Participation constraints

ERDs have **participation constraints**

- This a similar notion to database Not Null constraints

- The participation constraint is **drawn on the relationship** line between two entities

- A single line | indicates that participation is **MUST**
  - A subject **must** be convened by a lecturer
  - Participation is **mandatory**

- A circle ○ indicates that participation is **MAY**
  - A subject **may** be convened by a lecturer
  - Participation is **optional**

Participation constraints

Participation Examples

- One Subject **must** be Convened by One Lecturer

- One Subject **may be** Convened by One Lecturer

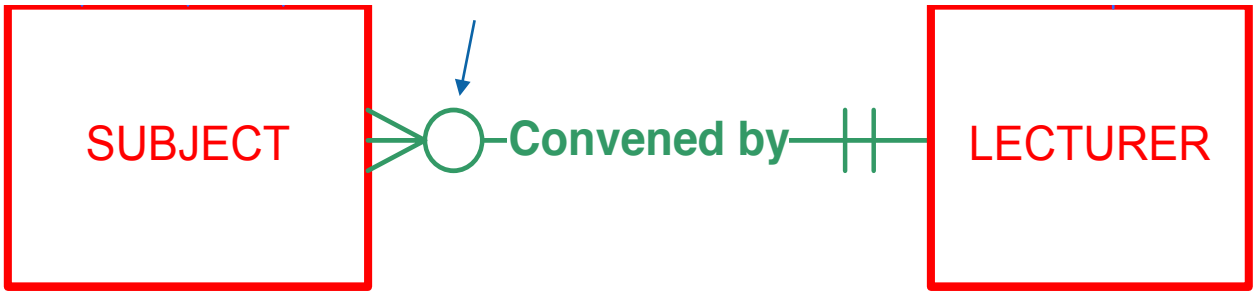
Cardinality & Participation constraints

- **Cardinality** constraints are **vital** to an ERD
  - They determine the number of tables that will be developed in your database

- **Participation** constraints are **less important** in an ERD
  - They **do not** affect the **number** of tables or columns that will exist in your database
  - **Participation** simply specifies whether **Not Null constraints** are required in tables when the database is implemented.

Cardinality & Participation constraints

- Generally, the **Many** end of a relationship has optional participation. E.g. The parent MAY have many children .
- It is recommended that you **always** draw **optional** participation at the **many** end



- *Mandatory participation at both ends causes database **dilemmas***
- *Imagine if your ERD said that*

  - *"A Child must have a Parent and a Parent must have a Child"*
  - *How can data be inserted?*
    - *A parent cannot be added as it **must** already have a child !*
    - *A child cannot be added as it **must** already have a parent !*
- *Database developers sometimes switch off such constraints when loading a database with initial data and then switch on the constraints from that point onwards. Not recommended for day-to-day operations.*