Database

Lab-3

1.

DDL and DML are a subset of the SQL language:

The DDL language is used to create and modify the database structure, i.e. to create/modify/delete tables and relationships.

The DML language allows you to manipulate table data, i.e. with her lines. It allows you to select data from tables, add new data to tables, as well as update and delete existing data.

a)
```
CREATE TABLE books
      ( name VARCHAR(100),
        pages INTEGER,
        published SMALLINT,
        author CHAR(60)
      );

ALTER TABLE books ADD cost INTEGER;
DROP TABLE books;
```

b)
```
SELECT * FROM employees;

INSERT INTO employees (employee_id, last_name, email, job_id, salary)
VALUES (1234, 'Mascis', 'JMASCIS', 'IT_PROG', 9000);

UPDATE employees SET salary=9100 WHERE employee_id=1234;

DELETE FROM employees WHERE employee_id=1234;
```

2.

```
create table products
(
 id VARCHAR(255) PRIMARY KEY AUTO_INCREMENT NOT NULL UNIQUE,
 name VARCHAR(255) NOT NULL UNIQUE,
 description TEXT,
 price DOUBLE NOT NULL CHECK (price > 0)
)

create table order_items
(
 order_code INT AUTO_INCREMENT PRIMARY KEY UNIQUE,
 product_id VARCHAR(255) NOT NULL UNIQUE,
 quantity INT NOT NULL CHECK (quantity > 0),
 FOREIGN KEY (product_id) REFERENCES products(id),
 FOREIGN KEY (order_code) REFERENCES orders(code)
)

create table orders
(
 code INT PRIMARY KEY UNIQUE AUTO_INCREMENT,
 customer_id INT,
 total_sum DOUBLE NOT NULL CHECK (total_sum > 0),
 is_paid BOOLEAN NOT NULL,
 FOREIGN KEY (customer_id) REFERENCES customers(id)
)

create table customers
(
 id INT PRIMARY KEY AUTO_INCREMENT UNIQUE,
 full_name VARCHAR(50) NOT NULL,
 timestamp TIMESTAMP NOT NULL,
 delivery_address TEXT NOT NULL
)
```

3.

```
CREATE TABLE students (
    id INT NOT NULL PRIMARY KEY AUTO_INCREMENT,
    fullName VARCHAR(255) NOT NULL,
    age INT NOT NULL,
    birthday DATE NOT NULL,
    gender VARCHAR(50) NOT NULL,
    averageScore INT NOT NULL,
    about TEXT NOT NULL,
    needDormitory BOOLEAN DEFAULT false,
    additional TEXT DEFAULT ''
);

CREATE TABLE instructors (
    id INT NOT NULL PRIMARY KEY AUTO_INCREMENT,
    fullName varchar(255) NOT NULL,
    languages varchar(255) NOT NULL,
    experience INT DEFAULT 0,
    canRemote BOOLEAN DEFAULT false
);

CREATE TABLE participants (
    id INT NOT NULL PRIMARY KEY AUTO_INCREMENT,
    lesson varchar(255) NOT NULL,
    instructor_id INT NOT NULL,
    students_ids VARCHAR(255) NOT NULL,
    room INT NOT NULL,
    FOREIGN KEY (instructor_id) REFERENCES instructors(id)
);
```

4.

```
INSERT INTO customers (full_name, timestamp, delivery_address)
VALUES ('Kuznetsov Maksim Evgenievich', '2022-10-06T09:46:23.994Z', 'Almaty,
Abay street, 12');

INSERT INTO orders (customer_id, total_sum, is_paid)
VALUES (1, 5253.54, false);

UPDATE customers
SET full_name = 'Kuznetsova Elena Evgenievna'
WHERE id = 1;

DELETE FROM orders WHERE is_paid = false;
```
