Individual Project – Part B

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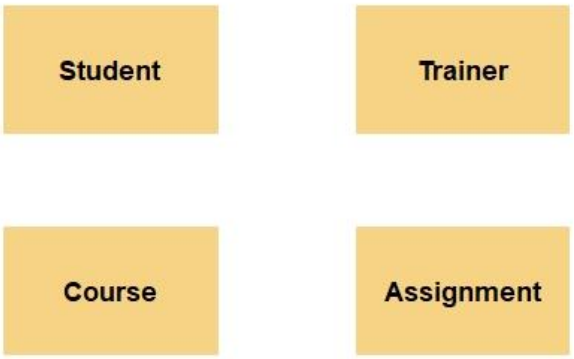
1. *Make a draft design of a database that can keep data for the main entities of the assignment and name the tables as: Students, Trainers, Assignments, Courses*

Entity Identification

There are four entities:

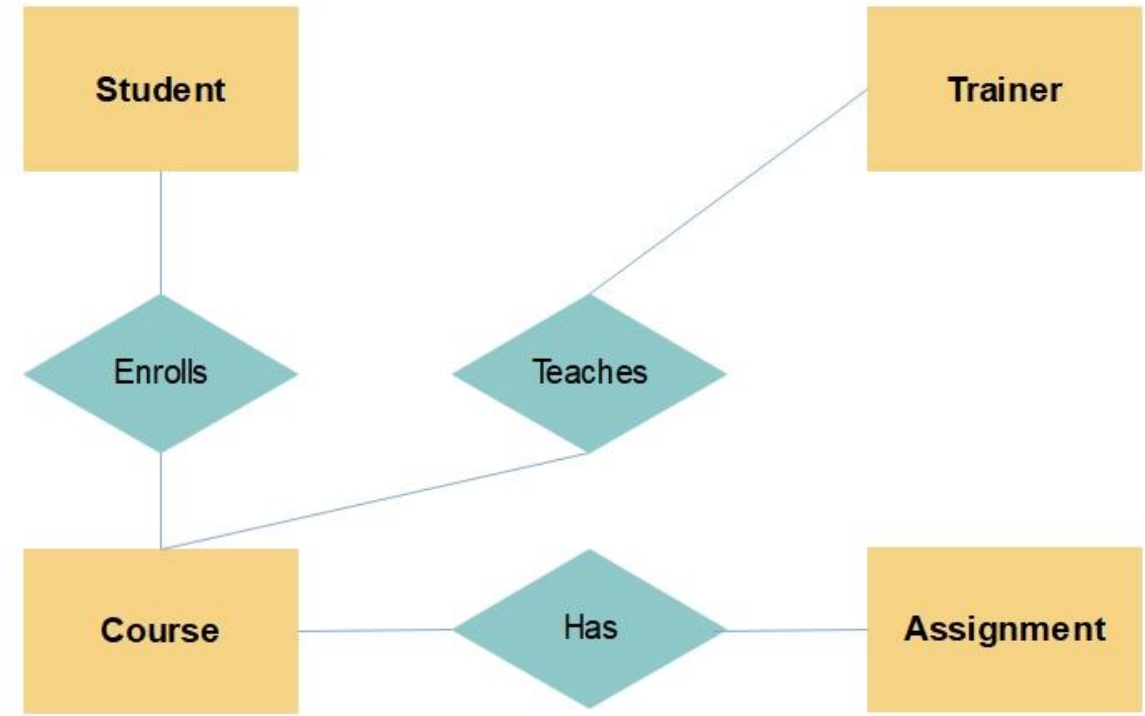
- Student
- Trainer
- Course
- Assignment



Relationship Identification

There are the following relationships:

- The student **attends** course.
- The trainer **teaches** course.
- A course **has** assignments.



Cardinality Identification

A student can attend **multiple** courses & each course can have **multiple** students.

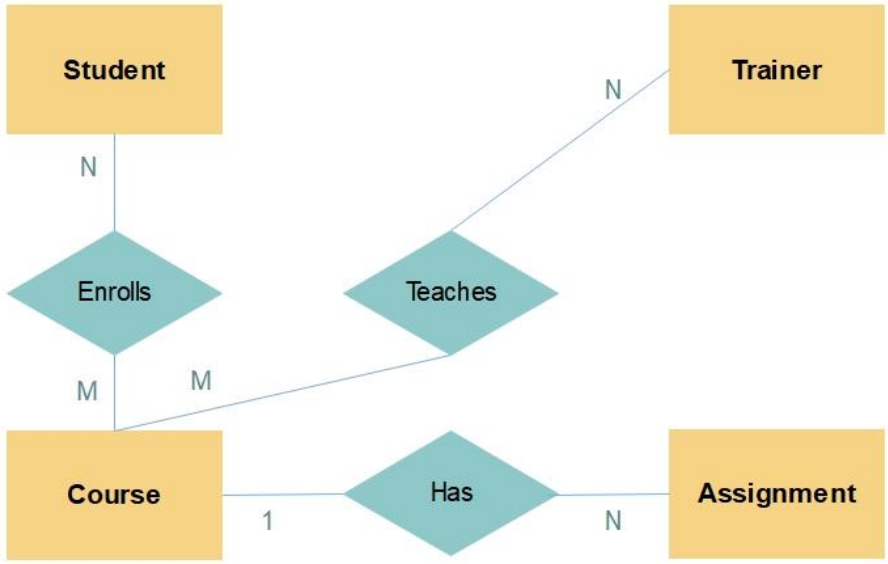
- Student – Course -> many-to-many relationship

The trainer can teach in **multiple** courses & each course can be taught by **multiple** trainers.

- Trainer – Course -> many-to-many relationship

The assignment belongs to only **one** course & each course can have **multiple** assignments.

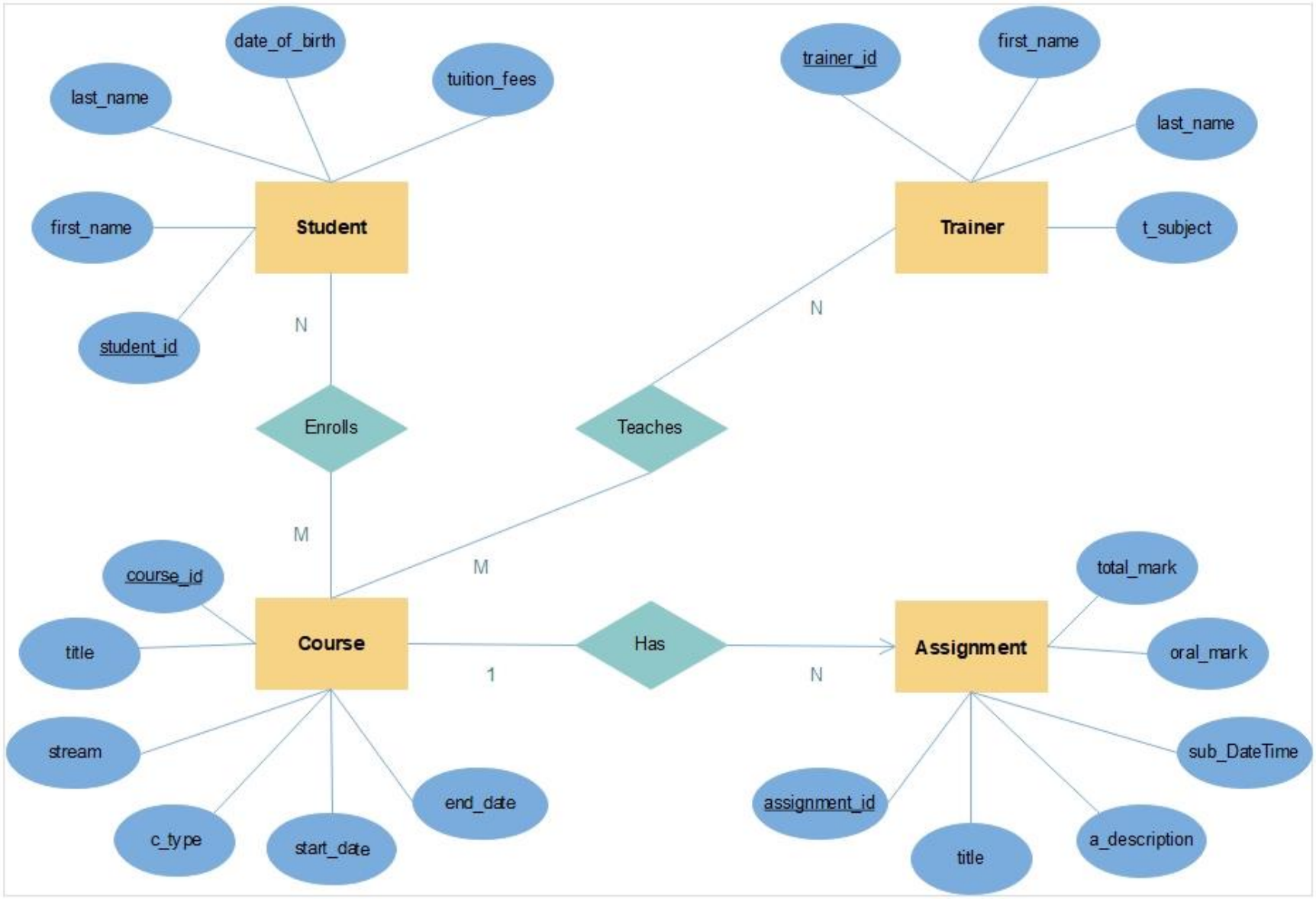
- Course – Assignment -> one-to-many relationship



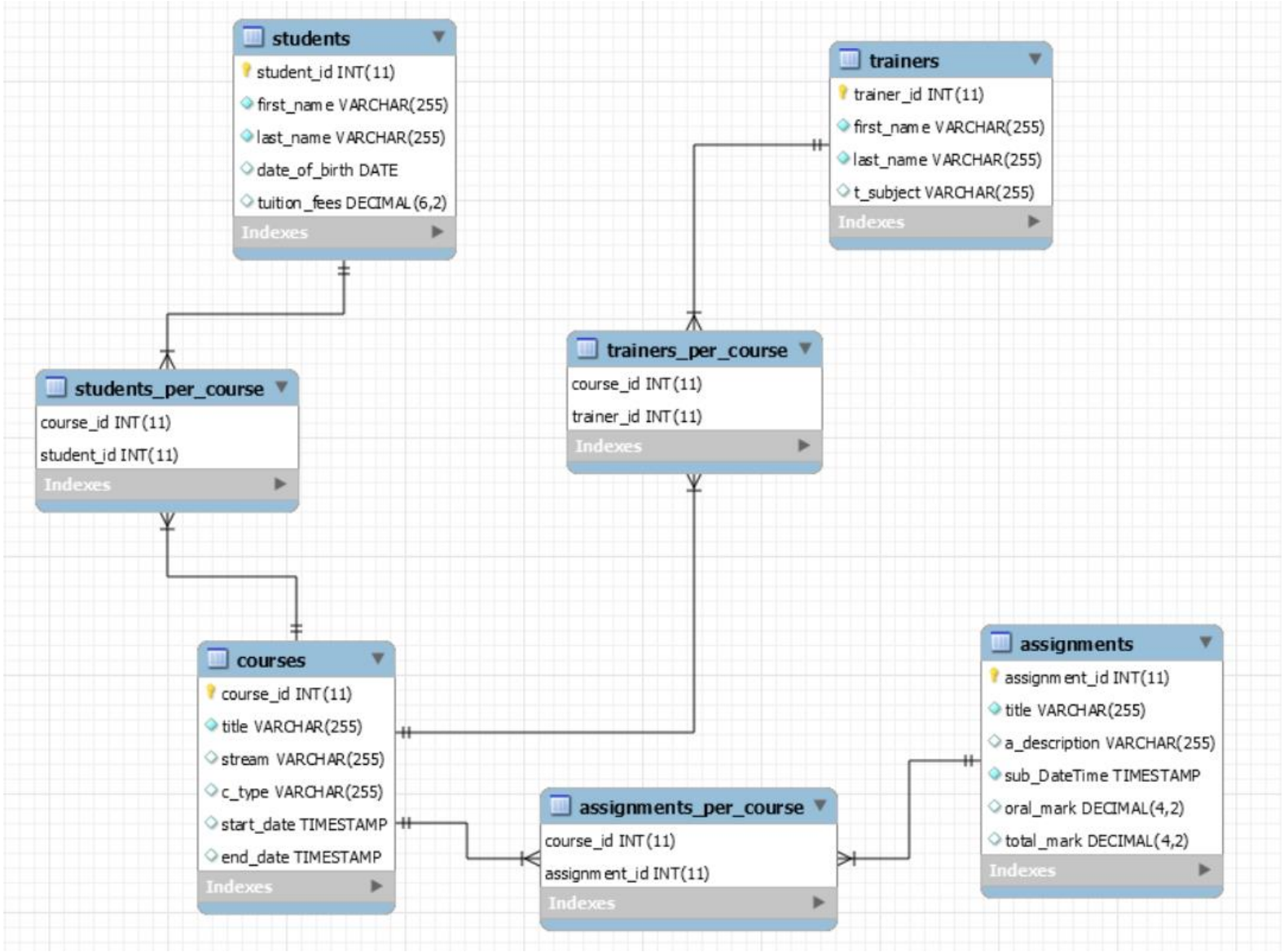
Identify Attributes

Entity	Primary Key	Attribute
Student	student_id	first_name last_name date_of_birth tuition_fees
Trainer	trainer_id	first_name last_name t_subject
Course	course_id	title stream c_type start_date end_date
Assignment	assignment_id	title a_description sub_DateTime oral_mark total_mark

Draft design of the database



Or using tables:



2. *Identify any other tables you need based on your implementation and construct them*

Implementing more tables (junction tables):

Table: 'students_per_course'

Students and courses have many -to-many relationship, so a new table is created adding the two foreign key columns, one for each entity participating in the relationship.

(foreign key: course_id from table 'courses' and

foreign key: student_id from table 'students')

Table: 'trainers_per_course'

Trainers and courses have many -to-many relationship, so a new table is created adding the two foreign key columns, one for each entity participating in the relationship.

(foreign key: course_id from table 'courses' and

foreign key: trainer_id from table 'trainers')

Table: 'assignments_per_course'

Courses and assignments have one -to-many relationship, so a foreign key column could be added in the (N-side) table participating in the relationship, which is the table 'Assignments'. Instead, a new table was created adding the two foreign key columns, one for each entity participating in the relationship, to make it more useful.

(foreign key: course_id from table courses and

foreign key: student_id from table students)

3. *Design the ERD of your system and verify it through an online tool such as https://sqldbm.com/*

ERD through an online tool (https://app.sqldbm.com/MySQL/Share/JJNjMMKYnfN7tQRf4y9QJ0GFrngIE8md_DYjF4jNYw0)