

Database creation

Modul 2

Agenda

- Create Data Base
- Tables
- Data types
- Modification of table structure
- Constraints



Database design

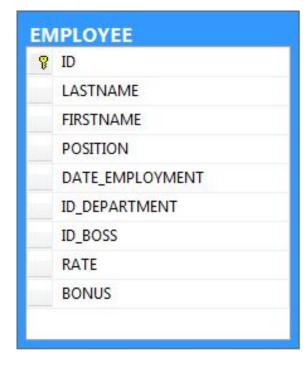
Database REQUIREMENTS

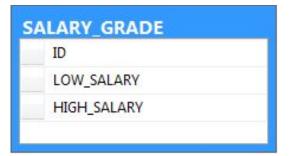
- 1. The company is divided into departments that have names and are located in different cities.
- 2. For each company employee there must be given first and last name, date of employment, position, monthly rate.
- 3. Each employee belongs to only one department.
- 4. Each employee has only one boss. The president of the company does not have a boss.
- 5. If the employee works as a salesman, he receives an additional compensation at the end of year.
- 6. Each employee belongs to a group depending on his salary.
- For each group, the lower and upper limit of salary is determined.



Design DB









Data types

Basic data types in MS SQL Server are:

- INT integer numbers;
- NUMERIC(m,n) fixed point real numbers;
- FLOAT floating point real numbers;
- CHAR(n) character string constant of length n characters;
- VARCHAR(n) character string of variable length, maximum length n characters;
- DATETIME, DATE, TIME date and time etc.

NULL – for all types



DDL and DML

- DDL Data Definition Language
 - CREATE
 - ALTER
 - DROP
- DML Data Manipulation Language
 - INSERT
 - SELECT
 - UPDATE
 - DELETE



Create table

```
Create a table using the query
CREATE TABLE 
  <field name 1> <type field 1>,
  <field name 2> <type field 2>, ...
For example,
CREATE TABLE DEPARTMENT (ID INT NOT NULL,
      NAME VARCHAR(30),
      CITY VARCHAR(30))
```



Modify table structure

For modifying the existing structure of DB tables, we use are

ALTER TABLE and **DROP TABLE** commands

For modifying the structure of the table, we can do one from the following:

- ADD [COLUMN] add a new field
- · ALTER [COLUMN] modify the field
- DROP [COLUMN] delete the field
- . ADD CONSTRAINT add a new constraint
- DROP CONSTRAINT delete the constraint





Simple integrity constraint types

Integrity constraint can be divided into the following types:

- PRIMARY KEY
- UNIQUE
- NULL/NOT NULL
- FOREIGN KEY/REFERENCE
- CHECK



Thank you!

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