Homework: Transact-SQL

This document defines the homework assignments from the "Databases" Course @ Software University. Please submit as homework a single **`zip`** / **`rar`** / **`7z`** archive holding the solutions (source code) of all below described problems.

Problem 1. Create a database with two tables

Persons (id (PK), first name, last name, SSN) and Accounts (id (PK), person id (FK), balance). Insert few records for testing.

Write a stored procedure that selects the full names of all persons.

Full name
Susan
Kim
Jimmy

Problem 2. Create a stored procedure

Your task is to create a stored procedure that accepts a number as a parameter and returns all persons who have more money in their accounts than the supplied number.

Problem 3. Create a function with parameters

Your task is to create a function that accepts as parameters – sum, yearly interest rate and number of months. It should calculate and return the new sum. Write a SELECT to test whether the function works as expected.

Problem 4. Create a stored procedure that uses the function from the previous example.

Your task is to create a stored procedure that uses the function from the previous example to give an interest to a person's account for one month. It should take the **AccountId** and the interest rate as parameters.

Problem 5. Add two more stored procedures WithdrawMoney and DepositMoney.

Add two more stored procedures **WithdrawMoney** (AccountId, money) and **DepositMoney** (AccountId, money) that operate in transactions.

Problem 6. Create table Logs.

Create another table – Logs (LogID, AccountID, OldSum, NewSum). Add a trigger to the Accounts table that enters a new entry into the Logs table every time the sum on an account changes.

Problem 7. Define function in the SoftUni database.

Define a function in the database **SoftUni** that returns all Employee's names (first or middle or last name) and all town's names that are comprised of given set of letters.

Example: **'oistmiahf'** will return **'Sofia'**, **'Smith'**, but not **'Rob'** and **'Guy'**.

Problem 8. Using database cursor write a T-SQL

Using database cursor write a T-SQL script that scans all employees and their addresses and prints all pairs of employees that live in the same town.

```
Wood: John Wood Redmond John
Hill: John Wood Redmond Annette
Feng: John Wood Redmond Hanying
Sousa: John Wood Redmond Anibal
Glimp: John Wood Redmond Diane
Pournasseh: John Wood Redmond Houman
Kane: John Wood Redmond Lori
…
```

Problem 9. Define a .NET aggregate function

Define a .NET aggregate function **StrConcat** that takes as input a sequence of strings and return a single string that consists of the input strings separated by ','. For example the following SQL statement should return a single string:

```
SELECT StrConcat (FirstName + ' ' + LastName)
FROM Employees
```

Problem 10. *Write a T-SQL script

Write a T-SQL script that shows for each town a list of all employees that live in it. Sample output:

```
Sofia -> Svetlin Nakov, Martin Kulov, Vladimir Georgiev
Ottawa -> Jose Saraiva,
…
```