# Лабораторная работа №2

## Составление SQL-запросов

### Задание к работе

1. По построенной структуре базы данных (из прошлой лабораторной работы) составить SQL-запросы для создания базы данных в Microsoft SQL Server.
2. Выполнить запросы, проверить созданные таблицы на соответствие созданной ранее структуре.
3. Заполнить созданную базу данных тестовыми данными.

## SQL-запросы

|  |  |
| --- | --- |
| 01 | CREATE TABLE [Section] ( |
| 02 | [ID] **tinyint** NOT NULL IDENTITY (1, 1) **PRIMARY KEY**, |
| 03 | [Title] **nvarchar**(50) NOT NULL **CHECK** ([Title] <> ''), |
| 04 | [Location] **nvarchar**(100) NOT NULL **CHECK** ([Location] <> '') |
| 05 | ) |
| 06 | GO |
| 07 |  |
| 08 | CREATE TABLE [Reader] ( |
| 09 | [ID] **int** NOT NULL IDENTITY (1, 1) **PRIMARY KEY**, |
| 10 | [FirstName] **nvarchar**(50) NOT NULL **CHECK** ([FirstName] <> ''), |
| 11 | [MiddleName] **nvarchar**(100), |
| 12 | [LastName] **nvarchar**(50) NOT NULL **CHECK** ([LastName] <> ''), |
| 13 | [Birth] **datetime**, |
| 14 | [Phone] **bigint** NOT NULL **CHECK** ([Phone] > 0), |
| 15 | [Passport] **int**, |
| 16 | [Group] **nchar**(5) NOT NULL **CHECK** ([Group] <> '') |
| 17 | ) |
| 18 | GO |
| 19 |  |
| 20 | CREATE TABLE [SectionReader] ( |
| 21 | [ReaderID] **int** NOT NULL **REFERENCES** [Reader] |
| 22 | **ON DELETE** CASCADE |
| 23 | **ON UPDATE** CASCADE, |
| 24 | [SectionID] **tinyint** NOT NULL **REFERENCES** [Section] |
| 25 | **ON DELETE** CASCADE |
| 26 | **ON UPDATE** CASCADE, |
| 27 | **PRIMARY KEY** ([SectionID], [ReaderID]) |
| 28 | ) |
| 29 | GO |
| 30 |  |
| 31 | CREATE TABLE [Subject] ( |
| 32 | [ID] **smallint** NOT NULL IDENTITY (1, 1) **PRIMARY KEY**, |
| 33 | [Title] **nvarchar**(50) NOT NULL **CHECK** ([Title] <> ''), |
| 34 | [SectionID] **tinyint** **REFERENCES** [Section] |
| 35 | **ON DELETE** SET NULL |
| 36 | **ON UPDATE** CASCADE |
| 37 | ) |
| 38 | GO |
| 39 |  |
| 40 | CREATE TABLE [Book] ( |
| 41 | [ID] **int** NOT NULL IDENTITY (1, 1) **PRIMARY KEY**, |
| 42 | [Title] **nvarchar**(200) NOT NULL **CHECK** ([Title] <> ''), |
| 43 | [Publisher] **nvarchar**(50) NOT NULL **CHECK** ([Publisher] <> ''), |
| 44 | [Year] **smallint** NOT NULL, |
| 45 | [Amount] **tinyint** NOT NULL, |
| 46 | [Pages] **smallint** NOT NULL **CHECK** ([Pages] > 0), |
| 47 | [ISBN] **bigint** NOT NULL **CHECK** ([ISBN] > 0), |
| 48 | [Language] **nchar**(5) NOT NULL **CHECK** ([Language] <> ''), |
| 49 | [Popularity] **smallint** NOT NULL **CHECK** ([Popularity] >= 0), |
| 50 | [SubjectID] **smallint** **REFERENCES** [Subject] |
| 51 | **ON DELETE** SET NULL |
| 52 | **ON UPDATE** CASCADE |
| 53 | ) |
| 54 | GO |
| 55 |  |
| 56 | CREATE TABLE [Author] ( |
| 57 | [ID] **int** NOT NULL IDENTITY (1, 1) **PRIMARY KEY**, |
| 58 | [FirstName] **nvarchar**(50) NOT NULL **CHECK** ([FirstName] <> ''), |
| 59 | [MiddleName] **nvarchar**(100), |
| 60 | [LastName] **nvarchar**(50) NOT NULL **CHECK** ([LastName] <> ''), |
| 61 | [Birth] **datetime** |
| 62 | ) |
| 63 | GO |
| 64 |  |
| 65 | CREATE TABLE [AuthorBook] ( |
| 66 | [AuthorID] **int** NOT NULL **REFERENCES** [Author] |
| 67 | **ON DELETE** CASCADE |
| 68 | **ON UPDATE** CASCADE, |
| 69 | [BookID] **int** NOT NULL **REFERENCES** [Book] |
| 70 | **ON DELETE** CASCADE |
| 71 | **ON UPDATE** CASCADE, |
| 72 | **PRIMARY KEY** ([AuthorID], [BookID]) |
| 73 | ) |
| 74 | GO |
| 75 |  |
| 76 | CREATE TABLE [Instance] ( |
| 77 | [ID] **int** NOT NULL IDENTITY (1, 1) **PRIMARY KEY**, |
| 78 | [ReaderID] **int** **REFERENCES** [Reader] |
| 79 | **ON DELETE** SET NULL |
| 80 | **ON UPDATE** CASCADE, |
| 81 | [BookID] **int** NOT NULL **REFERENCES** [Book] |
| 82 | **ON DELETE** CASCADE |
| 83 | **ON UPDATE** CASCADE, |
| 84 | [Issue] **datetime**, |
| 85 | [Return] **datetime**, |
| 86 | [Available] **bit** NOT NULL, |
| 87 | ) |
| 88 | GO |