Assignment #4: SQL Statements

Description:

The goal is develop a database for the Wedgewood Pacific Corporation using MS SQL Server.

1. In MS SQL Server, create a new database called WPC.

2. Create the DEPARTMENT and EMPLOYEE tables shown below along with the PROJECT and ASSIGNMENT tables shown on the next page, and set the relationships between the tables explained below:

DEPARTMENT

Column Name	Type	Key	Required	Remarks
DepartmentName	nvarchar(35)	Primary Key	Yes	
BudgetCode	nvarchar(30)	No	Yes	
OfficeNumber	nvarchar(15)	No	Yes	
Phone	nvarchar(12)	No	Yes	

EMPLOYEE

Column Name	Type	Key	Required	Remarks
EmployeeNumber	bigint : Identity	Primary Key	Yes	Surrogate Key
FirstName	nvarchar(25)	No	Yes	
LastName	nvarchar(25)	No	Yes	
Department	nvarchar(35)	Foreign Key	Yes	
Phone	nvarchar(12)	No	No	
Email	nvarchar(100)	No	Yes	

A. To set a column to be a Primary Key, right-click on the column name (while in the design mode) and select Set Primary Key.

B. To set a column as a Foreign Key, right-click on the column name (while in the design mode) and select Relationship. Click the Add button and then click on "Tables and Columns Specification" and then click on the button next to it (with three dots) and complete the relationship by selecting the Primary Key table and under that pick its column name, and match that with the Foreign Key column name in the current table.

C. The Department column in the EMPLOYEE and PROJECT tables are both a Foreign Key of the DepartmentName column from the DEPARTMENT table. ProjectID in the ASSIGNMENT table is a Foreign Key of ProjectID in the PROJECT table, and EmployeeNumber in the ASSIGNMENT table is a Foreign Key of EmployeeNumber in the EMPLOYEE table. Notice that ProjectID and EmployeeNumber are also Primary Keys in the ASSIGNMENT table.

D. The EmployeeNumber column in the EMPLOYEE table is an Identity column, which means its value will be automatically assigned (AutoNumber). To set it as an Identity column, click on the column name, then go into the properties window below it and scroll to "Identity Specification" and open that property line and click on "(Is Identity)" and then click on the down arrow on the right side and select "Yes".

3. Now create the PROJECT and ASSIGNMENT tables as shown here. Note the Foreign Key relationships in these tables and set them up as explained above.

PROJECT

Column Name	Type	Key	Required	Remarks
ProjectID	bigint	Primary Key	Yes	Long Integer
Name	nvarchar(50)	No	Yes	
Department	nvarchar(35)	Foreign Key	Yes	
MaxHours	float	No	Yes	Double
StartDate	datetime	No	No	
EndDate	datetime	No	No	

ASSIGNMENT

Column Name	Type	Key	Required	Remarks
ProjectID	bigint	Primary Key, Foreign Key	Yes	Long Integer
EmployeeNumber	bigint	Primary Key, Foreign Key	Yes	Long Integer
HoursWorked	float	No	No	Double

4. Populate the DEPARTMENT and EMPLOYEE tables with the same exact data provided here:

DEPARTMENT Data

DepartmentName	BudgetCode	OfficeNumber	Phone
Administration	BC-100-10	BLDG01-300	360-285-8100
Legal	BC-200-10	BLDG01-200	360-285-8200
Accounting	BC-300-10	BLDG01-100	360-285-8300
Finance	BC-400-10	BLDG01-140	360-285-8400
Human Resources	BC-500-10	BLDG01-180	360-285-8500
Production	BC-600-10	BLDG02-100	360-287-8600
Marketing	BC-700-10	BLDG02-200	360-287-8700
InfoSystems	BC-800-10	BLDG02-270	360-287-8800

EMPLOYEE Data

EmployeeNumber	FirstName	LastName	Department	Phone	Email
[AutoNumber]	Mary	Jacobs	Administration	360-285-8110	MJacobs@WPC.com
[AutoNumber]	Rosalie	Jackson	Administration	360-285-8120	RJackson@WPC.com
[AutoNumber]	Richard	Bandalone	Legal	360-285-8210	RBandalone@WPC.com
[AutoNumber]	Tom	Caruthers	Accounting	360-285-8310	TCaruthers@WPC.com
[AutoNumber]	Heather	Jones	Accounting	360-285-8320	HJones@WPC.com
[AutoNumber]	Mary	Abernathy	Finance	360-285-8410	MAbernathy@WPC.com
[AutoNumber]	George	Smith	Human Resources	360-285-8510	GSmith@WPC.com
[AutoNumber]	Tom	Jackson	Production	360-287-8610	TJackson@WPC.com
[AutoNumber]	George	Jones	Production	360-287-8620	GJones@WPC.com
[AutoNumber]	Ken	Numoto	Marketing	360-287-8710	KNumoto@WPC.com
[AutoNumber]	James	Nestor	InfoSystems		JNestor@WPC.com
[AutoNumber]	Rick	Brown	InfoSystems	360-287-8820	RBrown@WPC.com

5. Populate the PROJECT and ASSIGNMENT tables with the following data:

PROJECT Data

ProjectID	Name	Department	MaxHours	StartDate	EndDate
1000	2008 Q3 Product Plan	Marketing	135	05/10/08	06/15/08
1100	2008 Q3 Portfolio Analysis	Finance	120	07/05/08	07/25/08
1200	2008 Q3 Tax Preparation	Accounting	145	08/10/08	10/25/08
1300	2008 Q4 Product Plan	Marketing	150	08/10/08	09/15/08
1400	2008 Q4 Portfolio Analysis	Finance	140	10/05/08	

ASSIGNMENT Data

ProjectID	EmployeeNumber	HoursWorked
1000	1	30.0
1000	8	75.0
1000	10	55.0
1100	4	40.0
1100	6	45.0
1100	1	25.0
1200	2	20.0
1200	4	45.0
1200	5	40.0
1300	1	35.0
1300	8	80.0
1300	10	50.0
1400	4	15.0
1400	5	10.0
1400	6	27.5

6. Develop SQL queries (in one script) to answer the following questions A through L:

   A. *What projects are in the PROJECT table? Show all information for each project.*

   B. *What are the ProjectID, Name, StartDate, and EndDate values of projects in the PROJECT table?*

   C. *What projects in the PROJECT table started before August 1, 2008? Show all the information for each project.*

   D. *What projects in the PROJECT table have not been completed? Show all the information for each project.*

   E. *Who are the employees assigned to each project? Show ProjectID, Employee-Number, LastName, FirstName, and Phone.*

   F. *Who are the employees assigned to each project? Show the ProjectID, Name, and Department. Show EmployeeNumber, LastName, FirstName, and Phone.*

G. *Who are the employees assigned to each project? Show ProjectID, Name, Department, and Department Phone. Show EmployeeNumber, LastName, FirstName, and Employee Phone. Sort by ProjectID in ascending order.*

H. *Who are the employees assigned to projects run by the marketing department? Show ProjectID, Name, Department, and Department Phone. Show EmployeeNumber, LastName, FirstName, and Employee Phone. Sort by ProjectID in ascending order.*

I. *How many projects are being run by the marketing department? Be sure to assign an appropriate column name to the computed results.*

J. *What is the total MaxHours of projects being run by the marketing department? Be sure to assign an appropriate column name to the computed results.*

K. *What is the average MaxHours of projects being run by the marketing department? Be sure to assign an appropriate column name to the computed results.*

L. *How many projects are being run by each department? Be sure to display each DepartmentName and to assign an appropriate column name to the computed results.*

Note: Place a comment block at the top of your script file:

```
/***************************/
/* Name:                */
/* Class:    CS3410        */
/* Term:     Fall 2020     */
/* Assgn #:  4             */
/***************************/
```

And before each answer, add a comment line with the question number such as:

```
/* A */
```

Save the list of answers (A-L) in your script to a .sql file, call it "A4-<Your-last-name>.sql". For example, John Smith's script file would be named "A4-Smith.sql". Submit .sql file in dropbox area of D2L labled Assignment 4 Submission.