## **Practical Test**

### **Task 1**

You should have been sent an accompanying file **students-and-subjects.csv**. This includes example data for a group of 20 fictional students.

For each student there is a record of an id number, first name, surname, title, e-mail address, date of birth, and up to 2 subjects that the student is studying.

Using this csv please design a relational database that would be appropriate for storing all the details in the csv file.

Please provide a database diagram showing the tables you would use in the database, and the relationships between the tables, and accompanying SQL commands that you would use to create the tables and their relationships.

### **ANS:**

*Tables:*

* **Students:** This table stores the basic information about each student, such as their ID number, first name, surname, title, email address, and date of birth.
* **Subjects:** This table stores the list of subjects that are offered by the school.
* **Students\_Subjects:** This table stores the relationship between students and subjects. It shows which students are studying which subjects.

*SQL Commands to Create the Tables and Relationships:*

**Create the Students table:**

CREATE TABLE Students (

id INT PRIMARY KEY,

first\_name VARCHAR(50),

surname VARCHAR(50),

title VARCHAR(10),

email VARCHAR(100),

date\_of\_birth DATE

);

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**Create the Subjects table:**

CREATE TABLE Subjects (

id INT PRIMARY KEY,

subject\_name VARCHAR(100)

);

**Create the Students\_Subjects junction table:**

CREATE TABLE Students\_Subjects (

student\_id INT,

subject\_id INT,

PRIMARY KEY (student\_id, subject\_id),

FOREIGN KEY (student\_id) REFERENCES Students(id),

FOREIGN KEY (subject\_id) REFERENCES Subjects(id)

);

With these SQL commands, you'll create three tables: Students, Subjects, and Students\_Subjects, along with their relationships. The `Students\_Subjects` table serves as a junction table to establish a many-to-many relationship between students and subjects. It will have two foreign keys, `student\_id` and `subject\_id`, referencing the primary keys of the `Students` and `Subjects` tables, respectively.