SCS 1203 –DATABASE I

SQL Lab Session 03

1. Create the database ***company***.

2. Create all tables according to the given structure below.

Table 1: employees

Attribute Name	Attribute Type	Description
emp_no	Integer	primary key
birth_data	Date	Cannot be null
first_name	Text field with 14 characters	Cannot be null
last_name	Text field with 16 characters	Cannot be null
gender	'M' or 'F'	Cannot be null
hire_date	Date	Cannot be null

Table 2: departments

Attribute Name	Attribute Type	Description
dept_no	Four characters	Cannot be null, Primary key
dept_name	Text field with 40 characters	Cannot be null, Unique key

Table 3: dept_manager

Attribute Name	Attribute Type	Description
dept_no	Four characters	Cannot be null, Primary key, foreign key to department.dept_no, on delete cascade
emp_no	Integer	Cannot be null, Primary key, foreign key to employees.emp_no, on delete cascade
from_date	Date	Cannot be null
to_date	Date	Cannot be null

Table 4: dept_emp

Attribute Name	Attribute Type	Description
emp_no	Integer	Cannot be null, Primary key, foreign key to employees.emp_no, on delete cascade
dept_no	4 characters	Cannot be null, Primary key, foreign key to departments.dept_no, on delete cascade
from_date	Date	Cannot be null
to_date	Date	Cannot be null

Table 5: titles

Attribute Name	Attribute Type	Description
emp_no	Integer	Cannot be null, Primary key, foreign key ot employees.emp_no, on delete cascade
title	Text field with 50 characters	Cannot be null, Primary key
from_date	Date	Cannot be null, Primary key
to_date	Date	Cannot be null

Table 6: salaries

Attribute Name	Attribute Type	Description
emp_no	Integer	Cannot be null, Primary key, foreign key to employees.emp_no, on delete cascade
salary	Integer	Cannot be null
from_date	Date	Cannot be null, Primary key
to_date	Date	Cannot be null

3. Insert data into above tables.

Hints

1. How to define a unique key when creating a table?

- The UNIQUE constraint ensures that all values in a column are different.
- Both the UNIQUE and PRIMARY KEY constraints provide a guarantee for uniqueness for a column or set of columns.
- A PRIMARY KEY constraint automatically has a UNIQUE constraint.
- However, you can have many UNIQUE constraints per table, but only **one** PRIMARY KEY constraint per table.

Example:

```
CREATE TABLE table_name (
        Column1 data_type ,
        Column2 data_type [NOT NULL],
PRIMARY KEY (Column1),
UNIQUE (Column2)
) ;
```

2. How to define a Foreign Key when creating a table?

- A FOREIGN KEY is a key used to link two tables together.
- A FOREIGN KEY is a field (or collection of fields) in one table that refers to the PRIMARY KEY in another table.
- The table containing the foreign key is called the **child table**, and the table containing the candidate key is called the **referenced** or **parent table**.

Example:

CREATE TABLE child_table(

column1 data_type [NOT NULL],

column2 data_type [NOT NULL],

FOREIGN KEY (child_col1) ***REFERENCES*** parent_table (parent_col1));

3. How to use *ON DELETE CASCADE* with Foreign Keys*?*

- A foreign key with cascade delete means that if a record in the **parent table** is deleted, then the corresponding records in the **child table** will automatically be deleted.
- This is called a cascade delete in SQL Server.
- A foreign key with cascade delete can be created using either a CREATE TABLE statement or an ALTER TABLE statement.

Example:

CREATE TABLE child_table(

column1 data_type [NULL | NOT NULL],

column2 data_type [NULL | NOT NULL],

FOREIGN KEY (child_col1) *REFERENCES* parent_table (parent_col1) ***ON DELETE CASCADE****);*