**Assignment and practice II:**

**Submission date: (8days)next Friday from today July3rd.**

**Question1:**  
Create a table using the below details and set id as primary key for employee table.  
employee(id, name, address,salary,company\_name,job\_title)  
Insert 5 rows on it.  
1. Display all employee names and salary whose salary is greater than minimum salary of  
the company and job title starts with 'M‘.  
2. Write a query to find all the employees who work in the same job\_title as Ram.

CREATE DATABASE company;

USE company;

CREATE TABLE employee (

id INT PRIMARY KEY,

ename VARCHAR(30),

address VARCHAR(50),

salary FLOAT,

company\_name VARCHAR(30),

job\_title VARCHAR(30)

);

INSERT INTO employee VALUES

(1, 'Ram', 'Kathmandu', 30000, 'ABC Corp', 'Manager'),

(2, 'Shyam', 'Lalitpur', 25000, 'XYZ Ltd', 'Marketing Executive'),

(3, 'Hari', 'Bhaktapur', 28000, 'ABC Corp', 'Mechanic'),

(4, 'Sita', 'Pokhara', 32000, 'XYZ Ltd', 'Manager'),

(5, 'Gita', 'Biratnagar', 22000, 'ABC Corp', 'Mason');

SELECT ename, salary FROM employee AS e WHERE salary >

(SELECT MIN(salary) FROM employee WHERE company\_name = e.company\_name)

AND job\_title LIKE 'M%';

SELECT \* FROM employee WHERE job\_title =

(SELECT job\_title FROM employee WHERE ename = 'Ram');  
  
**Question2:**  
Create a table using the below details and set id as primary key for student table.  
student(id, name, course, subject\_id, mark)  
subject(subject\_id, subject)  
Insert 5 rows on both tables.  
1. Select the student details along with subject and mark.  
2. Group the students based on the course.

CREATE DATABASE school;

USE school;

CREATE TABLE ssubject (

subject\_id INT PRIMARY KEY,

ssubject VARCHAR(30)

);

CREATE TABLE student (

id INT PRIMARY KEY,

sname VARCHAR(30),

course VARCHAR(30),

subject\_id INT,

mark INT,

FOREIGN KEY (subject\_id) REFERENCES ssubject(subject\_id)

);

INSERT INTO ssubject VALUES

(1, 'Math'),

(2, 'Science'),

(3, 'English'),

(4, 'Computer'),

(5, 'Nepali');

INSERT INTO student VALUES

(101, 'Amit', 'BSc', 1, 85),

(102, 'Bina', 'BSc', 2, 75),

(103, 'Chetan', 'BBA', 3, 65),

(104, 'Diya', 'BBA', 4, 80),

(105, 'Elina', 'BSc', 5, 90);

SELECT s.id, s.sname, s.course, sub.ssubject, s.mark

FROM student AS s

JOIN ssubject AS sub

ON s.subject\_id = sub.subject\_id;

SELECT course, COUNT(\*) AS total\_students

FROM student

GROUP BY course;  
  
**Question3:**  
Create a table using the below details and set id as primary key for faculty table.  
faculty(id, name address, subject, salary)  
Insert 5 rows on it.  
1. Find total rows, sum, average, maximum, minimum salary of faculty.  
2. Write a query to display all the faculty and salary whose salary is greater than average salary of all faculty.

CREATE DATABASE university;

USE university;

CREATE TABLE faculty (

id INT PRIMARY KEY,

fname VARCHAR(30),

address VARCHAR(50),

fsubject VARCHAR(30),

salary FLOAT

);

INSERT INTO faculty VALUES

(1, 'Arjun', 'Kathmandu', 'Math', 30000),

(2, 'Bijay', 'Lalitpur', 'Science', 25000),

(3, 'Chetana', 'Pokhara', 'English', 32000),

(4, 'Dipak', 'Bhaktapur', 'Computer', 28000),

(5, 'Elisha', 'Chitwan', 'Nepali', 27000);

SELECT

COUNT(\*) AS total\_rows,

SUM(salary) AS total\_salary,

AVG(salary) AS avg\_salary,

MAX(salary) AS max\_salary,

MIN(salary) AS min\_salary

FROM faculty;

SELECT fname, salary FROM faculty WHERE salary >

(SELECT AVG(salary) FROM faculty);  
  
**Question4:**  
Create a table using the below details set id as primary key for teacher table.  
teacher(id, name, address,salary)  
subject(subject\_id, subject\_name)  
Insert 5 rows on it.  
1. Add a new column subject\_id on the teacher table.  
2. Create a view from the teacher using the name and subject\_name column.

CREATE DATABASE college;

USE college;

CREATE TABLE ssubject (

subject\_id INT PRIMARY KEY,

subject\_name VARCHAR(30)

);

CREATE TABLE teacher (

id INT PRIMARY KEY,

tname VARCHAR(30),

address VARCHAR(50),

salary FLOAT

);

INSERT INTO ssubject VALUES

(1, 'Math'), (2, 'Science'), (3, 'English'), (4, 'Computer'), (5, 'Nepali');

INSERT INTO teacher VALUES

(1, 'Anil', 'Kathmandu', 25000),

(2, 'Bimala', 'Lalitpur', 27000),

(3, 'Chiran', 'Pokhara', 23000),

(4, 'Dikshya', 'Bhaktapur', 26000),

(5, 'Erika', 'Chitwan', 28000);

ALTER TABLE teacher ADD subject\_id INT;

ALTER TABLE teacher ADD FOREIGN KEY (subject\_id) REFERENCES ssubject(subject\_id);

UPDATE teacher SET subject\_id = 1 WHERE id = 1;

UPDATE teacher SET subject\_id = 2 WHERE id = 2;

UPDATE teacher SET subject\_id = 3 WHERE id = 3;

UPDATE teacher SET subject\_id = 4 WHERE id = 4;

UPDATE teacher SET subject\_id = 5 WHERE id = 5;

CREATE VIEW teacher\_subject\_view AS

SELECT t.tname, s.subject\_name

FROM teacher AS t

JOIN ssubject AS s ON t.subject\_id = s.subject\_id;

SELECT \* FROM teacher\_subject\_view;

**Question5:**

What is tuple realtion calculus ?  Given the following schema, write tuple relational calculus for selecting name and address of employee who are working in a company having Cid=E01 ,  
Employee(Eid, Ename, Address, Cid)   
Company(Cid, CName)

**Question6:**

What is relational database? Explain different characteristic of a relation. Defain domain constraint.

**Question7:**

What are the characteristics of DBMS? Explain.

**Question8:**

What is difference between Entities and Entity sets? Explain with example.

**Question9:**

What is data abstraction? What are different levels of data abstraction? Brief it.

**Question 10:**

Explain constraints and characteristics of specialization and generalization of data model.

**Question 11:**

Explain the difference between “Join” and “Natural Join”, of algebriac operations with example.

**Question 12:**

Explain the difference between 3 different Outer joins of algebriac operations with example.