KUPPI SERIES II

STRUCTURE QUERY LANGUAGE
SQL, or Structured Query Language, is a language to talk to databases.
It allows you to select specific data and to build complex reports.
Today, SQL is a universal language of data. It is used in practically all technologies that process data.
SQL is not a case-sensitive language.
- - This is a comment and it won't get executed.

DML
DDL
DCL

A Schema Elements
- Tables, Constraints, Views, Domains, and more!

Identifies By:
- A schema name / Command / Code
- An authorization identifier / name

SHOW DATABASES;
Display existing databases

CREATA DATABASE d;
Create a database

USES d;
Select database

CREATE TABLE t
(id INT PRIMARY KEY,
  name VARCHAR NOT NULL,
  price INT DEFAULT 0
);
Create a new table with three columns

CREATE TABLE t
(c1 INT, c2 INT, c3 VARCHAR,
 PRIMARY KEY (c1,c2)
);

CREATE TABLE t1
(c1 INT PRIMARY KEY,
  c2 INT,
  FOREIGN KEY (c2) REFERENCES t2(c2)
);
Set c2 column as a foreign key

DROP TABLE t ;
Delete the table from the database

ALTER TABLE t
ADD column;
Add a new column to the table

ALTER TABLE t
ADD constraint;
Add a constraint

ALTER TABLE t
DROP constraint;
Drop a constraint

ALTER TABLE t1 RENAME TO t2;
Rename a table from t1 to t2

ALTER TABLE t RENAME c1 TO c2;
Rename column c1 to c2

TRUNCATE TABLE t;
Remove all data in a table

INSERT INTO t(column_list)
VALUES(value_list);
Insert one row into a table

INSERT INTO t(column_list)
VALUES (value_list), (value_list), ….;
Insert multiple rows into a table

INSERT INTO t1(column_list)
SELECT column_list FROM t2;
Insert rows from t2 into t1

UPDATE t
SET c1 = new_value, c2 = new_value
WHERE condition;
Update values in the column c1, c2 that match the condition

DELETE FROM t;
Delete all data in a table

DELETE FROM t
WHERE condition;
Delete subset of rows in a table

DROP TABLE t ;
Delete the table from the database

ALTER TABLE t
ADD column;
Add a new column to the table

ALTER TABLE t
DROP COLUMN c ;
Drop column c from the table

SELECT c1 , c2 FROM t;
Query data in columns c1 , c2 from a table

SELECT * FROM t;
Query all rows and columns from a table

SELECT c1, c2 FROM t
WHERE condition;
Query data and filter rows with a condition

SELECT DISTINCT c1 FROM t
WHERE condition;
Query distinct rows from a table

SELECT c1, c2 FROM t
ORDER BY c1 ASC [DESC];
Sort the result set in ascending or descending
order

SELECT c1, aggregate(c2) FROM t
GROUP BY c1;
Group rows using an aggregate function

SELECT c1, aggregate(c2) FROM t
GROUP BY c1
HAVING condition;
Filter groups using HAVING clause

SELECT c1, c2 FROM t
ORDER BY c1 ASC [DESC];
Sort the result set in ascending or descending
order

SELECT c1, c2 FROM t1, t2;
Another way to perform cross join

SELECT c1, c2 FROM t1
WHERE c1 [NOT] LIKE pattern;
Query rows using pattern matching %, _

SELECT c1, c2 FROM t
WHERE c1 [NOT] IN value_list;
Query rows in a list

SELECT c1, c2 FROM t
WHERE c1 BETWEEN low AND high;
Query rows between two values

SELECT c1, c2 FROM t
WHERE c1 IS [NOT] NULL;
Check if values in a table is NULL or not

SELECT c1 FROM t
WHERE c1 BETWEEN v1 AND v2
Select listing between

MODEL QUESTION I

The following tables named salesman, customer and order belong to the database Sales

Salesman (salesID , name , city , commission)
Cust (CustID , cust_name , city , grade , salesID)
Order (ordID , amount , ordDate , custID , salesID)

a. Write a SQL statement to create salesman , customer , order table
b. Write a SQL statement to display names of salesmen who get a commission above 0.12
c. Write a SQL statement to display names of cities where customer live. Note that the name of city should appear once
d. Write an SQL statement to display the name , city of Salesman of with SalesID = "E00143"

MODEL QUESTION II

Person

NIC	Name	Cname	Salary
657324567v	A.J.Perera	Amazon	65000
784589012v	S.A.Dias	Yahoo	70000
725678234v	R.T.Zoysa	Microsoft	50000
683456785v	P.M.Costa	Google	55000
754567890v	W.A.Yapa	Yahoo	75000

Holding

NIC	Cname	Numshares
657324567v	Yahoo	3000
754567890v	Microsoft	4500
683456785v	Google	4500
725678234v	Yahoo	5000
784589012v	Google	6000
683456785v	Amazon	3500
725678234v	Microsoft	4000

Company

Cname	Location
Amazon	California
Yahoo	New Jersy
Google	Newyork
Microsoft	California

a. Write an SQL statement to obtain only the name of the persons working in Yahoo Company and their NIC numbers
b. Alter the salary to person with the NIC number 754567890v as 9000.
c. Change the field Salary into Net Salary in Person data table.

d. Write an SQL statement to obtain only the list of persons holding the shares, name of the company that they hold the shares, and number of shares they have.

MODEL QUESTION III

Consider the following three tables used in a school database.

Student

stdid	name	address
S01	Perera	Galle
S02	Vimal	Galle
S03	Ameen	Colombo
S04	Jamuna	Jaffna

Subject

subid	name
SU01	Mathematics
SU02	Physics
SU03	ICT

Result

stdid	subid	marks
S01	SU01	79
S01	SU03	80
S02	SU01	90
S03	SU02	66

a. Write down appropriate SQL statement to obtain details such as stdid, and address.
b. Write down appropriate SQL statement to obtain details such Student Name, Subject Name, and Marks.
c. Write down appropriate SQL statement to insert first record in Student table.
d. Write down appropriate SQL statement to create Student table (primary key is stdid).

MODEL QUESTION IV

Production				
Pro_No	Pro_Type	Pro_Name	Unit_Price	Sale_Price
MLK02	Diary Milk	Anchor	330.00	325.00
MLK04	Diary Milk	Maliban	325.00	320.00
MLK03	Butter	Anchor	130.75	128.75
MLK06	Diary Milk	Lakspray	338.00	330.00
MLK07	Butter	Maliban	128.50	125.50

a. Construct a SQL statement to design a database table which contains attributes relevant to the table.
b. What is the SQL statement which is used to add the following record to the table?
   MLK08   Butter Lakspray.   125.00 128.00
c. Write down the SQL statement to display Pro_Type, Pro_Name and Unit_Price which products are not similar to "Lakspray" in the Pro_Name field.

   UPDATE Production
   SET Unit_Price=335.00
   WHERE Pro_No='MLK04'
d. What would be the output of this SQL statement ?

MODEL QUESTION V

Study following ER diagram and answer given questions.
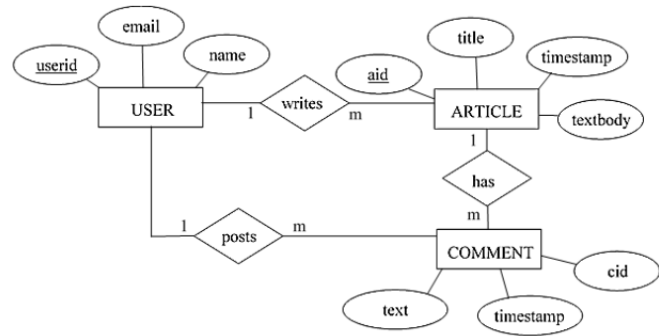
a. Write the relational schema obtainable from this ER diagram
b. Write SQL statements to create USER table and ARTICLE table
c. Write SQL statements to insert a new field as "address" two user table
d. Write SQL statements to insert following record to USER table

1125	saman@gmail.com	Saman Perera	Kurunegala

MODEL QUESTION VI

a. Write down SQL statement to create the table Order.

In Person table, PersonID is a primary key.
PersonID is a foreign key in Order table.

Order (OrderID,OrderNumber,PersonID)
Person (PersonID,PersonName)

Exam

ExamId	ExamName	Year
E001	GCE (O/L)	2019
E002	GCE (A/L)	2019
E003	Term 1	2018
E004	Term 2	2019
E005	Term 3	2019

Student

StuId	StuName	Address	DateofBirth	ExamID
S0001	T. Pirasanth	Jaffna	2001.12.05	E002
S0002	V.Jansan	Vaddukoddai	2001.10.03	E001
S0003	T. Luxshya	Chankanai	2001.03.09	E001
S0004	P.Kanista	Chunnakam	2001.04.10	E004
S0005	S.Arvinth	Jaffna	2000.12.21	E005

a. Write a SQL statement to create a student table in a database
b. Write a SQL statement to display StuName, ExamName and Year of all students.
c. Write a SQL statement to insert the following record to the student table:
   S0006 S.Nazeer Colombo 2000.07.23 E002

MODEL QUESTION VII

Employee

EmployeeNo	EmpName	EmpAddress	EmpSalary
A001	Perera	Negombo	30,000
A002	Kamal	Kandy	45,000

a. Build an SQL statement to create a table in a database so that it contains the attributes of the above table.

Insert Into 'Employee'('EmployeeNo', 'EmpName', 'EmpAddress', 'EmpSalary') Values('A 003', 'Saman', 'Kandy', 20000)

b. What change will happen in the data base when this SQL statement is executed.

ALTER TABLE 'EMPLOYEE' ADD 'Department' VARCHAR (20)

c. What change will happen in the table after this SQL statement is executed.

SELECT EmployeeNO, EmpName, EmpSalary FROM Employee WHERE EmpSalary >=30000

d. Explain the result after this SQL statement is executed.

e. What will be the end result, when the statement 'ORDER BY EmpSalary' is appended to the end of the SQL statement in the (d) above.

LEARN WITH MAESTRO
RIYAS RUSHARD