Bissenova Anara / 20BD / Lab2

Task 1. Explain the difference between DDL and DML, give the following examples:

DDL	DML
Data Definition Language	Data Manipulation Language
Used to create the database schema	Used to manipulate database
Change the entire database or the table	Change one or more records in the table

a) at least 3 DDL commands: CREATE, ALTER, DROP
b) at least 4 DML commands: SELECT, INSERT, UPDATE, DELETE

Task 2. Write SQL statements to create tables in the figure below:

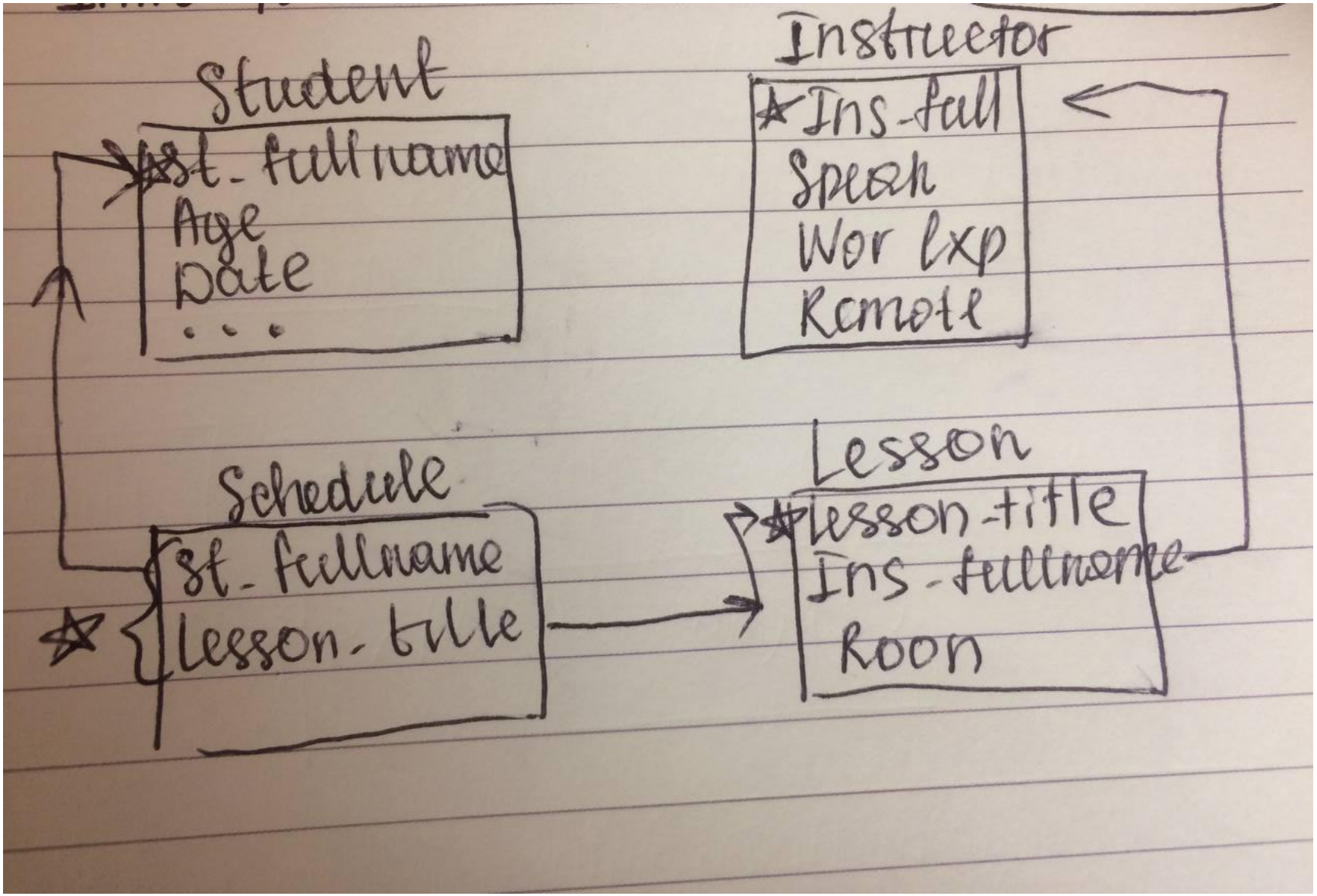
```
CREATE TABLE Customers (
    Customer_id int NOT NULL UNIQUE,
    Full_name varchar (50) NOT NULL,
    Timestamp timestamp NOT NULL,
    Delivery_address text NOT NULL,

    PRIMARY KEY (Customer_id),

);

CREATE TABLE Orders (
    Order_code int NOT NULL UNIQUE,
    Customer_id int,
```

```
  Total_sum double precision NOT NULL CHECK (Total_sum > 0),
  Is_paid Boolean NOT NULL,

  PRIMARY KEY (Order_id),
  FOREIGN KEY (Customer_id) REFERENCES Customers,

);

CREATE TABLE Order_Items (
  Order_code int NOT NULL UNIQUE,
  Product_id varchar NOT NULL UNIQUE,
  Quantity int NOT NULL CHECK(Quantity > 0),

  PRIMARY KEY (Order_code),
  FOREIGN KEY (Order_code) REFERENCES Orders,
  PRIMARY KEY (Product_id),
  FOREIGN KEY (Product_id) REFERENCES Products,

);

CREATE TABLE Products (
  Product_id varchar NOT NULL UNIQUE,
  Name varchar NOT NULL UNIQUE,
  Description text,
  Price double precision NOT NULL CHECK(Price > 0)

  PRIMARY KEY (Product_id),

  );
```

Task 3.

```
CREATE TABLE Student (
  St_fullname varchar(50) NOT NULL UNIQUE,
  Age int NOT NULL CHECK(Age > 0),
  Birth_date date NOT NULL,
  Gender char(1) NOT NULL,
  Average_grade float(5) NOT NULL CHECK(Average_grade > 0),
  Info text,
  Dorm boolean NOT NULL,
  Addinfo text,

  PRIMARY_KEY (St_fullname),

 );

CREATE TABLE Instructor (
  Ins_fullname varchar(50) NOT NULL UNIQUE,
  Speaking_lan varchar(50) NOT NULL,
  Work_exp int NOT NULL,
  Remote_less Boolean NOT NULL,

  PRIMARY_KEY (Ins_fullname),

 );

CREATE TABLE Lesson (
  Lesson_title varchar(50) NOT NULL UNIQUE,
```

```
  Ins_fullname varchar(50) NOT NULL,
  Room_number int NOT NULL,

  PRIMARY_KEY (Lesson_title),
  FOREIGN_KEY (Ins_fullname) REFERENCES Instructor,

);

CREATE TABLE Schedule (
  St_fullname varchar(50) NOT NULL,
  Lesson_title varchar(50) NOT NULL,

  PRIMARY_KEY ({St_fullname, Lesson_title}),
  FOREIGN_KEY (Lesson_title) REFERENCES Lesson,
  FOREIGN_KEY (St_fullname) REFERENCES Student,

);
```


Student
st_fullname
Age
Date
...
Instructor
Ins_full
Speak
Wor Exp
Remote
Schedule
st_fullname
Lesson_title
Lesson
Lesson_title
Ins_fullname
Room

Task 4. Give examples of insertion, update and deletion of data on tables from exercise 2:

```
INSERT INTO Customers(customer_id, full_name, timestamp, delivery_address)
    VALUES (‘111’, ‘Bissenova A’, ‘2021-09-22 21:18:03’, ‘9,5,98’);

UPDATE Order_Items
    SET Quantity = Quantity + 3
    WHERE product_id = ‘Chocolate’;

DELETE FROM Products
    WHERE price BETWEEN 1000 AND 2000;
```