Project 1

50 points

Requirements

You will be creating a database for a theme park. You must create a SQL Script to perform all the following functions:

Step 1: Create the tables

Table # 1 Name: Employee

Columns and Data Types:

- empNumber (char(8)), firstName (varchar(25)), lastName varchar(25)), ssn (char(9)), address (varchar(50)), state (char(2)), zip (char(5)), jobCode (char(4)) , dateOfBirth (date), certification(bit), salary(money))

Table # 2 Name: Job:

Columns and Data Types:

- jobCode (char(4), jobdesc(varchar(50))

Next You will write the script to create constraints on these two tables. The following constraints must be created:

- A Primary Key named PK_EmpNumber on the empNumber column in the Employee table.
- A Primary Key named PK_JobCode on the jobCode column in the Job table.
- A Foreign Key constraint named FK_JOB on the Employee table's jobCode column which upholds referential integrity to the Job table's primary key.
- A Legal Value constraint on the Employee table named EMP_STATECHECK on the state column which can only be in either NY or PA.
- A Legal Value constraint on the Job table named JOB_JOBCODE on the job column which only have one of the values 'SOFT', 'QAEN', 'INSP' or 'PRMG'

Step 2: Insert the data

Write the Insert statements to populate 3 sample employees. Make up any sample data for your employees. Make sure your data doesn't violate any constraints.

Write the Insert statements to populate the following available jobs codes and job descriptions:

SOFT	Software Engineer
QAEN	Quality Engineer
INSP	Inspector
PRMG	Project Manager

Step 3: Create Views

Write the statements to create the following views:

- **vw_CertifiedDevelopers**: This View will show the empNumber, firstName, lastName and jobDesc of the employees who are software engineers and have a certification value of 1.
    - **Column Names:** empNumber, firstName, lastName, jobDesc

- **vw_RetireEmp:** This View will show the empNumber, firstName and lastName of those employees who are over 65 (Hint: use the birthdate year to calculate their age based on the current date year)
    - **Column Names:** empNumber, firstName, lastName
- **vw_EmpAvgSalary:** This view will show the average salary and the employee jobcode grouped per the different job codes.
    - **Column Names:** AvgSalary, jobCode

Step 4: Add indexes

Create the SQL Scripts for indexes on the following columns:

Index name: IDX_LastName Table: Employee Column: lastName

Index name: IDX_ssn Table: Employee Column: ssn

Step 5: Verify Objects

Verify Object names

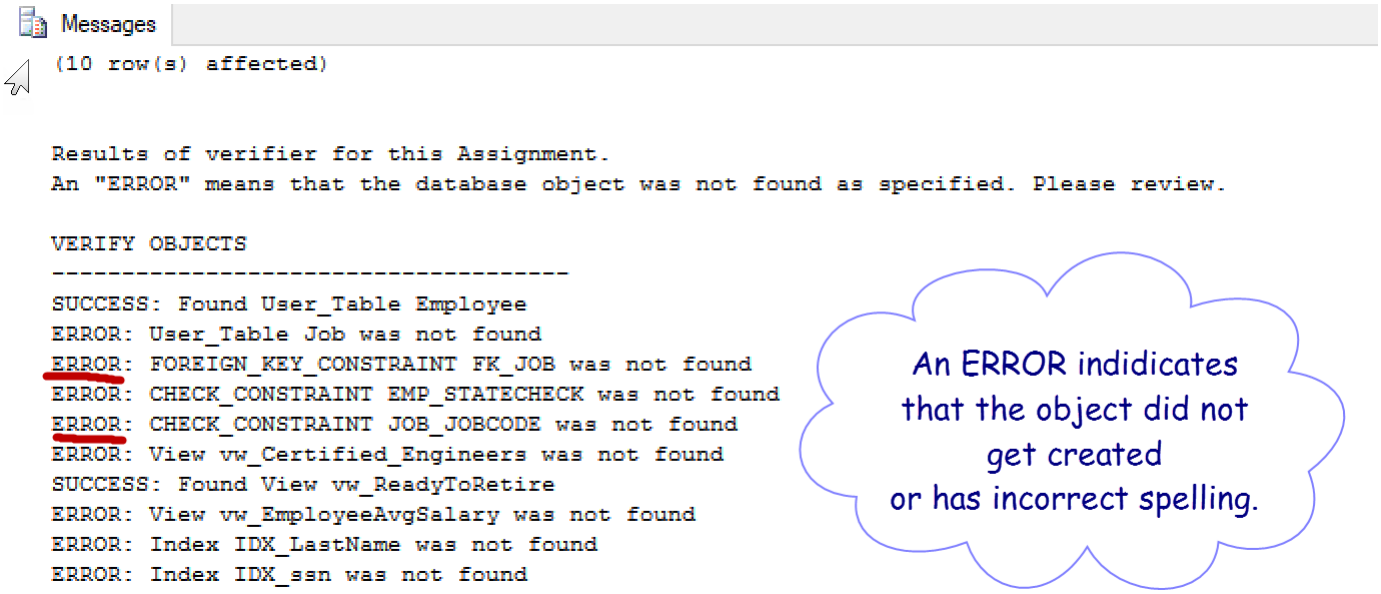
Once you have completed your work and created the required objects in your database, you will need to run the Project1Verifier to assure that:

- Your objects have been properly created

- Object naming is correct.

Run the Project1Verifier.sql script on the database where you created your objects. If any errors appear, you need to review them before proceeding.

EXAMPLE:



If your script fails to be created or properly spelled, you will not receive credit.

How you will turn in your project

PLEASE READ!!!!!

You will turn in 1 SQL Script file, which will have the filename format: First Four letters of last name + underscore + First Name Initial + PantherId + PROJ1.

So if your name is John Smith, ID 166723 your filename will be

Smit_J166723_PROJ1.sql

(If your last name is less than 4 characters then just use those characters)

Header and Database:

You will have a header on the file and create all the SQL objects under your own database. YOU DO NOT NEED TO INCLUDE THE CREATION OF THE DATABASE IN THE SCRIPT, just the "USE" statement below.

```
/*     Name: FirstName Last Name
       Project #
       PantherId: ######
       Semester:
*/

--All your project will create the objects under your own personal database that you will create.

--Your personal database should have the following name format:
--First Four letters of last name + underscore + First Name Initial + PantherId
Use Smit_J166723
GO

Then you will need to have an insert statement to an assignment table that I will use for grading by
populating this script with your pantherId, firstname, lastname, databasename (see above) and
assignment (1, 2 or 3)

/***This must be created for every assignment and must be done at the beginning) ****/
insert into master.dbo.assignments
(pantherId, firstname, lastname, databasename, assignment)
values
('7777777', 'John', 'Smith','Smit_J7777777',1)
GO
/*****************************************************************************/

--Rest of Project Scripts HERE
```

NOTE: Remember that you will have to use the GO statement to separate each SQL Statement

I will execute <u>your entire script at once</u> (not just highlight each statement at a time) on an empty database.

Please make sure there are NO ERRORS and everything runs smoothly on an empty database.

Grading Criteria

- Completed Table Employee and Job structure (5 points)
- Complete PK Keys PK_EmpNumber and PK_JobCode (5 points)
- Complete Legal Value Constraints (5 points)
- Complete Foreign Keys (5 points)
- Data Inserts for tables (5 points)
- Vw_CertifiedDevelopers view (5 points)
- Vw_EmpAvgSalary (5 points)
- Vw_RetireEmp view (5 points)
- Index IDX_LastName (5 points)
- Index IDX_SSN (5 points)

Completed Table Employee and Job structure (5 points)

I will be looking for a table named “Employee” with the correct columns and a table name “Job” with the correct columns

Complete PK Keys (5 points)

I will be looking for a Primary Key constraint on both the Employee and Job tables. Each one should be named “PK_EmpNumber” and “PK_JobCode” and point the correct columns

Complete Legal Value Constraints (5 points)

I will be looking legal value (check) constraints named “job_jobcode” and “emp_statecheck” respectively. I will attempt to insert values that are NOT specified in the constraints and the database should not let me.

Complete Foreign Keys (5 points)

I will be looking for a Foreign Key placed on the Employee table’s jobcode column named “FK_Job” that points to the Job table’s JobCode column.

Data Inserts for tables (5 points)

I will be looking for both the Employee table and the Job table to be populated with records.

Vw_CertifiedDevelopers view (5 points)

I will be inserting a population of employees that have a job code of “SOFT” and have a certification value 1, and those should be returned when selecting from this view.

Vw_EmpAvgSalary (5 points)

I will be inserting a population of employees and checking their average salary is correct.

Vw_RetireEmp view (5 points)

I will be inserting a population of employees that have birthdates which when compared to today would make them over 65 and those should be returned when selecting from this view.

Index IDX_LastName (5 points)

I will be looking for an index named “IDX_LastName” to be created on the Employee table and lastname column.

Index IDX_SSN (5 points)

I will be looking for an index named “IDX_SSN” to be created on the Employee table and SSN column.