relationship exists between Employee and its subtypes Secretary, Technician and Engineer?

Q3. In a sentence or two explain what does the following SQL Query do?

1. **SELECT Orders.OrderID, Customers.CustomerName, Orders.OrderDate**
   FROM Orders INNER JOIN Customers
   ON Orders.CustomerID=Customers.CustomerID;

2. **SELECT CompanyName FROM Suppliers AS s WHERE EXISTS**
   (SELECT FROM Products p, Categories c WHERE
   p.SupplierID = s.SupplierID AND p.CategoryID = c.CategoryID
   AND CategoryName LIKE "*Dairy*");

Q4. The following table is in 1 NF. Reduce the table to 2NF AND 3NF.

FACTS-

Knowing the student and course is enough to determine section and grade.
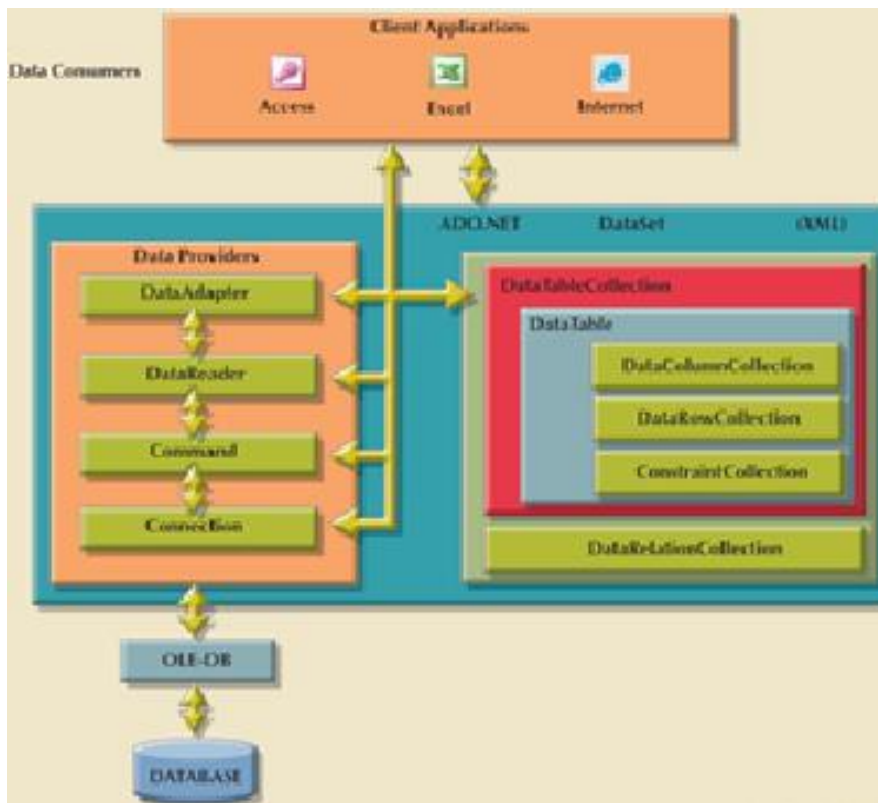
Also, a student can have just a single major.

Course	Section	Time	Room	RoomSize	Professor	Student	Major	Grade

Q5. Rewrite the following queries for optimization purposes-

SELECT user_id, last_name FROM users WHERE EXISTS (SELECT * FROM donationuser WHERE donationuser.user_id = users.user_id);

(HINT: JOIN QUERIES ARE FASTER THAN CORRELATED QUERIES)

Q6. Shown below is the counterpiece of Microsoft ADO.NET architecture. What does it enable (what capabilities does it provide)?
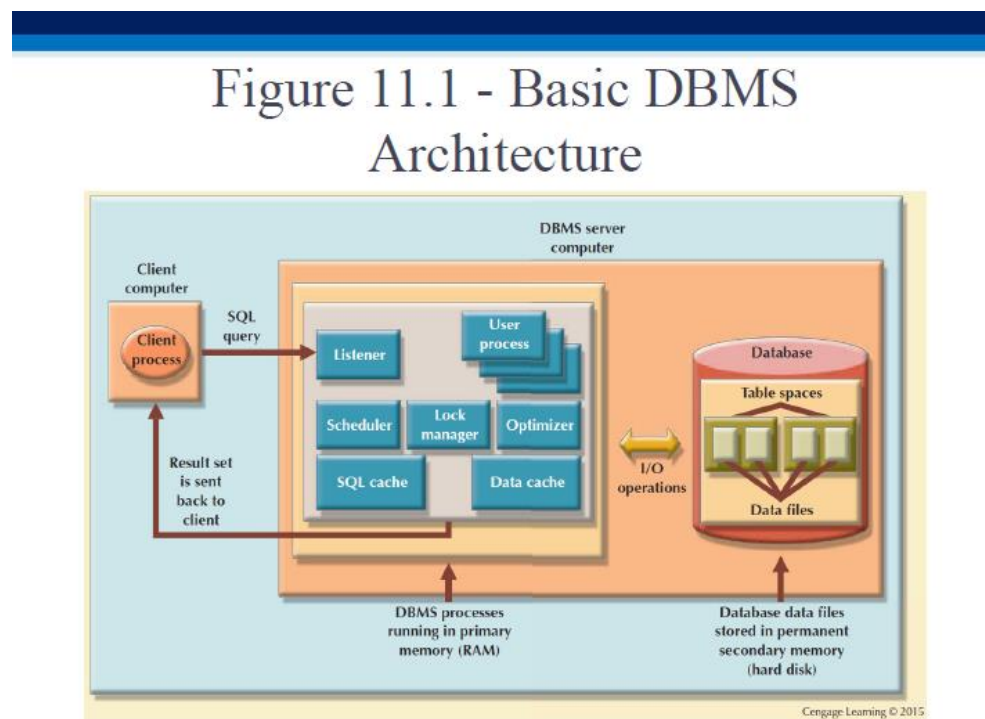
Q7. If two tables have one of the fields same which is the Primary key of one table, what is that field called in the other table? Name and give an example.

Q8. Transactions have two important SQL commands that gives the user a lot of flexibilty. Mention both these commands.

Q9. Logs are extremely important for transaction management. Briefly explain their importance. (No need for huge answers, you can just state in points)

Q10. I begin two transactions and never lead to the completion of either of them. I am stuck. Can you tell me what this situation is and help me solve this problem.

Q11. Shown below is the Basic RDBMS Architecture. In your own words briefly explain the components. (You do not need to give the exact definitions as mentioned in class. Just explain it in your own words).

Figure 11.1 - Basic DBMS Architecture

DBMS server computer

Client computer

Client process

SQL query

Listener

User process

Scheduler

Lock manager

Optimizer

SQL cache

Data cache

Result set is sent back to client

I/O operations

Database

Table spaces

Data files

DBMS processes running in primary memory (RAM)

Database data files stored in permanent secondary memory (hard disk)

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Q12. If you decide to be a Database Administrator for a company. How do you think your analytical skills will help in your job?