

10_3 LAB

Time: 2 Hours

In this lab, we'll walk through creating a database that tracks employees. We'll go step by step through the design and creation.

Create the database

Create a new database called LAB10. Make sure you've created a folder on your computer called **db**s so we can store the .mdf and .ldf files.

```
USE master;
CREATE DATABASE LAB10
ON
(NAME = 'Lab10_data', FILENAME = 'D:\db\s\lab10.mdf')
LOG ON
(NAME = 'Lab10_log', FILENAME = 'D:\db\s\lab10.ldf');
GO
```

Plan the tables

Table Name	Employees			Table Name	job
Table Name	Employee Status			Table Name	department

Our database will have four tables.

- An Employee table for holding a list of employees,
- An employee status table, for holding a list of employment status, such as actively working or on vacation
- A job table, for holding a list of job titles
- A department table, for holding a list of departments

Next, let's plan out some possible columns for these tables, and identify the primary keys.

Table Name	Employees		Table Name	job
employee_num	PK		job_id	PK
first_name	VARCHAR		title	VARCHAR
last_name	VARCHAR			
birth_date	DATE			
hire_date	DATE			
Table Name	Employee Status		Table Name	department
status_id	PK		department_id	PK
description	VARCHAR		name	VARCHAR

Finally, let's identify any foreign key relations. We want to connect the employees to their job titles, status, and department, so our foreign keys might all look like this.

Table Name	Employees		Table Name	job
employee_num	PK		job_id	PK
first_name	VARCHAR		title	VARCHAR
last_name	VARCHAR			
birth_date	DATE			
hire_date	DATE		Table Name	Employee Status
status_id	FK	→	status_id	PK
job_id	FK	→	description	VARCHAR
department_id	FK	→		
			Table Name	department
			department_id	PK
			name	VARCHAR

This is a pretty good start for our design and should be flexible enough.

Create the Tables (DDL)

In SSMS, create the tables we identified using CREATE TABLE and ALTER TABLE commands. Here's the first table to help get you started.

```
USE LAB10
CREATE TABLE employees(
    employee_num    INT          PRIMARY KEY IDENTITY,
    first_name      VARCHAR(30)  NOT NULL,
    lastname        VARCHAR(30)  NOT NULL,
    birth_date      DATETIME     NOT NULL,
    hire_date       DATETIME     NOT NULL,
    status_id       INT          NOT NULL,
    job_id          INT          NOT NULL,
    department_ID   INT          NOT NULL
)
```

Populate some Sample Data

Use INSERT statements to populate the sample data provided below into the tables.

Employee_Status table
Active
No longer Employeed
Leave of Absence

job table
CEO
Office Worker
Receptionist
Web Admin
Accountant

department table
Accounting/Finance
Sales
Technical
Administration

employees table						
first_name	last_name	bith_date	hire_date	status_id	job_id	
Bob	Jones	1974-06-04 0:00:00	1999-03-15 0:00:00	1	1	4
Sarah	Robinson	1983-08-03 0:00:00	2011-07-05 0:00:00	1	2	2
Matthew	Little	1985-04-16 0:00:00	2017-02-12 0:00:00	1	3	2
Erik	Tanner	1967-03-12 0:00:00	2018-07-18 0:00:00	1	4	3
Samuel	Davis	1988-05-25 0:00:00	2015-03-28 0:00:00	1	2	4

Create a View to review the data.

Create a view called **employee_details** that displays table information shown below:

employee_num	first_name	lastname	birth_date	hire_date	description	title	name
1	Bob	Jones	1974-06-04 00:00:00.000	1999-03-15 00:00:00.000	Active	CEO	Administration
2	Sarah	Robinson	1983-08-03 00:00:00.000	2011-07-05 00:00:00.000	Active	Office Worker	Sales
3	Matthew	Little	1985-04-16 00:00:00.000	2017-02-12 00:00:00.000	Active	Receptionist	Sales
4	Erik	Tanner	1967-03-12 00:00:00.000	2018-07-18 00:00:00.000	Active	Web Admin	Technical
5	Samuel	Davis	1988-05-25 00:00:00.000	2015-03-28 00:00:00.000	Active	Office Worker	Administration