МІНІСТЕРСТВО ОСВІТИ, НАУКИ, МОЛОДІ ТА СПОРТУ УКРАЇНИ
НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ УКРАЇНИ
«КИЇВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ»
ФІЗИКО-ТЕХНІЧНИЙ ІНСТИТУТ

Лабораторна робота №6

Інформаційно-комунікаційні системи: Бази даних

Варіант № 4

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СТВОРЕННЯ І ВИКОРИСТАННЯ ПРЕДСТАВЛЕНЬ

Завдання

Предметна область:

Навчально-методичне управління (професорсько-викладацький склад).

Основні предметно-значущі сутності:

Співробітники, Підрозділи, Дисципліни.

Основні предметно-значущі атрибути сутностей:

- Співробітники - прізвище, ім'я, по батькові, стать, дата народження, адреса прописки, посада, підрозділ;
- Підрозділи - назва, вид підрозділу;
- Дисципліни — назва.

Основні вимоги до функцій системи:

- Вибрати дисципліни, що читаються співробітниками або певним співробітником;
- Вибрати список співробітників по підрозділам або певного підрозділу;
- Вибрати дисципліни, що читаються співробітниками по підрозділам або певного підрозділу.

Тригери:

1. На додавання запису в таблицю «Працівники». Якщо в таблиці вже існує запис про співробітника з збігаються предметно-значущими атрибутами, заборонити додавання нового запису.
2. Створити представлення «Дисципліни» з полями «Код_сотрудніка», «ФІО_сотрудніка», «Дисципліна». Оновлювати представлення «Дисципліни».

Процедура:

Процедура повинна повертати кількість дисциплін, що читаються кожним співробітником зазначеного підрозділу.

Необхідно додатково

Створити представлення для перегляду бази даних з ціллю перегляду інформації, сформульованої в розділі «основні вимоги щодо функцій системи» завдання.

Виконання завдання

Microsoft SQL

```
USE Lab_6


DROP TABLE IF EXISTS MAIN, EMPLOYEE,DEGREE,DEPARTMENT,SUBJECTS;


CREATE TABLE DEGREE

(

 ID_DEGREE INT IDENTITY PRIMARY KEY NOT NULL,

 NAME_DEGREE VARCHAR (20) NOT NULL,

);


CREATE TABLE SUBJECTS

(

 ID_SUBJECT INT IDENTITY PRIMARY KEY NOT NULL,

 NAME_SUBJECT VARCHAR (20) NOT NULL,

);


CREATE TABLE DEPARTMENT

(

 ID_DEPARTMENT INT IDENTITY PRIMARY KEY NOT NULL,

 NAME_DEPARTMENT VARCHAR (20) NOT NULL,

);
```

```
CREATE TABLE EMPLOYEE
(
 ID_EMPLOYEE INT IDENTITY PRIMARY KEY NOT NULL,
 NAME_EMPLOYEE VARCHAR (20) NOT NULL,
 SURNAME_EMPLOYEE VARCHAR (20) NOT NULL,
 FATHER_NAME_EMPLOYEE VARCHAR (20) NOT NULL,
 AGE_EMPLOYEE INT,
 ADDRESS_EMPLOYEE VARCHAR (25),
);

CREATE TABLE MAIN
(
EMPLOYEE_NAME INT,
EMPLOYEE_DEGREE INT,
EMPLOYEE_DEPARTMENT INT,
EMPLOYEE_SUBJECT INT,
FOREIGN KEY(EMPLOYEE_NAME) REFERENCES EMPLOYEE(ID_EMPLOYEE) ON DELETE CASCADE,
FOREIGN KEY(EMPLOYEE_DEGREE) REFERENCES DEGREE(ID_DEGREE) ON DELETE CASCADE,
FOREIGN KEY(EMPLOYEE_DEPARTMENT) REFERENCES DEPARTMENT(ID_DEPARTMENT) ON DELETE CASCADE,
FOREIGN KEY(EMPLOYEE_SUBJECT) REFERENCES SUBJECTS(ID_SUBJECT) ON DELETE CASCADE
);
```

```
INSERT INTO DEGREE VALUES

('DEGREE_1'),

('DEGREE_2'),

('DEGREE_3'),

('DEGREE_4'),

('DEGREE_5'),

('DEGREE_6'),

('DEGREE_7'),

('DEGREE_8'),

('DEGREE_9'),

('DEGREE_10');


 INSERT INTO DEPARTMENT VALUES

(' DEPARTMENT_1'),

(' DEPARTMENT_2'),

(' DEPARTMENT_3'),

(' DEPARTMENT_4'),

(' DEPARTMENT_5'),

(' DEPARTMENT_6'),

(' DEPARTMENT_7'),

(' DEPARTMENT_8'),

(' DEPARTMENT_9'),

(' DEPARTMENT_10');
```

```
INSERT INTO SUBJECTS VALUES

('SUBJECTS_1'),

('SUBJECTS_2'),

('SUBJECTS_3'),

('SUBJECTS_4'),

('SUBJECTS_5'),

('SUBJECTS_6'),

('SUBJECTS_7'),

('SUBJECTS_8'),

('SUBJECTS_9'),

('SUBJECTS_10');


INSERT INTO EMPLOYEE VALUES

('Name_1','Surname_1','Father_Name_1','20','Street_1'),

('Name_2','Surname_2','Father_Name_2','66','Street_2'),

('Name_3','Surname_3','Father_Name_3','25','Street_3'),

('Name_4','Surname_4','Father_Name_4','34','Street_4'),

('Name_5','Surname_5','Father_Name_5','61','Street_5'),

('Name_6','Surname_6','Father_Name_6','27','Street_6'),

('Name_7','Surname_7','Father_Name_7','60','Street_7'),

('Name_8','Surname_8','Father_Name_8','46','Street_8'),

('Name_9','Surname_9','Father_Name_9','35','Street_9'),

('Name_10','Surname_10','Father_Name_10','24','Street_10');
```

```
INSERT INTO MAIN VALUES

(1,2,3,1),

(2,3,2,5),

(3,2,1,2),

(4,3,5,1),

(5,2,3,2),

(6,3,3,10),

(7,7,3,1),

(8,8,3,3),

(9,2,1,6),

(10,10,2,4);


-- Вибрати дисципліни, що читаються співробітниками або певним співробітником

CREATE VIEW SUBJECT_AND_EMPLOYEE AS

SELECT EMPLOYEE.ID_EMPLOYEE,
       EMPLOYEE.NAME_EMPLOYEE,
       EMPLOYEE.SURNAME_EMPLOYEE,
       EMPLOYEE.FATHER_NAME_EMPLOYEE,
       SUBJECTS.NAME_SUBJECT

FROM EMPLOYEE,SUBJECTS,MAIN WHERE EMPLOYEE.ID_EMPLOYEE=MAIN.EMPLOYEE_NAME AND SUBJECTS.ID_SUBJECT=MAIN.EMPLOYEE_SUBJECT

GO
SELECT * FROM  SUBJECT_AND_EMPLOYEE
```

	ID_EMPLOYEE	NAME_EMPLOYEE	SURNAME_EMPLOYEE	FATHER_NAME_EMPLOYEE	NAME_SUBJECT
1	1	Name_1	Surname_1	Father_Name_1	SUBJECTS_1
2	2	Name_2	Surname_2	Father_Name_2	SUBJECTS_5
3	3	Name_3	Surname_3	Father_Name_3	SUBJECTS_2
4	4	Name_4	Surname_4	Father_Name_4	SUBJECTS_1
5	5	Name_5	Surname_5	Father_Name_5	SUBJECTS_2
6	6	Name_6	Surname_6	Father_Name_6	SUBJECTS_10
7	7	Name_7	Surname_7	Father_Name_7	SUBJECTS_1
8	8	Name_8	Surname_8	Father_Name_8	SUBJECTS_3
9	9	Name_9	Surname_9	Father_Name_9	SUBJECTS_6
10	10	Name_10	Surname_10	Father_Name_10	SUBJECTS_4

```
CREATE VIEW ANY_SUBJECT_AND_EMPLOYEE AS

SELECT   EMPLOYEE.ID_EMPLOYEE,
         EMPLOYEE.NAME_EMPLOYEE,
         EMPLOYEE.SURNAME_EMPLOYEE,
         EMPLOYEE.FATHER_NAME_EMPLOYEE,
         SUBJECTS.NAME_SUBJECT

FROM EMPLOYEE, SUBJECTS, MAIN WHERE EMPLOYEE.ID_EMPLOYEE=MAIN.EMPLOYEE_NAME AND SUBJECTS.ID_SUBJECT=MAIN.EMPLOYEE_SUBJECT AND SUBJECTS.ID_SUBJECT=6

GO
SELECT * FROM  ANY_SUBJECT_AND_EMPLOYEE
```

	ID_EMPLOYEE	NAME_EMPLOYEE	SURNAME_EMPLOYEE	FATHER_NAME_EMPLOYEE	NAME_SUBJECT
1	9	Name_9	Surname_9	Father_Name_9	SUBJECTS_6

```
-- Вибрати список співробітників по підрозділам або певного підрозділу

CREATE VIEW DEPARTMENT_AND_EMPLOYEE AS

SELECT EMPLOYEE.ID_EMPLOYEE,
       EMPLOYEE.NAME_EMPLOYEE,
       EMPLOYEE.SURNAME_EMPLOYEE,
       EMPLOYEE.FATHER_NAME_EMPLOYEE,
       DEPARTMENT.NAME_DEPARTMENT

FROM EMPLOYEE,DEPARTMENT,MAIN WHERE EMPLOYEE.ID_EMPLOYEE=MAIN.EMPLOYEE_NAME AND DEPARTMENT.ID_DEPARTMENT=MAIN.EMPLOYEE_DEPARTMENT

GO
SELECT * FROM  DEPARTMENT_AND_EMPLOYEE
```

	ID_EMPLOYEE	NAME_EMPLOYEE	SURNAME_EMPLOYEE	FATHER_NAME_EMPLOYEE	NAME_DEPARTMENT
1	1	Name_1	Surname_1	Father_Name_1	DEPARTMENT_3
2	2	Name_2	Surname_2	Father_Name_2	DEPARTMENT_2
3	3	Name_3	Surname_3	Father_Name_3	DEPARTMENT_1
4	4	Name_4	Surname_4	Father_Name_4	DEPARTMENT_5
5	5	Name_5	Surname_5	Father_Name_5	DEPARTMENT_3
6	6	Name_6	Surname_6	Father_Name_6	DEPARTMENT_3
7	7	Name_7	Surname_7	Father_Name_7	DEPARTMENT_3
8	8	Name_8	Surname_8	Father_Name_8	DEPARTMENT_3
9	9	Name_9	Surname_9	Father_Name_9	DEPARTMENT_1
10	10	Name_10	Surname_10	Father_Name_10	DEPARTMENT_2

```
CREATE VIEW ANY_DEPARTMENT_AND_EMPLOYEE AS

SELECT EMPLOYEE.ID_EMPLOYEE,
       EMPLOYEE.NAME_EMPLOYEE,
       EMPLOYEE.SURNAME_EMPLOYEE,
       EMPLOYEE.FATHER_NAME_EMPLOYEE,
       DEPARTMENT.NAME_DEPARTMENT

FROM EMPLOYEE, DEPARTMENT, MAIN WHERE EMPLOYEE.ID_EMPLOYEE=MAIN.EMPLOYEE_NAME AND DEPARTMENT.ID_DEPARTMENT=MAIN.EMPLOYEE_DEPARTMENT AND DEPARTMENT.ID_DEPARTMENT=2

GO
SELECT * FROM  ANY_DEPARTMENT_AND_EMPLOYEE
```

	ID_EMPLOYEE	NAME_EMPLOYEE	SURNAME_EMPLOYEE	FATHER_NAME_EMPLOYEE	NAME_DEPARTMENT
1	2	Name_2	Surname_2	Father_Name_2	DEPARTMENT_2
2	10	Name_10	Surname_10	Father_Name_10	DEPARTMENT_2

```
-- Вибрати дисципліни, що читаються співробітниками по підрозділам або певного підрозділу

CREATE VIEW SUBJECT_AND_DEPARTMENT_AND_EMPLOYEE AS

SELECT ID_EMPLOYEE,
       NAME_EMPLOYEE,
       SURNAME_EMPLOYEE,
       FATHER_NAME_EMPLOYEE,
       NAME_SUBJECT,
       NAME_DEPARTMENT

FROM MAIN

INNER JOIN EMPLOYEE ON MAIN.EMPLOYEE_NAME=EMPLOYEE.ID_EMPLOYEE
INNER JOIN DEPARTMENT ON DEPARTMENT.ID_DEPARTMENT=MAIN.EMPLOYEE_DEPARTMENT
INNER JOIN SUBJECTS ON SUBJECTS.ID_SUBJECT=MAIN.EMPLOYEE_SUBJECT

GO
SELECT * FROM  SUBJECT_AND_DEPARTMENT_AND_EMPLOYEE
```

	ID_EMPLOYEE	NAME_EMPLOYEE	SURNAME_EMPLOYEE	FATHER_NAME_EMPLOYEE	NAME_SUBJECT	NAME_DEPARTMENT
1	1	Name_1	Surname_1	Father_Name_1	SUBJECTS_1	DEPARTMENT_3
2	2	Name_2	Surname_2	Father_Name_2	SUBJECTS_5	DEPARTMENT_2
3	3	Name_3	Surname_3	Father_Name_3	SUBJECTS_2	DEPARTMENT_1
4	4	Name_4	Surname_4	Father_Name_4	SUBJECTS_1	DEPARTMENT_5
5	5	Name_5	Surname_5	Father_Name_5	SUBJECTS_2	DEPARTMENT_3
6	6	Name_6	Surname_6	Father_Name_6	SUBJECTS_10	DEPARTMENT_3
7	7	Name_7	Surname_7	Father_Name_7	SUBJECTS_1	DEPARTMENT_3
8	8	Name_8	Surname_8	Father_Name_8	SUBJECTS_3	DEPARTMENT_3
9	9	Name_9	Surname_9	Father_Name_9	SUBJECTS_6	DEPARTMENT_1
10	10	Name_10	Surname_10	Father_Name_10	SUBJECTS_4	DEPARTMENT_2

```
CREATE VIEW ANY_SUBJECT_AND_DEPARTMENT_AND_EMPLOYEE AS

SELECT  ID_EMPLOYEE,
        NAME_EMPLOYEE,
        SURNAME_EMPLOYEE,
        FATHER_NAME_EMPLOYEE,
        NAME_SUBJECT,
        NAME_DEPARTMENT

FROM MAIN

INNER JOIN EMPLOYEE ON MAIN.EMPLOYEE_NAME=EMPLOYEE.ID_EMPLOYEE
INNER JOIN DEPARTMENT ON DEPARTMENT.ID_DEPARTMENT=MAIN.EMPLOYEE_DEPARTMENT
INNER JOIN SUBJECTS ON SUBJECTS.ID_SUBJECT=MAIN.EMPLOYEE_SUBJECT

WHERE DEPARTMENT.ID_DEPARTMENT=3

GO
SELECT * FROM  ANY_SUBJECT_AND_DEPARTMENT_AND_EMPLOYEE
```

	ID_EMPLOYEE	NAME_EMPLOYEE	SURNAME_EMPLOYEE	FATHER_NAME_EMPLOYEE	NAME_SUBJECT	NAME_DEPARTMENT
1	1	Name_1	Surname_1	Father_Name_1	SUBJECTS_1	DEPARTMENT_3
2	5	Name_5	Surname_5	Father_Name_5	SUBJECTS_2	DEPARTMENT_3
3	6	Name_6	Surname_6	Father_Name_6	SUBJECTS_10	DEPARTMENT_3
4	7	Name_7	Surname_7	Father_Name_7	SUBJECTS_1	DEPARTMENT_3
5	8	Name_8	Surname_8	Father_Name_8	SUBJECTS_3	DEPARTMENT_3