



Lab Report 1

COURSE CODE: CSE384

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SECTION: 02

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Methodology

SQL Concepts Learned

- How to create tables with PRIMARY KEY, NOT NULL, and FOREIGN KEY constraints.
- Why the referenced table (Employees) must be created before using a foreign key.
- Correct use of VARCHAR for text and DATE for date fields.
- How to insert values with proper formatting, especially for dates using 'YYYY-MM-DD'.
- The importance of constraints to ensure data is valid and connected properly.

SQL Techniques Used

1. Create the Employees table first

Since Projects contains a foreign key (Manager_ID) that references Employees(Employee_ID), we needed to create the Employees table before the Projects table.

2. Create the Projects table

We defined five columns:

- Project_ID : used as the primary key to ensure uniqueness.
- Project_Name : marked as NOT NULL so no empty names are allowed.
- Start_Date and End_Date : both use DATE data type to store valid dates.
- Manager_ID : a foreign key that references the Employee_ID of the employee managing the project.

3. Use of different data types and constraints

- VARCHAR(20) was used for string-based values like IDs and names.
- DATE was used for date fields.
- PRIMARY KEY was applied to Project_ID to make each project unique.
- NOT NULL was used to prevent blank entries in Project_Name.
- FOREIGN KEY was used to ensure that Manager_ID always matches an existing employee.

4. Inserting values

- We inserted records into Employees first.
- Then inserted two records into Projects, using correct formats for text and date fields.

Results and Output

Create employees table

Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers

Run SQL query/queries on database lab task 1:

```
1 create table employees(  
2     Employee_ID varchar(20) primary key,  
3     First_Name varchar(20),  
4     Last_Name varchar(20) not null,  
5     Age numeric(20)  
6  
7  
8 );
```

Insert values (employees table)

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers

Run SQL query/queries on table lab task 1.employees:

```
1 insert into employees values ('001', 'Rahat', 'Hossan', 22),  
2 ('002', 'Rakib', 'Hossan', 26);
```

employees table

				Employee_ID	First_Name	Last_Name	Age
<input type="checkbox"/>	Edit	Copy	Delete	001	Rahat	Hossan	22
<input type="checkbox"/>	Edit	Copy	Delete	002	Rakib	Hossan	26

↑ ☐ Check all With selected: Edit Copy Delete Export

Create projects table

Run SQL query/queries on table lab task 1.projects: ⓘ












```
1 create table Projects(  
2  
3     Project_ID varchar(20) primary key,  
4     Project_Name varchar(20) not null,  
5     Start_Date date,  
6     End_Date date,  
7     Manager_ID varchar(20),  
8     foreign key (Manager_ID) REFERENCES employees(Employee_ID)  
9  
10  
11 );
```

Insert values (projects)

Run SQL query/queries on table lab task 1.projects: ⓘ

```
1 insert into projects values ('P01' , 'QuickAid', '2004-02-12', '2006-03-13', '001'),  
2 ('P02' , 'MRIS', '2007-02-12', '2009-03-13', '002');
```

projects Table

			Project_ID	Project_Name	Start_Date	End_Date	Manager_ID
<input type="checkbox"/>	 Edit	 Copy	 Delete	P01	QuickAid	2004-02-12	2006-03-13 001
<input type="checkbox"/>	 Edit	 Copy	 Delete	P02	MRIS	2007-02-12	2009-03-13 002
	<input type="checkbox"/> Check all	With selected:	 Edit	 Copy	 Delete	 Export	