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ADBMS-Solution

Q. P. Code 50363

Qu-1 c) Retrieve the name of each employee who has a dependent with the same first name and is the same sex as the employee.

Answer:

```
SELECT E.Fname, E.Lname
FROM EMPLOYEE AS E
WHERE E.Ssn IN ( SELECT Essn
                 FROM DEPENDENT AS D
                 WHERE E.Fname=D.Dependent_name AND E.Sex=D.Sex );
```

OR

```
SELECT E.Fname, E.Lname
FROM EMPLOYEE AS E, DEPENDENT AS D
WHERE E.Ssn=D.Essn AND E.Sex=D.Sex
AND E.Fname=D.Dependent_name;
```

Qu-6 a) There are two levels for assigning privileges to use the database system: i) The account level and ii) The relation/table level. Give example of each considering the database shown in Figure-1.

Answer: One sample example:

i) The account level

Suppose that the DBA creates an account A1 and A2 and wants A1 to be able to create base relations. To do this, the DBA uses GRANT command in SQL:

```
GRANT CREATETAB TO A1;
```

The CREATETAB (create table) privilege gives account A1 the capability to create new database tables (base relations) and is hence an *account privilege*.

ii) The relation/table level

Now, suppose that account A1 wants to grant to account A2 the privilege to insert and delete tuples in Employee and Department relations as A1 is owner account and automatically has the GRANT OPTION.

```
GRANT INSERT, DELETE ON EMPLOYEE, DEPARTMENT TO A2;
```

In above example, account A2 cannot grant INSERT and DELETE privileges on the EMPLOYEE and DEPARTMENT tables because A2 was not given the GRANT OPTION in the command.

Qu-6 d) Suppose we want to check whenever an employee's salary is greater than the salary of his or her direct supervisor in the COMPANY database shown in Figure-1. Several events can trigger this rule: inserting a new employee record, changing an employee's salary, or changing an employee's supervisor. Create a SALARY_VIOLATION trigger which will notify the supervisor about the salary violations.

Answer:

One possible solution:

```
CREATE TRIGGER SALARY_VIOLATION
BEFORE INSERT OR UPDATE OF SALARY, SUPERVISOR_SSN
ON EMPLOYEE
FOR EACH ROW
WHEN ( NEW.SALARY > ( SELECT SALARY FROM EMPLOYEE
                     WHERE SSN = NEW.SUPERVISOR_SSN ) )
INFORM_SUPERVISOR(NEW.Superivisor_ssn, NEW.Ssn );
```

Qu-2 b) Star Schema for Supermarket.

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Answer:

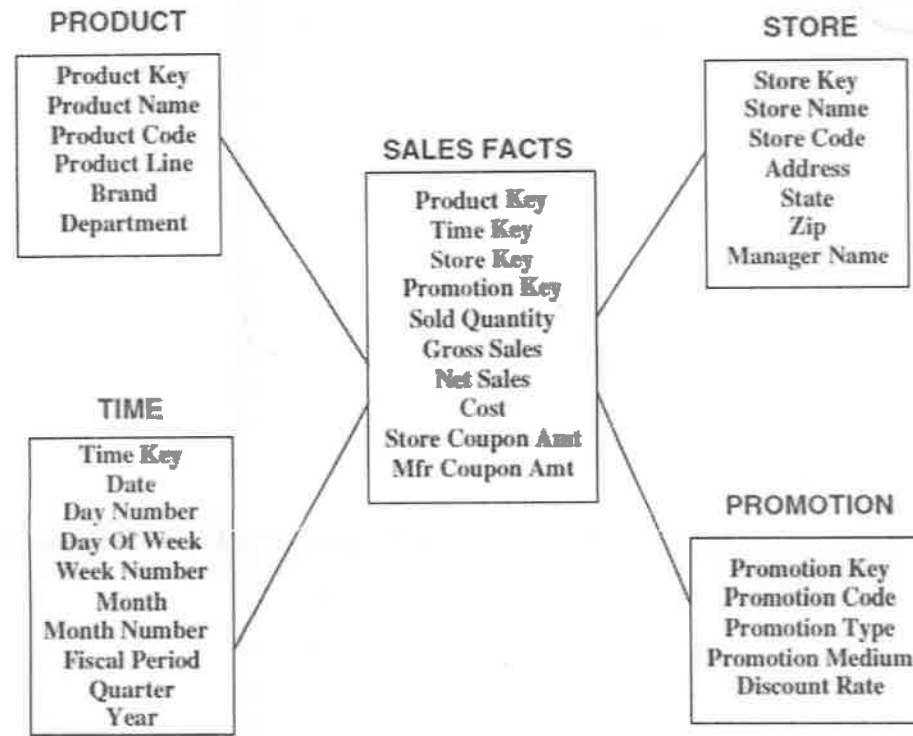


Figure-1 STAR schema for Supermarket.