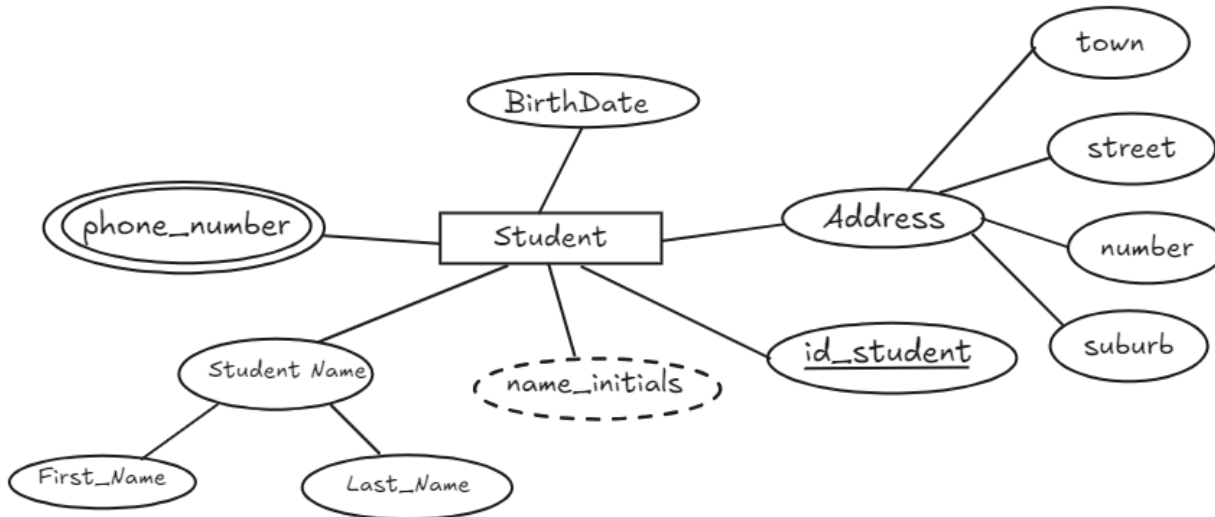


## Test 2 in Information System and Databases - Solution

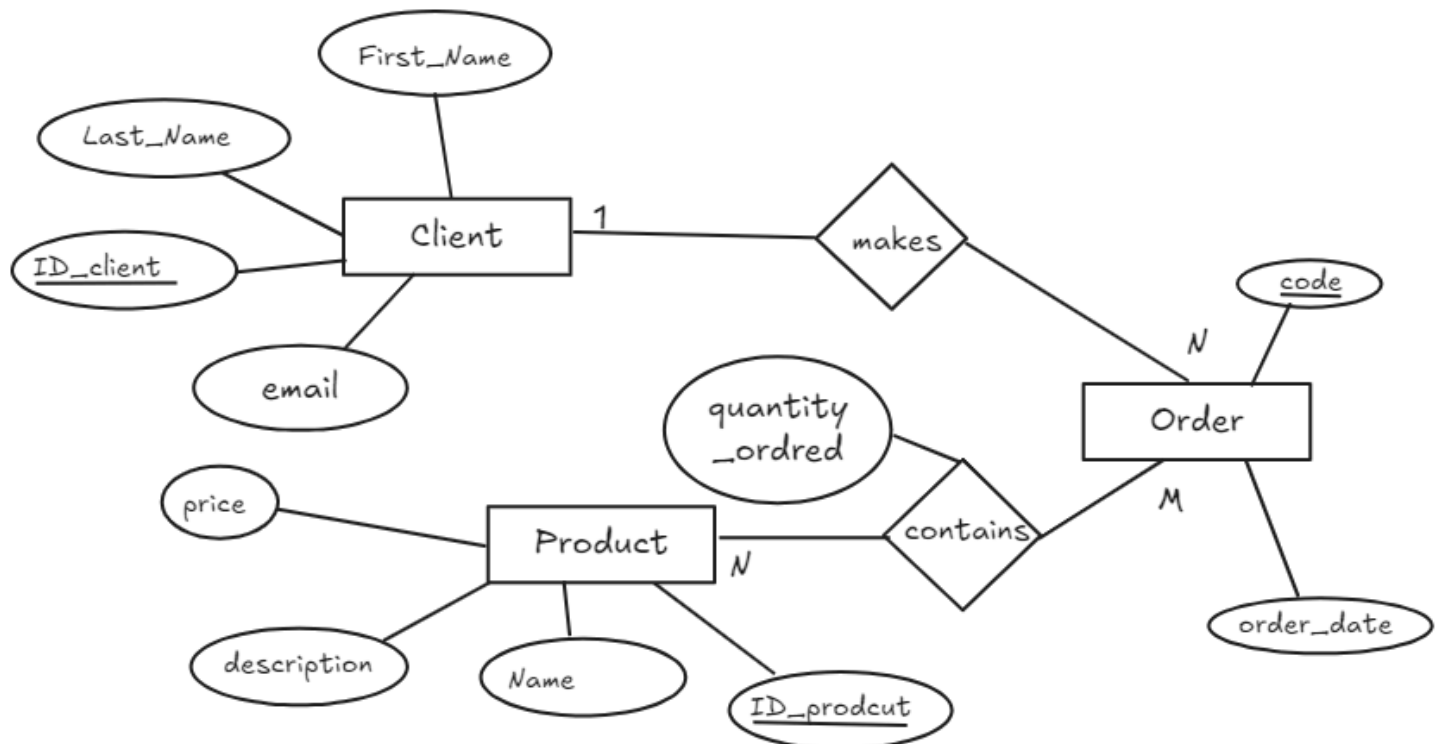
**Exercise 1: (3 points)** Given the ERD below describing the entity "Student", give its corresponding representation in the Relational Model.



- **Answer:**

Student(id\_student, First\_Name, Last\_Name, BirthDate, town, street, number, suburb) **2.25**  
 phone\_student(id\_student, phone\_number) **0.75**

**Exercise 2: (4.5 points)** Given the ERD described below, deduce the corresponding Relational Model



- **Answer:**

Client(ID\_client, Last\_Name, First\_Name, email) **1.25**  
order(code, order\_date, ID\_client) **1**  
detail\_orders(code, ID\_product, quantity\_ordered) **1**  
product(ID\_Product, name, description, price) **1.25**

**Exercise 3: (7.5 points)**

- Consider the database “Ent”, which will contain the tables described by the relational model from the previous exercise (exercise 2).

- **Q1:** Write the SQL query to create the database “Ent”.

**A1:**

**Create Database Ent; 0.5**

- **Q2:** Considering that the order in which the tables are created is not important, write the SQL query to create the “Client” table, knowing that:

- First\_name and Last\_name fields must be characters of fixed size, and must not be null.
- The email attribute must contain the character “@”
- the values of **id\_client** are of type integer, that must be automatically determined. The minimum value is 1, and is automatically incremented by 10.

**A2:**

```
use ent; 0.25  
create table Client ( 0.5  
id_client int identity(1,10) primary key, 1  
first_name char(50) not null, 0.75  
last_name char(50) not null, 0.75  
email char(100) check (email like '%@%') 1.25  
);
```

- **Q3** - Assuming the “Product” table already exists, write the SQL query that:

- adds the column “**quantity**” (the quantity in the stock). The column must not be null, must be unique, and must be greater or equal than 50.

**A3:**

```
use ent; 0.25  
alter table Product 0.5  
add quantity int not null unique check(quantity>=50); 1.75
```