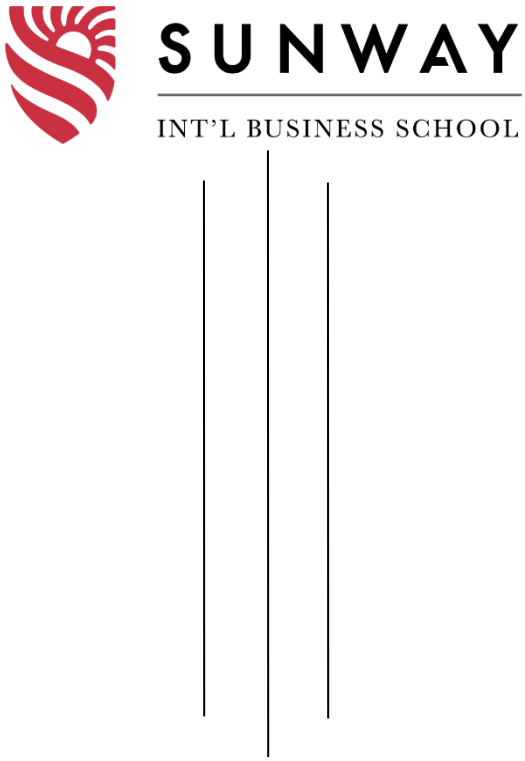


Program Name: Bachelor of Computer Science (HONS)

Course Code: CSC 1403

Course Name: Database Concepts

Assignment: 2

Date of Submission: 14th December, 2021

**Submitted By:**

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IUKL ID: 042101900085

Semester: Second

**Submitted To:**

Faculty Name: Satyam Paudel

Department: BCS

## Question no. 1

**a) Translate the entities into table, instances into rows and attributes to columns.**

- **Employee**

Create table Employee(

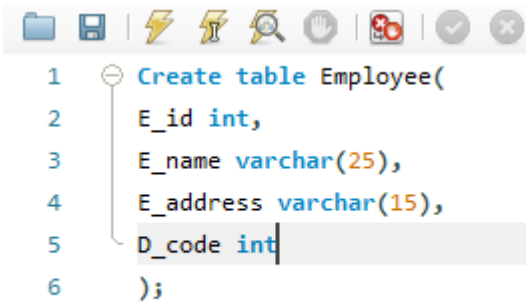
E_id int,

E_name varchar(25),

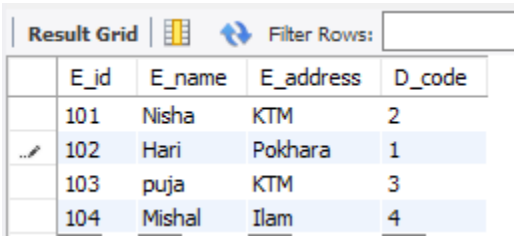
E_address varchar(15),

D_code int

);




Output:




| E_id | E_name | E_address | D_code |
|---|---|---|---|
| 101 | Nisha | KTM | 2 |
| 102 | Hari | Pokhara | 1 |
| 103 | puja | KTM | 3 |
| 104 | Mishal | Ilam | 4 |

- **Department**

Create table Department(

D_code int,

Dname varchar(20)

);

```
1  Create table Department(
2  D_code int,
3  Dname varchar(20)
4  );
```

Output:

| | D_code | Dname |
|---|---|---|
| | 1 | Admin |
| | 2 | HR |
| | 3 | Developer |
| | 4 | QA |

- **Payment**

Create table Payment(

P_id int,

E_id int,

Salary int

);

```
1  Create table Payment(
2  P_id int,
3  E_id int,
4  Salary int
5  );
```

Output:

Result Grid | Filter Rows

| | P_id | E_id | Salary |
|---|---|---|---|
| | 201 | 101 | 45000 |
| | 202 | 102 | 62000 |
| | 203 | 103 | 52000 |
| | 204 | 104 | 58000 |

- **Post:**

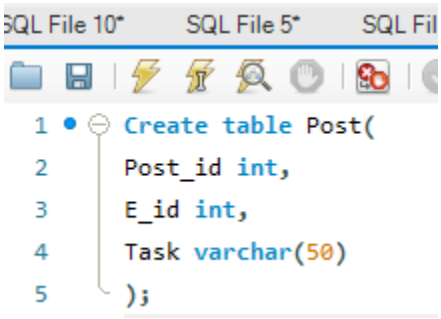
  Create table Post(

  Post_id int,

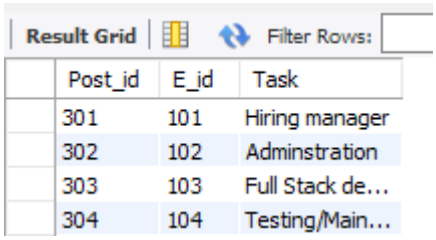
  E_id int,

  Task varchar(50)

  );




  Output:




- **Recess:**

  Create table Recess**(**

  R_id int,

  E_id int,

  Recess_days varchar(50),

  Reasons varchar(50)

  );

SQL File 10* SQL File 5* SQL File 5*

```
1  Create table Recess(
2  R_id int,
3  E_id int,
4  Recess_days varchar(50),
5  Reasons varchar(50)
6  );
```

Output:

Result Grid | Filter Rows: | Edit:

| R_id | E_id | Recess_days | Reasons |
|---|---|---|---|
| 401 | 101 | 7 | Family pro... |
| 402 | 104 | 2 | Hospital |
| 403 | 102 | 1 | DV |

**b) Enforce the Entity Integrity and Referential Integrity Constraint.**

- **Employee**
  Alter table Employee
  Add primary key(E_id),
  Add foreign Key(D_code) references department(D_code)

- **Department**
  Alter table Employee
  Add primary key (D_code)

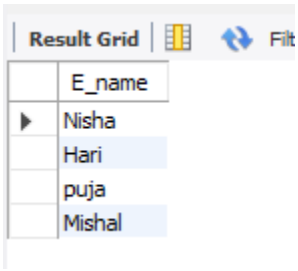
- **Payment**
  alter table Payment
  add primary key(P_id),
  add foreign key(E_id) references employee(E_id)

- **Post**
  alter table Post
  add primary key(Post_id),
  foreign key(E_id) references employee(E_id)

- **Recess**
  Alter table recess
  primary key(R_id),
  foreign key(E_id) references employee(E_id)

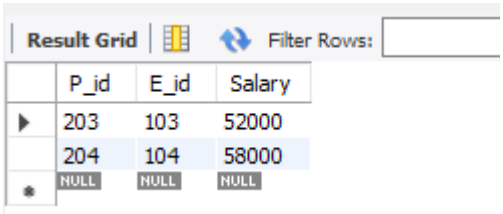
## Question no. 2:

**a) Demonstrate the use of DISTINCT command in your database.**
SELECT DISTINCT E_name FROM employee;


Result Grid | Filt

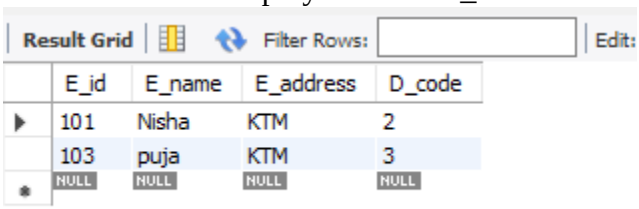
| E_name |
|---|
| Nisha |
| Hari |
| puja |
| Mishal |

**b) Perform a Range Search Condition.**
SELECT * from payment
where Salary between 50000 and 60000;


Result Grid | Filter Rows:

| P_id | E_id | Salary |
|---|---|---|
| 203 | 103 | 52000 |
| 204 | 104 | 58000 |
| NULL | NULL | NULL |

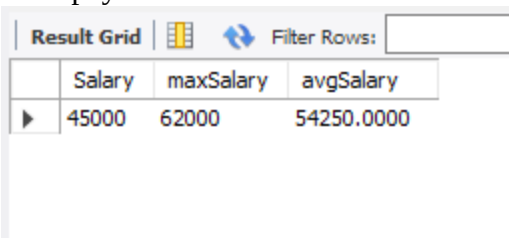
**c) Demonstrate how you perform Pattern Searching in your database table.**
SELECT * from employee where E_name like '%a';


Result Grid | Filter Rows: | Edit:

| E_id | E_name | E_address | D_code |
|---|---|---|---|
| 101 | Nisha | KTM | 2 |
| 103 | puja | KTM | 3 |
| NULL | NULL | NULL | NULL |

**d) Make use of any one Aggregate Function.**

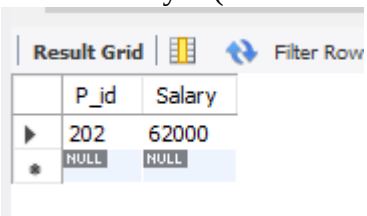
```
SELECT
        Salary, max(Salary) as maxSalary,
   avg(Salary) as avgSalary
from payment
```



| Salary | maxSalary | avgSalary |
|---|---|---|
| 45000 | 62000 | 54250.0000 |

**e) Demonstrate how you can use subqueries in your database.**

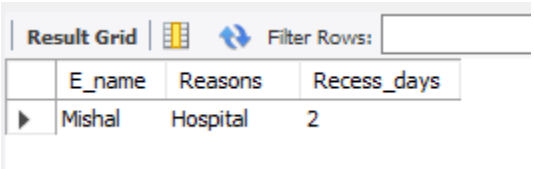
```
SELECT
        P_id, Salary
from
        payment
where
        Salary = (Select max(salary) from payment);
```



| P_id | Salary |
|---|---|
| 202 | 62000 |
| NULL | NULL |

**f) Write a SQL Query to demonstrate three table join.**

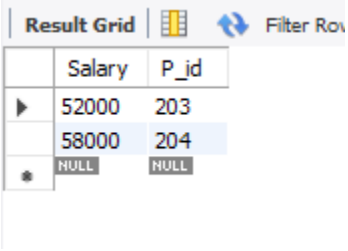
```
Select E_name, Reasons, Recess_days
from Recess
join employee on Recess.E_id = employee.E_id
join Post on Recess.Post_id = Post.Post_id

where R_id = 402;
```



| E_name | Reasons | Recess_days |
|---|---|---|
| Mishal | Hospital | 2 |

**g) Demonstrate the use of having clause.**

```
SELECT
        Salary, P_id
from
        payment
group by
        Salary
having
        Salary between 50000 and 60000;
```




| | Salary | P_id |
|---|---|---|
| ▶ | 52000 | 203 |
| | 58000 | 204 |
| * | NULL | NULL |