Faculty of Engineering, University Of Jaffna
Department Of Computer Engineering
EC5070 – Database Systems
Lab Instruction Sheet 01

Date: 23-Aug-2022 **Time: 9.00 to 12.00**

Intended Learning Outcome:

After today's class you will be able to

- Use a commercial Database Management System Ms SQLServer
- Apply the Query Languages for database definition and manipulation

Instructions:

- Any plagiarized work will be given 0 marks.
- Submit your lab work as a zip file named LAB01_20YYEXXX (20YYEXXX – Your Registration Number) on/before the given deadline via teams.
- The zip file should contains all code files, screen shots and your report.

Step 01

- Download and Install the MySQL workbench 8.0

Step 02

- Create the table name as "EMPLOYEE"

```
CREATE TABLE EMPLOYEE
( Fname VARCHAR(15) NOT NULL, -- Adding columns
Minit CHAR,
Lname VARCHAR(15) NOT NULL, -- NOT NULL means the domain must have a value
Ssn CHAR(9) NOT NULL, -- CHAR padded to 9 spaces
Bdate DATE, -- Date, YYYY-MM-DD
Address VARCHAR(30), -- Variable length CHAR array (string)
Sex CHAR, -- Single character
Salary DECIMAL(10,2), -- Decimal up to a precision of two decimal points
Super_ssn CHAR(9),
Dno INT NOT NULL,
PRIMARY KEY (Ssn) -- Primary key constraint);
```

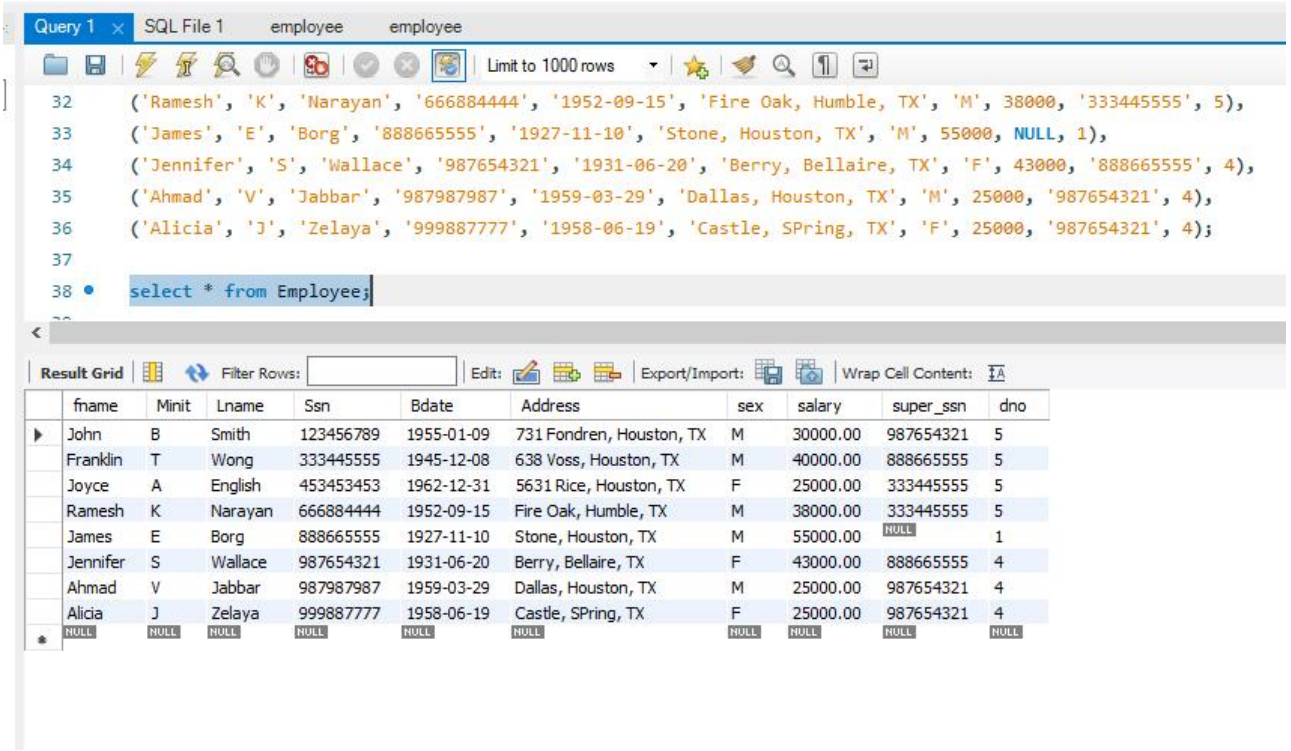
- Create the table name as "DEPARTMENT"

```sql
-- Create DEPARTMENT table
CREATE TABLE DEPARTMENT
( Dname VARCHAR(15) NOT NULL,
Dnumber INT NOT NULL,
Mgr_ssn CHAR(9) NOT NULL,
Mgr_start_date DATE,
PRIMARY KEY (Dnumber),
UNIQUE (Dname), -- Unique value constraint - no Departments can have the same name
FOREIGN KEY (Mgr_ssn) REFERENCES EMPLOYEE(Ssn) ); -- Foreign key constraint
-- Now that the DEPARTMENT table is defined, add the Foreign Key constraints
-- to the EMPLOYEE table.
-- Super_ssn references Ss
```

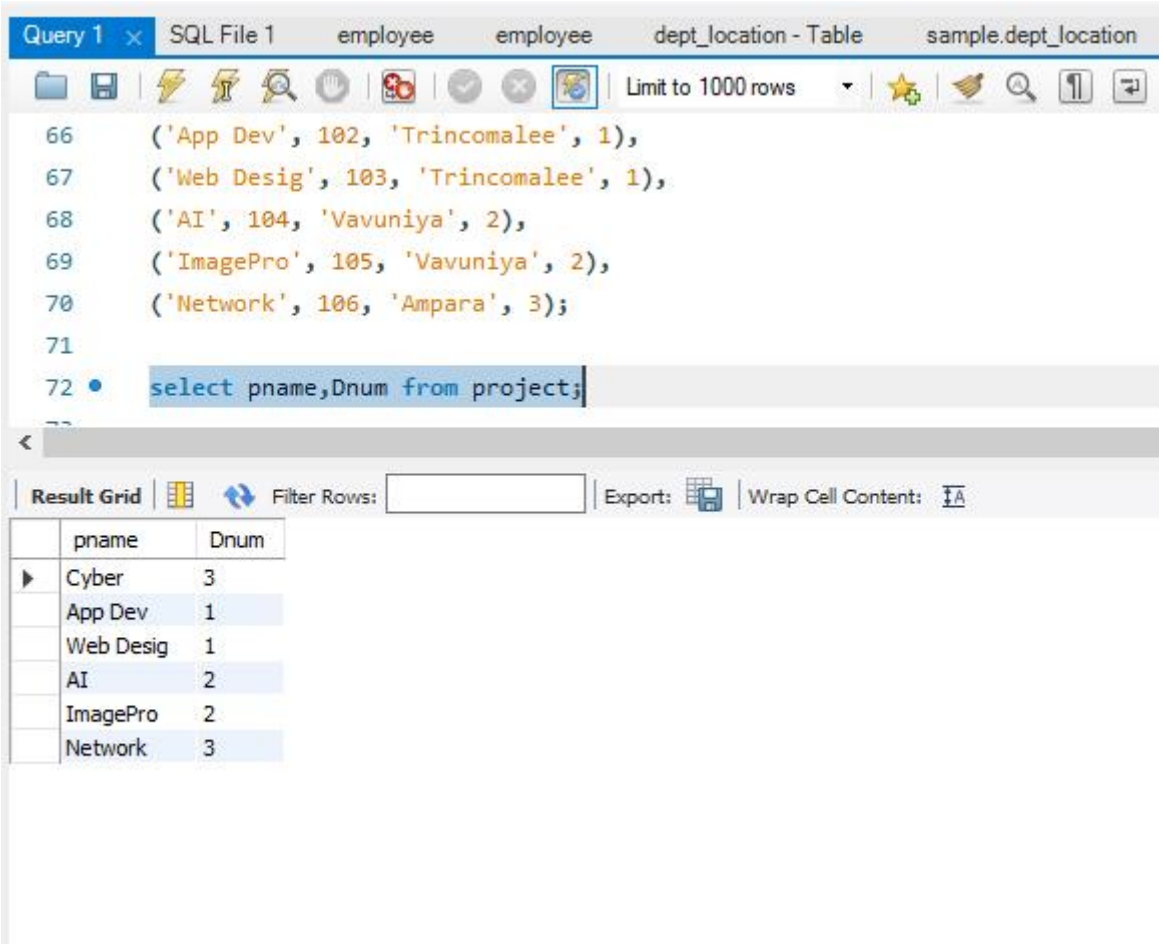
Step 03
Insert the values into the table

```
INSERT INTO e023.dbo.EMPLOYEE values
('John', 'B', 'Smith', '123456789', '1955-01-09', '731 Fondren, Houston, TX', 'M', 30000,
'987654321', 5),
('Franklin', 'T', 'Wong', '333445555', '1945-12-08', '638 Voss, Houston, TX', 'M', 40000,
'888665555', 5),
('Joyce', 'A', 'English', '453453453', '1962-12-31', '5631 Rice, Houston, TX', 'F',
25000, '333445555', 5),
('Ramesh', 'K', 'Narayan', '666884444', '1952-09-15', 'Fire Oak, Humble, TX', 'M', 38000,
'333445555', 5),
('James', 'E', 'Borg', '888665555', '1927-11-10', 'Stone, Houston, TX', 'M', 55000, NULL,
1),
('Jennifer', 'S', 'Wallace', '987654321', '1931-06-20', 'Berry, Bellaire, TX', 'F',
43000, '888665555', 4),
('Ahmad', 'V', 'Jabbar', '987987987', '1959-03-29', 'Dallas, Houston, TX', 'M', 25000,
'98765432-1', 4),
('Alicia', 'J', 'Zelaya', '999887777', '1958-06-19', 'Castle, SPring, TX', 'F', 25000,
'987654321', 4)
;
```

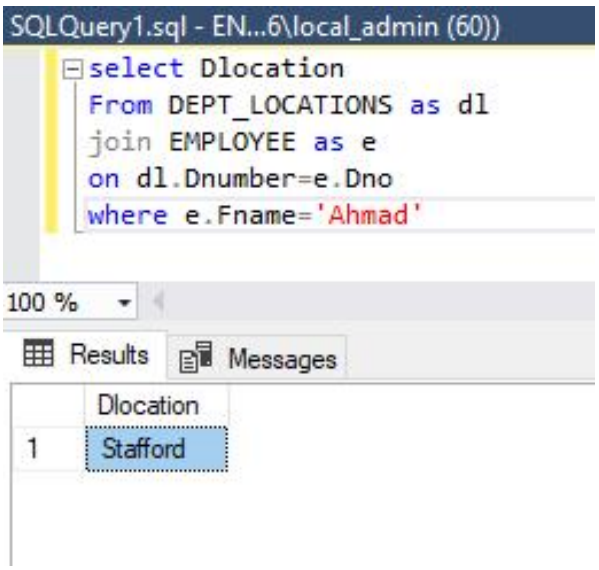
Step 04



- To view the inserted values To view the particular values only



- Table join



Exercises

1. Create the below tables with constraints:

    i. Employee (Fname ,Minit, Lname, Bdate, Address , Sex , Salary,Super_ssn ,Dno, Ssn)
    ii. DEPARTMENT(Dname, Dnumber, Mgr_ssn, Mgr_start_date)
    iii. DEPT_LOCATIONS (Dnumber, Dlocation)
    iv. WORKS_ON (Essn, Pno, Hours)
    v. DEPENDENT(Essn, Dependent_name, Sex, Bdate, Relationship)
    vi. PROJECT(Pname,Pnumber,Plocation,Dnum)

2. Insert the values to the DEPARTMENT, DEPENDENT, DEPT_LOCATIONS, WORKS_ON and PROJECT tables:

    - The values of the employee's first names should be have your friend's names who are sitting near of you at the practical time
    - You should insert **exact 4 records**

3. Check the all INSERT statements ran successfully.

4. Generate ER diagram for this above scenario.

5. Write SQL queries for the below questions:

    a. Find the all details for the employee who has a particular ssn number in the EMPLOYEE table

    b. Find the First name and address of the employee who receive a salary of more than 30,000

    c. Find the department names and its location details

    d. Find the Department location for the particular employee

    e. Find the managers names of the department

    f. Find the relationship of the employees with their dependents names

    g. Find the First name and address of the employee who got the salary between 25 000 and 50 000

    h. Find the department Name and start date for department in a particular location.

    i. Find the Department name and Department number for particular project.

    j. Find the all details for the Female employees and her Department details .