Учреждение образования
«БЕЛОРУССКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ
ИНФОРМАТИКИ И РАДИОЭЛЕКТРОНИКИ»
Кафедра информатики

Отчет по лабораторной работе №3

"Проектирование схемы базы данных в sql"

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Цель работы

Получить практические навыки построения баз данных.

Задание

Построение базы данных .

Практическая часть

```sql
CREATE TABLE FACULTY
(
    ID UNIQUEIDENTIFIER NOT NULL PRIMARY KEY,
    NAME VARCHAR(30) NOT NULL UNIQUE,
)
GO

CREATE TABLE GROUPS
(
    ID UNIQUEIDENTIFIER  NOT NULL PRIMARY KEY,
    NAME VARCHAR(10) NOT NULL,
    HEAD_GROUP UNIQUEIDENTIFIER,
    FACULTY_ID UNIQUEIDENTIFIER NOT NULL,
)
GO

CREATE TABLE LESSONS
(
    GROUP_ID UNIQUEIDENTIFIER NOT NULL,
    PREPOD_ID UNIQUEIDENTIFIER NOT NULL,
    STUDY_ID CHAR(20) NOT NULL,
    PRIMARY KEY(GROUP_ID, PREPOD_ID, STUDY_ID)
)
GO

CREATE TABLE PREPODS
(
    ID UNIQUEIDENTIFIER NOT NULL PRIMARY KEY,
    LAST_NAME VARCHAR(120) NOT NULL,
    FIRST_NAME VARCHAR(120),
    FACULTY_ID UNIQUEIDENTIFIER NOT NULL
)
GO

CREATE TABLE RAITING
(
    ID UNIQUEIDENTIFIER NOT NULL PRIMARY KEY,
    DATE DATE NOT NULL,
    VAL NUMERIC,
    STUDENT_ID UNIQUEIDENTIFIER NOT NULL,
    STUDY_ID CHAR(20) NOT NULL,
    PREPODS_ID UNIQUEIDENTIFIER NOT NULL,
    IS_ABSENT VARCHAR(3) DEFAULT 'YES',
    CONSTRAINT chkValue CHECK (VAL>3 AND VAL<=10)
)
GO
```

```sql
CREATE TABLE STUDENTS
(
    ID UNIQUEIDENTIFIER NOT NULL PRIMARY KEY,
    LAST_NAME VARCHAR(60) NOT NULL,
    FIRST_NAME VARCHAR(30),
    GROUP_ID UNIQUEIDENTIFIER,
)
GO

CREATE TABLE STUDY_LOAD
(
    ID CHAR(20) NOT NULL PRIMARY KEY,
    hours NUMERIC,
    SUBJECT_ID UNIQUEIDENTIFIER NOT NULL,
    Type_STYDY_ID UNIQUEIDENTIFIER NOT NULL,
    CONSTRAINT chkStudyLoad CHECK (hours>=0)
)
GO

CREATE TABLE SUBJECTS
(
    ID UNIQUEIDENTIFIER NOT NULL PRIMARY KEY,
    NAME VARCHAR(120) NOT NULL,
    FACULTY_ID UNIQUEIDENTIFIER,
)
GO

CREATE TABLE TYPE_STUDY_LOAD
(
    ID UNIQUEIDENTIFIER NOT NULL PRIMARY KEY,
    NAME VARCHAR(120) NOT NULL UNIQUE,
)
GO

ALTER TABLE GROUPS
    ADD FOREIGN KEY (HEAD_GROUP) REFERENCES STUDENTS
ALTER TABLE GROUPS
    ADD FOREIGN KEY (FACULTY_ID) REFERENCES FACULTY
GO

ALTER TABLE LESSONS
    ADD FOREIGN KEY (GROUP_ID) REFERENCES GROUPS
ALTER TABLE LESSONS
    ADD FOREIGN KEY (PREPOD_ID) REFERENCES PREPODS
ALTER TABLE LESSONS
    ADD FOREIGN KEY (STUDY_ID) REFERENCES STUDY_LOAD
GO

ALTER TABLE PREPODS
    ADD FOREIGN KEY (FACULTY_ID) REFERENCES FACULTY
GO

ALTER TABLE RAITING
    ADD FOREIGN KEY (STUDENT_ID) REFERENCES STUDENTS
ALTER TABLE RAITING
    ADD FOREIGN KEY (STUDY_ID) REFERENCES STUDY_LOAD
ALTER TABLE RAITING
    ADD FOREIGN KEY (PREPODS_ID) REFERENCES PREPODS
GO

ALTER TABLE STUDENTS
    ADD FOREIGN KEY (GROUP_ID) REFERENCES GROUPS
GO

ALTER TABLE STUDY_LOAD
    ADD FOREIGN KEY (Type_STYDY_ID) REFERENCES TYPE_STUDY_LOAD
ALTER TABLE STUDY_LOAD
    ADD FOREIGN KEY (SUBJECT_ID) REFERENCES SUBJECTS
GO

ALTER TABLE SUBJECTS
    ADD FOREIGN KEY (FACULTY_ID) REFERENCES FACULTY
GO
```
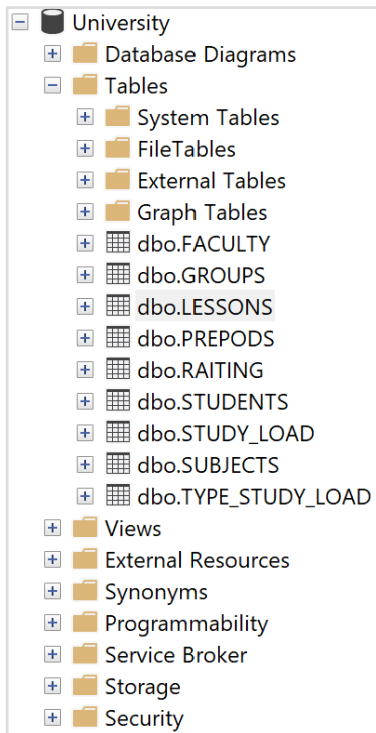
```
University
  Database Diagrams
  Tables
    System Tables
    FileTables
    External Tables
    Graph Tables
    dbo.FACULTY
    dbo.GROUPS
    dbo.LESSONS
    dbo.PREPODS
    dbo.RAITING
    dbo.STUDENTS
    dbo.STUDY_LOAD
    dbo.SUBJECTS
    dbo.TYPE_STUDY_LOAD
  Views
  External Resources
  Synonyms
  Programmability
  Service Broker
  Storage
  Security
```

FACULTY

Column Name	Data Type	Allow Nulls
ID	uniqueidentifier	☐
NAME	varchar(30)	☐

GROUPS

Column Name	Data Type	Allow Nulls
ID	uniqueidentifier	☐
NAME	varchar(10)	☐
HEAD_GROUP	uniqueidentifier	☑
FACULTY_ID	uniqueidentifier	☐

LESSONS

Column Name	Data Type	Allow Nulls
GROUP_ID	uniqueidentifier	☐
PREPOD_ID	uniqueidentifier	☐
STUDY_ID	char(20)	☐

PREPODS

Column Name	Data Type	Allow Nulls
ID	uniqueidentifier	☐
LAST_NAME	varchar(120)	☐
FIRST_NAME	varchar(120)	☑
FACULTY_ID	uniqueidentifier	☐

RAITING

Column Name	Data Type	Allow Nulls
ID	uniqueidentifier	☐
DATE	date	☐
VAL	numeric(18, 0)	☑
STUDENT_ID	uniqueidentifier	☐
STUDY_ID	char(20)	☐
PREPODS_ID	uniqueidentifier	☐
IS_ABSENT	varchar(3)	☑

STUDENTS

Column Name	Data Type	Allow Nulls
ID	uniqueidentifier	☐
LAST_NAME	varchar(60)	☐
FIRST_NAME	varchar(30)	☑
GROUP_ID	uniqueidentifier	☑

STUDY_LOAD

Column Name	Data Type	Allow Nulls
ID	char(20)	☐
hours	numeric(18, 0)	☑
SUBJECT_ID	uniqueidentifier	☐
Type_STYDY_ID	uniqueidentifier	☐

SUBJECTS

Column Name	Data Type	Allow Nulls
ID	uniqueidentifier	☐
NAME	varchar(120)	☐
FACULTY_ID	uniqueidentifier	☑

TYPE_STUDY_LOAD

Column Name	Data Type	Allow Nulls
ID	uniqueidentifier	☐
NAME	varchar(120)	☐