

ERD relationship properties

course: Information Modelling

Participation

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WHAT IS THE...

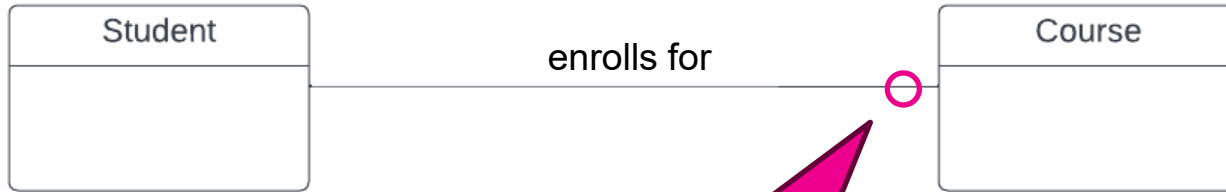
PARTICIPATION of a relationship



The **participation constraint of a relationship** specifies the number of instances of an entity type that can participate in a relationship.

PARTICIPATION

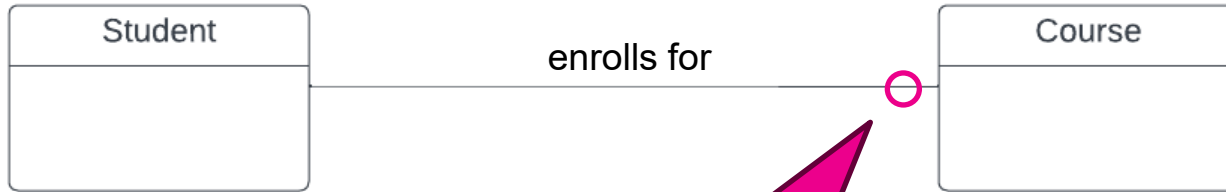
ERD RELATIONSHIP



A student can enroll in a course but it's not mandatory.

PARTICIPATION

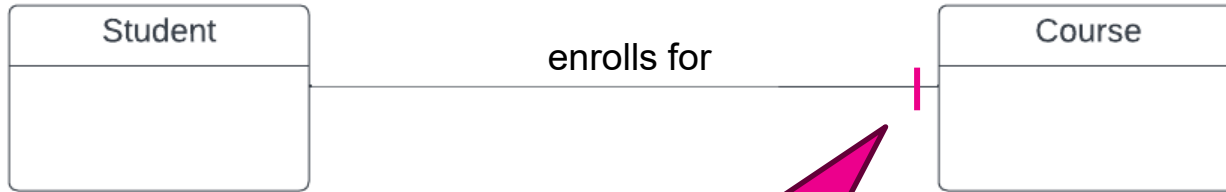
ERD RELATIONSHIP



Participation is optional/partial:
not all entities have to
participate in the relation

PARTICIPATION

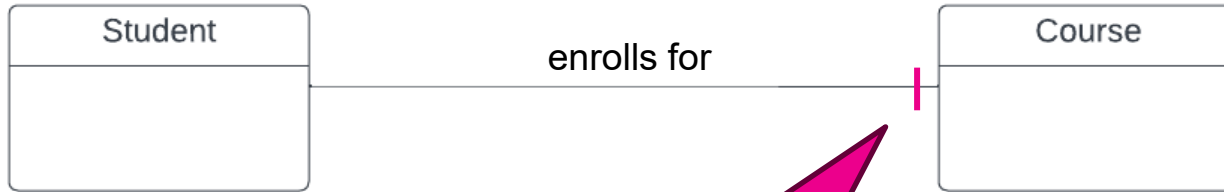
ERD RELATIONSHIP



student has to enroll at least
for one course.

PARTICIPATION

ERD RELATIONSHIP



Participation is mandatory/total:
all entities have to participate
in the relation

PARTICIPATION of a relationship

The **participation constraint of a relationship** specifies the number of instances of an entity type that can participate in a relationship

- **partial** participation: an entity **may** take part in the relationship
- **total** participation: every entity **must** take part in the relationship

Cardinality

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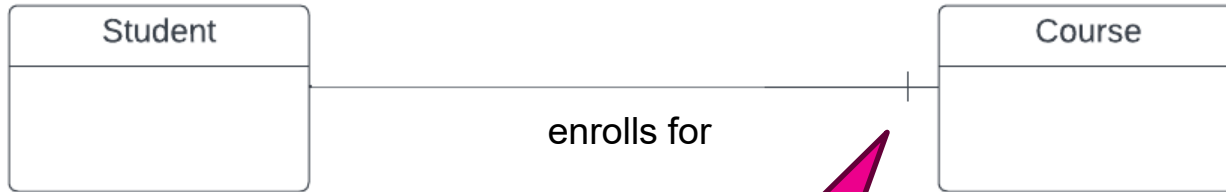
WHAT IS THE...

CARDINALITY of a relationship

The **cardinality of a relationship** is a constraint on a relationship indicating how many instances of an entity type can relate to one instance of another entity type.

CARDINALITY

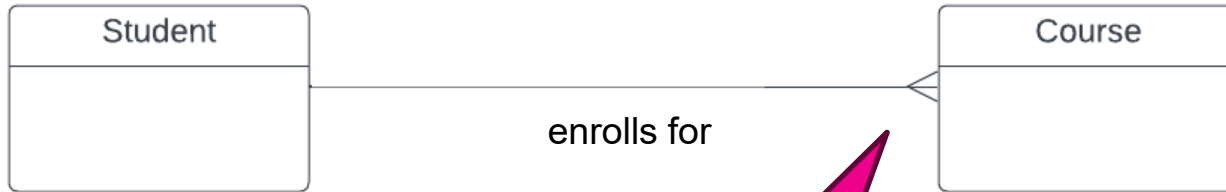
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A student can enroll for one
course at most

CARDINALITY

ERD RELATIONSHIP



A student can enroll for more
than one course

CARDINALITY of a relationship

The **cardinality of a relationship** is a constraint on a relationship indicating how many instances of an entity type can relate to one instance of another entity type.

For relationships with two roles, this can be:

- one to one

- one to many / many to one

- many to many

Participation and Cardinality

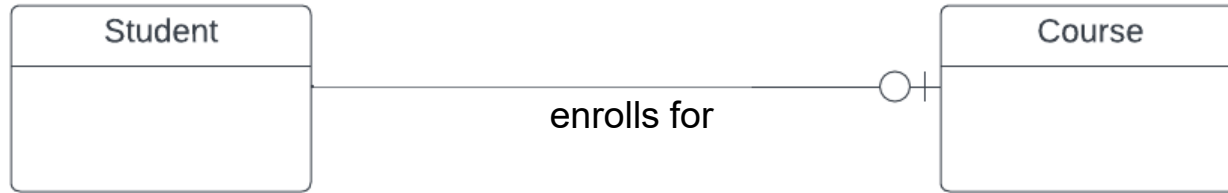
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PARTICIPATION and CARDINALITY

The **participation of a relationship** defines the **minimum** number of related entities on a relationship (0 or 1), the **cardinality of a relationship** defines the **maximum** number of related entities on a relationship (1 or more).

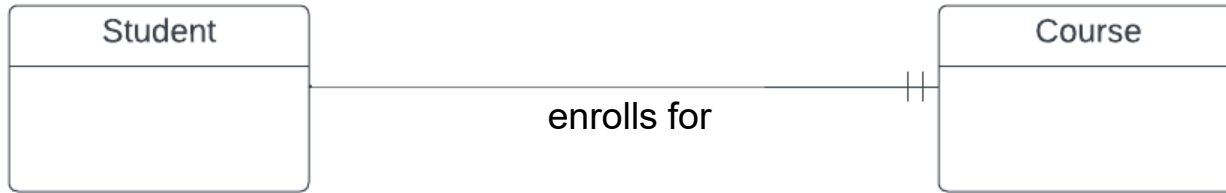
PARTICIPATION AND CARDINALITY

ERD RELATIONSHIP



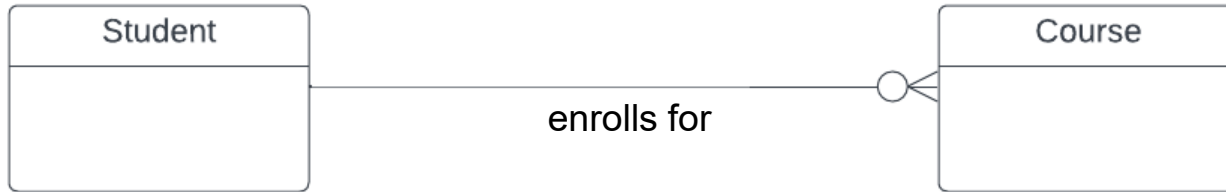
PARTICIPATION AND CARDINALITY

ERD RELATIONSHIP



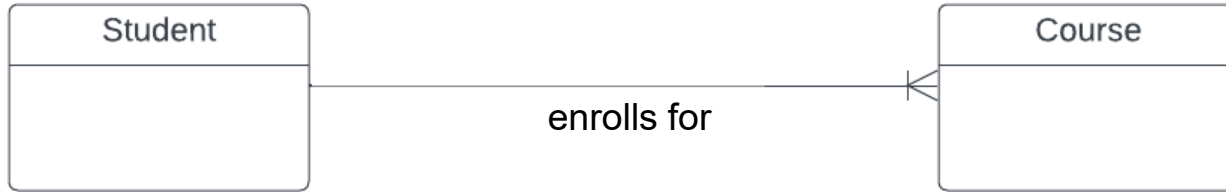
PARTICIPATION AND CARDINALITY

ERD RELATIONSHIP



PARTICIPATION AND CARDINALITY

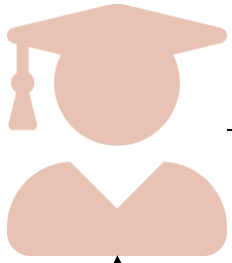
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Attributes of a relationship

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student



enrolls for

course



is enrolled
by

FINDING...

Attributes

A student enrolls for/is enrolled by a course and gets a score.

Where do we have to put that attribute?

ERD

ATTRIBUTE OF A RELATIONSHIP



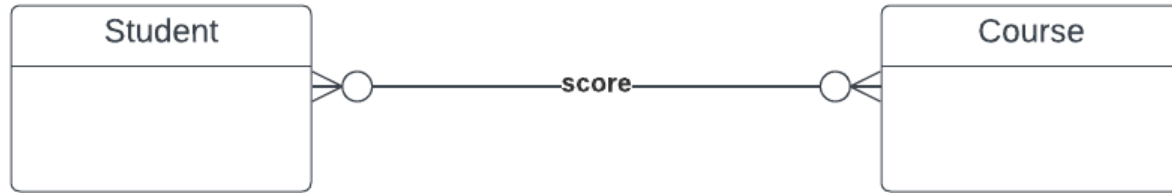
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ATTRIBUTE OF A RELATIONSHIP



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ATTRIBUTE OF RELATIONSHIP



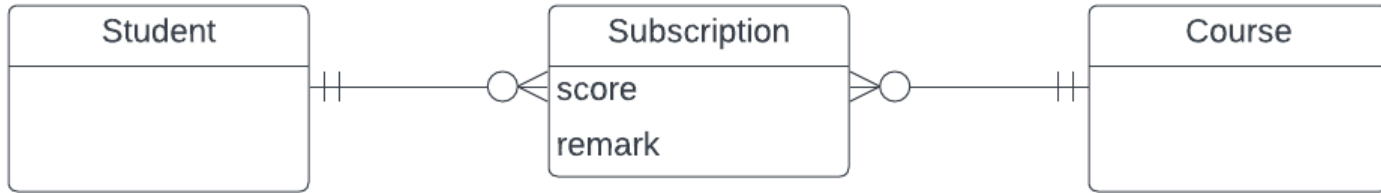
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ATTRIBUTE OF AN RELATIONSHIP



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UPGRADE RELATIONSHIP TO ENTITY TYPE



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