Programming Applications with Databases

Exercise Set 3

1. There is data in a table (pick some table from AdventureWorksLT with significant amount of data) and this data should be copied to another table with the name {*tablename*}_Backup. Show the difference in time execution between standard SQL query and cursors by creating 2 appropriate examples and running appropriate tests.
[**2p**]

2. Explain the difference between 3 main types of cursors: static, dynamic, keyset. Execute the presented during lecture example *03-rodzaje-kursorow.sql* and explain the results.
[**2p**]

3. Consider the following tables: *Products(ID, ProductName)*, *Prices(ProductID REF Products(ID), Currency REF Rates(Currency), Price)*, *Rates(Currency, PricePLN)*. Note that a product price may not be declared in all known currencies, but it always is declared in PLN as a reference. Prepare a batch script to update the *Prices* table based on *Rates* table. In case there is a row in *Prices* which references a currency that no longer exists in *Rates*, the row should be removed.

   This task should be implemented using cursors.
   [**3p**]

4. Create tables *Employees(ID, SalaryGros)* and *SalaryHistory(ID, EmployeeID, Year, Month, SalaryNet, SalaryGros)*. Implement a procedure that for a month number (given as a parameter) computes the salary to be paid out, based on:

   - the current salary (*Employees.SalaryGros*),
   - all previous salaries this year to determine tax deductions,
   - the following tax thresholds need to be considerd: 17% for persons whose income does not exceed 120000 PLN/year and 15300 + 32% applied to the income above 120000 for other persons (i.e., whose income is above the threshold).

   Please take into account that an employee may be employed in any month during the year. Create also a table for logging the situations in which the salary could not be determined, e.g. because of a missing salary in one of the previous months (note that this doesn't contradict with the situation where employment starts not from January).

   This task should be implemented using cursors.

   Remark: possibly consider a slight modification to the schema of SalaryHistory table.
   [**3p**]

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