



Question One

- Consider the following relationship:

```
graph LR; City[City] --- IsCapitalOf{Is capital of}; IsCapitalOf --- Province[Province];
```

A vertical stack of four decorative icons: a clock, a clock, a stack of books, and a stack of books.

Question One

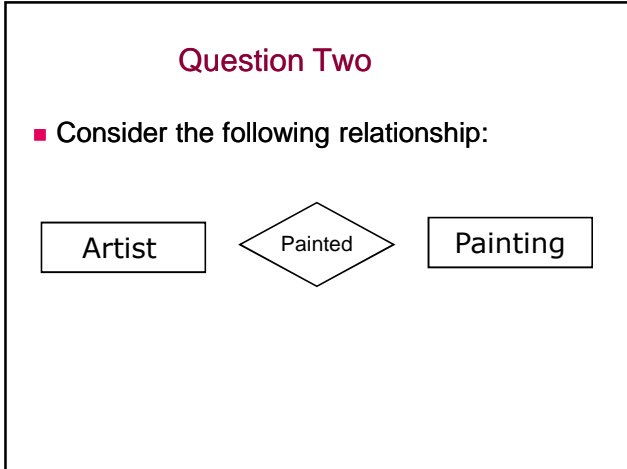
- What is the participation of the entity **City** in the relationship "City is capital of Province"?
- A. Total
- B. **Partial**

- What is the participation of the entity **Province** in the relationship "City is capital of Province"?
- A. Total
- B. Partial

A vertical stack of four decorative icons: a clock, a clock, a stack of books, and a stack of books.

Question One

- What is the cardinality of the relationship **is capital of** between City and Province?
- A. **One to One**
- B. One to Many
- C. Many to One
- D. Many to Many



Question Two

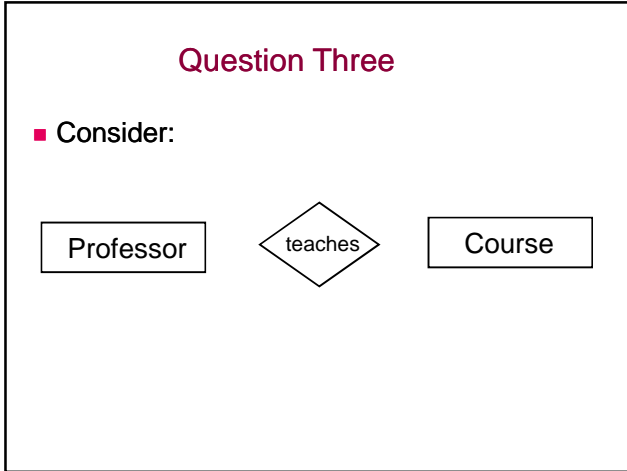
- What is the participation of the entity **Artist** in the relationship “Artist painted Painting”?
- A. Total
- B. Partial
- What is the participation of the entity **Painting** in the relationship “Artist painted Painting”?
- A. Total
- B. Partial

Question Two

- What is the cardinality of the relationship painted between Artist and Painting?
- A. One to One
- B. **One to Many**
- C. Many to One
- D. Many to Many

Question Three

- At a university you have professors who teach courses and courses are assigned to classrooms
- Each professor has a unique faculty ID, first name, last name and an office number.
- Each course has a unique course ID and course name.
- Each classroom has a unique classroom ID, building location, room number and capacity (# of seats)
- Assume that:
 - A professor may not teach any courses
 - A course will have only one professor teaching it
 - All courses are taught in only one classroom
 - Some classrooms are not used
 - Record the day and time for when classes are taught in a classroom



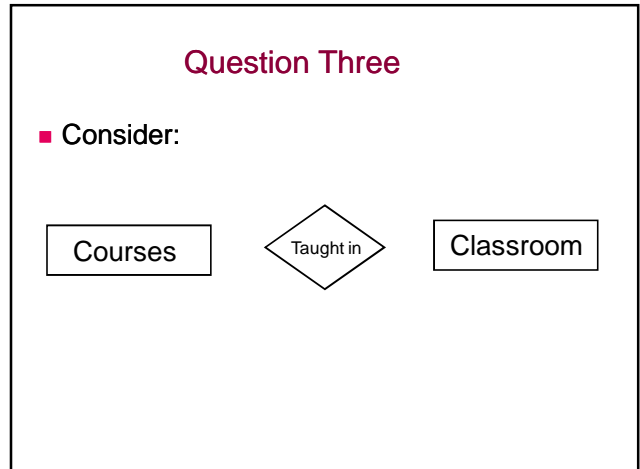
Question Three


■ What is the cardinality of the relationship **teaches** between Professor and Course?

- A. One to One
- B. One to Many**
- C. Many to One
- D. Many to Many

Question Three


- What is the participation of the entity Professor in the relationship “Professor teaches Courses”?
 - A. Total
 - B. Partial**
- What is the participation of the entity Courses in the relationship “Professor teaches Courses”?
 - A. Total**
 - B. Partial






Question Three

- What is the cardinality of the relationship **taught in** between Course and Classroom?
 - A. One to One
 - B. One to Many
 - C. Many to One**
 - D. Many to Many




Question Three

- What is the participation of the entity Course in the relationship "Courses taught in Classroom"?
 - A. Total**
 - B. Partial
- What is the participation of the entity Classroom in the relationship "Courses taught in Classroom"?
 - A. Total
 - B. Partial**



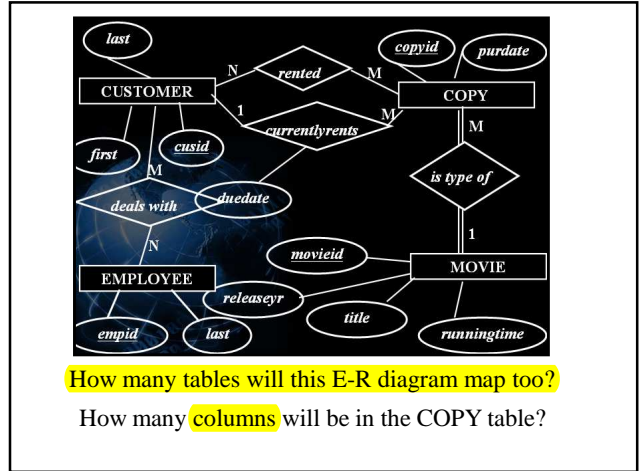
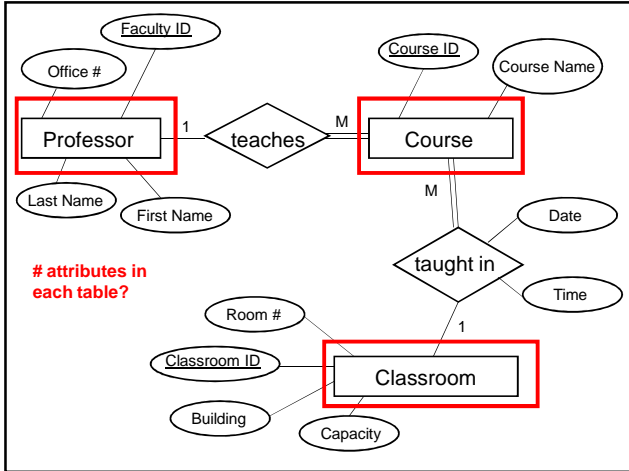
Question Three

- How many attributes would be stored in the Professor table in the relational database?
 - A. Less than 2
 - B. 2
 - C. 3
 - D. 4**
 - E. More than 4



Question Three


- How many tables would be created for this scenario of a university, when the ER Diagram is converted to a relational database in MS Access?
 - A. Less than 2
 - B. 2
 - C. 3**
 - D. 4
 - E. More than 4




Next Question:

- A database is being constructed to hold data about works of art.
- The database will be used by artists, galleries and auction houses to track the current location of the art. The database will hold data about the artist(s) who created the work of art, the current location of the work of art and a single appraisal of the work if an appraisal of the work has been completed.

- When a work of art is completed, the data describing the work is entered into the database.
 - The data will include
 - unique title for the work
 - date the work was completed
 - style of the work
 - textual description of the work.
- Artists may collaborate on works of art or an artist may be the sole creator of the work.
 - If an artist is the sole creator of the work then they are the "primary" creator of the work.
 - If two or more artists collaborate on a work of art, then one of the artists must be selected as the "primary" creator and all other artists involved with the work are considered to be "secondary" artists.
 - Artists are free to enter as many of their works of art as they wish into the database.
 - If an artist is not in the database, then they are entered when the description of their first work is entered.
 - When an artist is added to the database, they are given a unique artist number and they must provide their name and address.

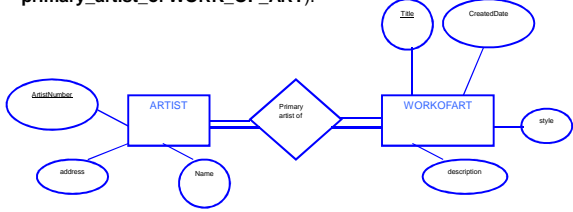


- When a work of art is added to the database, its current location is stored in the database.
 - If the location is not already in the database, then this new location is added when the work of art is added to the database.
 - The location of the work of art includes a unique name for the location, the address and the phone number.
 - The current location of the work must be stored in the database.
 - Locations that are no longer used to house works of art must be removed from the database.
 - If the location of the work is "unknown" then the predefined location name "unknown" is used as the location and the address and phone number values are left blank.



- If the work of art has been appraised, the appraiser will provide the details of the appraisal so they can be entered into the database. These details are
 - unique appraisal number
 - date of the appraisal
 - name of the appraiser
 - value of the work of art.
- It has been determined that the database will contain the following entities:
 - ARTIST – artist(s) who created a work of art
 - WORK_OF_ART – a work of art
 - LOCATION – current location of a work of art
 - APPRAISAL – data describing an appraisal of a work of art
- **Do not add any extra information because of your personal experience.**

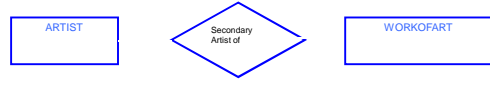
- Consider the relationship **primary_artist_of** that exists between the **ARTIST** entity and the **WORK_OF_ART** entity (**ARTIST primary_artist_of WORK_OF_ART**).



Consider the participation of both the Artist and Work_Of_Art.

What is the cardinality of this relationship?

- Consider the relationship **secondary_artist_of** that exists between the **ARTIST** entity and the **WORK_OF_ART** entity (**ARTIST secondary_artist_of WORK_OF_ART**).



What is the participation of the Artist? Total or **Partial**

What is the participation of the Work_of_Art? Total or **Partial**

What is the cardinality of this relationship?

- one to one
- one to many
- many to one
- **many to many**

- Consider the relationship **located_at** that exists between the **WORK_OF_ART** entity and the **LOCATION** entity (**WORK_OF_ART** located_at **LOCATION**).



What is the participation of the Work_of_Art? **Total** or Partial

What is the participation of the Location? **Total** or Partial

What is the cardinality of this relationship?

- one to one
- one to many
- **many to one**
- many to many

- Consider the relationship **appraisal_of** that exists between the **APPRAISAL** entity and the **WORK_OF_ART** entity (**APPRAISAL** appraisal_of **WORK_OF_ART**).



What is the participation of the Appraisal? **Total** or Partial

What is the participation of the Work_of_Art? Total or **Partial**

What is the cardinality of this relationship?

- **one to one**
- one to many
- many to one
- many to many