НАО «КАРАГАНДИНСКИЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

ИМЕНИ АБЫЛКАСА САГИНОВА»

Кафедра информационных технологий и безопасности

**Лабораторная работа №3**

по дисциплине «Введение в базы данных, курсовой проект»

Тема: **"** **Создание запросов и модификация таблиц базы данных "**

**Принял:**

Преподаватель Жакина М.М

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*(подпись)        (дата)*

**Выполнил:**

ст.гр.СИБ-23-7  Абуев С.Б

Караганда 2025

**Лабораторная работа №3**

**Цель работы:** усвоить способы создания выборки данных в среде СУБД MS SQL Server.

CREATE DATABASE lab3

ON

(

NAME = 'lab3',

FILENAME = 'C:\Users\User\Desktop\databases\srsp\databases\mdf\lab3.mdf',

SIZE = 10MB,

MAXSIZE = 100MB,

FILEGROWTH = 5MB

)

LOG ON

(

NAME = 'lab3\_log',

FILENAME = 'C:\Users\User\Desktop\databases\srsp\databases\logs\lab3.ldf',

SIZE = 20MB,

MAXSIZE = 100MB,

FILEGROWTH = 5MB

)

GO

USE lab3

GO

CREATE TABLE Sellers

(

seller\_id INT IDENTITY(1,1) PRIMARY KEY,

full\_name NVARCHAR(100) NOT NULL,

city NVARCHAR(100)

)

GO

CREATE TABLE Products

(

product\_id INT IDENTITY(1,1) PRIMARY KEY,

product\_name NVARCHAR(100) NOT NULL

)

GO

CREATE TABLE Product\_Movements

(

movement\_id INT IDENTITY(1,1) PRIMARY KEY,

movement\_date DATE NOT NULL,

seller\_id INT NOT NULL,

product\_id INT NOT NULL,

quantity INT NOT NULL,

price DECIMAL(10,2) NOT NULL,

customer\_name NVARCHAR(100) NOT NULL,

CONSTRAINT fk\_movement\_seller FOREIGN KEY (seller\_id) REFERENCES Sellers(seller\_id)

ON UPDATE CASCADE

ON DELETE CASCADE,

CONSTRAINT fk\_movement\_product FOREIGN KEY (product\_id) REFERENCES Products(product\_id)

ON UPDATE CASCADE

ON DELETE CASCADE

)

GO

INSERT INTO Sellers (full\_name, city)

VALUES

(N'Peter Ivanov', N'Almaty'),

(N'Aleksey Sergeev', N'Astana'),

(N'Daniyar Nurmagambetov', N'Shymkent'),

(N'Anna Sidorova', N'Almaty')

GO

INSERT INTO Products (product\_name)

VALUES

(N'Monitor'),

(N'Keyboard'),

(N'Mouse'),

(N'Laptop')

GO

INSERT INTO Product\_Movements (movement\_date, seller\_id, product\_id, quantity, price, customer\_name)

VALUES

('2025-10-01', 1, 1, 2, 60000, N'Arthur Kim'),

('2025-10-01', 2, 2, 3, 8000, N'Ivan Petrov'),

('2025-10-02', 3, 4, 1, 350000, N'Sergey Andreev'),

('2025-10-02', 4, 3, 2, 5000, N'Ivan Petrov'),

('2025-10-03', 1, 2, 1, 8000, N'Arthur Kim'),

('2025-10-03', 2, 1, 1, 60000, N'Anna Smirnova'),

('2025-10-04', 3, 3, 3, 5000, N'Ivan Petrov'),

('2025-10-05', 4, 4, 2, 350000, N'Sergey Andreev')

GO

SELECT

movement\_date,

SUM(quantity \* price) AS total\_amount

FROM

Product\_Movements

GROUP BY

movement\_date;

GO

SELECT

COUNT(DISTINCT city) AS total\_unique\_cities

FROM

Sellers;

GO

SELECT

customer\_name,

MIN(quantity \* price) AS min\_purchase

FROM

Product\_Movements

GROUP BY

customer\_name;

GO

SELECT

DISTINCT customer\_name

FROM

Product\_Movements

ORDER BY

customer\_name ASC;

GO

SELECT

seller\_id,

quantity \* price \* 0.12 AS commission\_amount

FROM

Product\_Movements;

GO

SELECT

customer\_name,

COUNT(\*) AS purchase\_count

FROM

Product\_Movements

GROUP BY

customer\_name;

GO

SELECT \*

FROM Sellers

WHERE city = N'Almaty';

SELECT \*

FROM Product\_Movements

WHERE movement\_date BETWEEN '2025-10-01' AND '2025-10-03';

SELECT \*

FROM Products

WHERE product\_name LIKE N'%o%';

SELECT \*

FROM Sellers

WHERE city IN (N'Almaty', N'Shymkent');

SELECT \*

FROM Sellers

WHERE city IS NULL;

SELECT

customer\_name,

SUM(quantity \* price) AS total\_sum

FROM Product\_Movements

GROUP BY customer\_name

HAVING SUM(quantity \* price) > 100000;