CS2443 – SQL Server
Assignment 7

Total Points: 100

Write the code for each of the following and submit a textfile with the scripts in the DropBox for the assignment in Moodle.
Questions 1-5 are each worth 8 points and Questions 6 - 11 are each worth 10 points.

COMPANY database

The Company databse stores data about its employees, their departments and assignments and projects in the following tables.

Employee
empSSN
empLName
empFName
empGender
empAddress
empDOB
empSalary
empDeptNum
empSuperSSN

Assignment
workempSSN
workProjNumber
workHours
workHoursplanned

Project
projNumber
projName
projLocation
projdeptNum

Department
deptnum deptName
deptMgrSSN
deptMgr_startdate

Dept_Location
Deptnum
deptlocation

The Company is organized in separate departments. Each department has a unique deptnum and has a department name. Each department has a manager and the date on which the manager started managing the department. The manager's social security number is stored in the department table and it provides a foreign key link to the specific employee that manages a department.
Each department may have multiple city locations within the company. The primary key of the dept_location table is the composite of deptnum and the deptlocation. The deptnum also serves as a foreign key link back to the departments table.
The Employee table stores employee information. Each employee is identified by empSSN. Each employee works in a department. Some employees also mange departments. A department can have 0, 1 or more assigned employees. Through the empDeptNum we have a foreign key relationship with the Department table. Each

department has 1 manager and so an employee may have a manager . Some employees maybe manager themselves.
The Project table contains details about each project that the company has. Projects for the company are controlled by departments. Each project has a project number (projNumber) and they are kept track of by project name (projName) and by location. A department may have 0, 1 or more projects, and a project belongs to 1 and only one department.
The Assignment table keeps track of project assignments. Each employee is assigned to work on 0, 1 or more projects. It associates the employee and project tables. The primary key is a composite of the primary key from the employee table combined with the primary key from the project table.

Using the Company database, write SQL scripts for the following cases:

1. The Department table stores information about departments within the company. The deptMgr_startdate column stores the start date on which an employee started working as a department manager.Write a query to display the date for the manager that has worked the longest as a department manager. Label the output column as Longest Working Manager.
2. Accountants working on the company's annual budgeting process needs to know the average salary for employees and the sum of all employee salaries. All information is in the Employee table.
3. The company's VP for Project Management needs to know the number of projects each department is working on based on the information stored in the Project table.
4. The Company's VP for Project Management wants a list of projects located in Oklahoma or supervised by the 'Production' department.
5. The Assignment table stores data about the hours that employees are working on specific projects. A senior project manager desires a list of employees(last and first names) who are currently working on project numbers 10, 20 or 30.Use a subquery approach.
6. Management is concerned about work productivity. Write a query that produces a listing of each employee who has not worked on a sinlge project till date. The employees name (first and last names) and their department names are to be displayed.
7. The company's senior project manager needs to access information about departments that manage projects for a specific set of projects, namely those located in Oklahoma or Texas. Create a view named department_projects that includes the department number, department name , project name and location. Write a Select statement that displays all rows that are accessible through the view.
8. Demonstrate the use of the view named department_projects(created above) for the senior manager by writing a Select statement to query the view to display all row information for projects belonging to department 3.
9. Create a table named sales_order. The table should have an identity column named so_number. There are 2 other columns – the sales order value(so_value) and the SSN for the employee who enters the sales order information (so_empSSN). Using INSERT statements insert 3 rows into the sales_order table. Write a SELECT statement that displays all the information in the sales_order table.

10 A. Write a stored procedure named replace_work_hours that updates the workHours column in the Assignment table. The procedure accepts 3 parameters corresponding to 3 columns in the table:workempSSN, workProjNumber and workHours. For a given employee SSN and project number, the work hours passed as a parameter to the procedure can replace the workHours currently stored in the table.

10 B. You have been notified by the manager of Project 20 to update the hours worked for an employee on the project. Execute the procedure replace_work_hours to store a new workHours column value of 15.5 for employee 999-55-5555 for project 20 and then display the new values in a result table.

11. Write an AFTER trigger named check_work_hours that fires whenever an UPDATE transaction executes that updates the value stored to the workHours column of the Assignment table. The trigger should check the new value to be assigned for the hours worked to enforce a business rule that an employee cannot report working in excess of 250 hours on a project. If the new value to be inserted exceeds 250 hours, then the UPDATE transaction should roll back. Display an appropriate error message.

There is no physical database called Company on SQL server, you will just go ahead and write the scripts without using Management Studio.