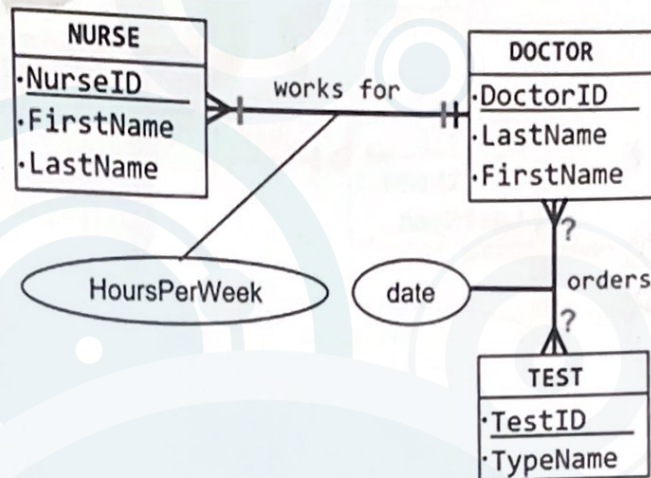


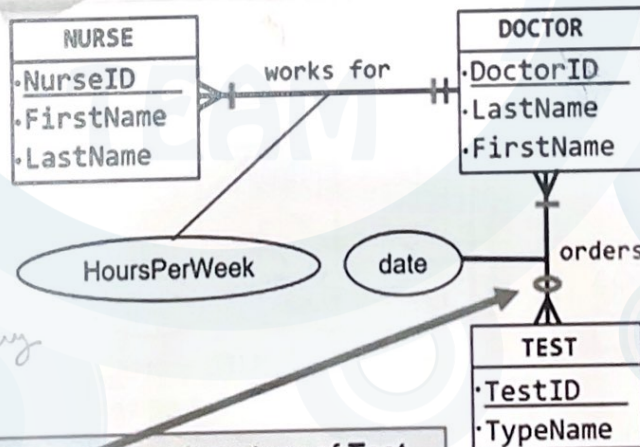
Step 6: Decide on the participation of each entity in each relationship and add if required.

على وجه
الاستشارة
اختياري.



هنا يكون لدينا Cardinality والـ Relationships
عن طريق تحديد Cardinality والـ Participation

Step 6: Decide on the participation of each entity in each relationship and add if required.



one or many

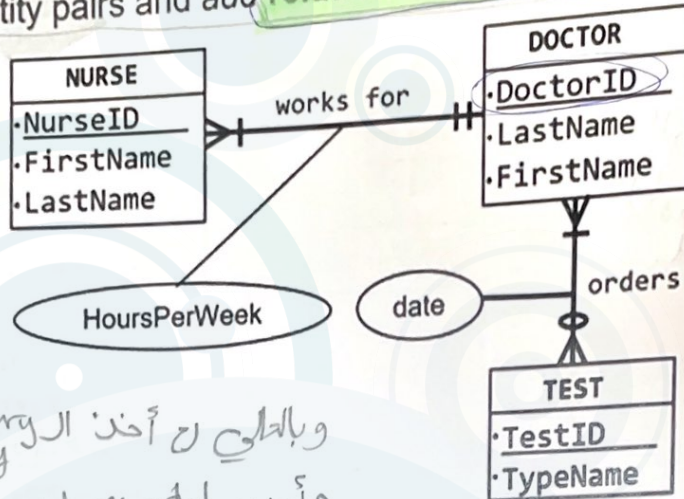
6. Only a Doctor can order a type of Test, but not all Doctors order Tests.

zero or one or many.

STEP 7

Step 7: Add the **foreign keys** of each **relationship** for each entity pairs and add **relationship attributes** if present.

* دائما ال Foreign Keys
بتكون للجهة
إلى ال Cardinality
فيها Many



وبالتالي نأخذ ال Primary Key من دكتور
وأوديعها لك Nurse

كونه كل Nurse لازم تستعمله طبيب واحد فقط
لكي يستعمله! وبالتالي ال Doctor ID هو ال Primary Key
وح ال Foreign Key. ح يفسر

كينا كل Test لازم يكون مطلوب من Dr. واحد
مفيد إني أنقل ال Dr. ID.

STEP 7

Step 7: Add the **foreign keys** of each **relationship** for each entity pairs and add **relationship attributes** if present.

تحديد ال Foreign Keys.

* ال Foreign Keys

لازم تكون

Primary keys entity

في entity

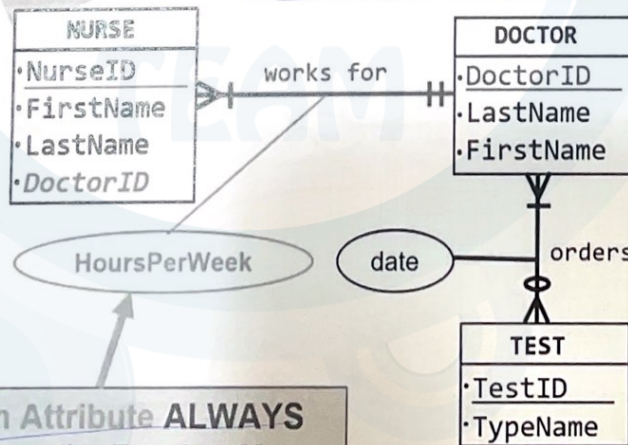
مختلفة عن

ال entity

إني بدو

عليها ال Foreign Keys.

بدخلها ال Attribute
Nurse

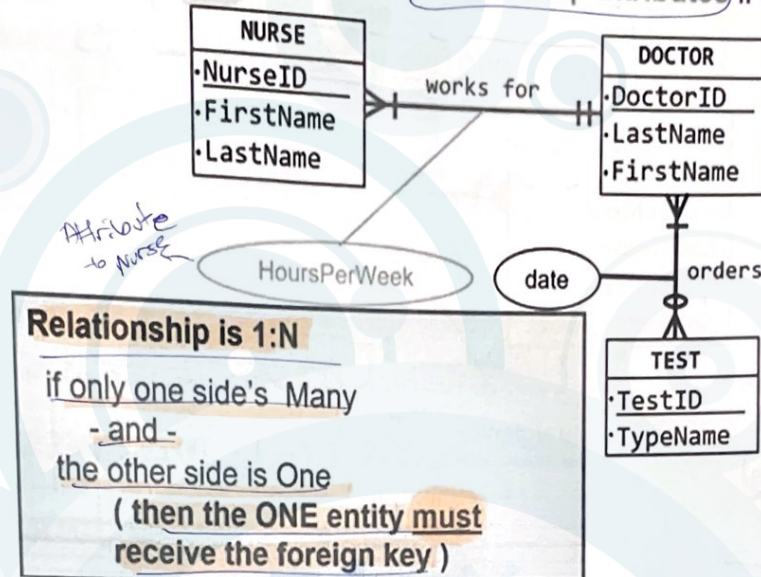


- Relation Attribute ALWAYS follows the Foreign Key

Relation Attribute
دائما يتبع ال Foreign Key

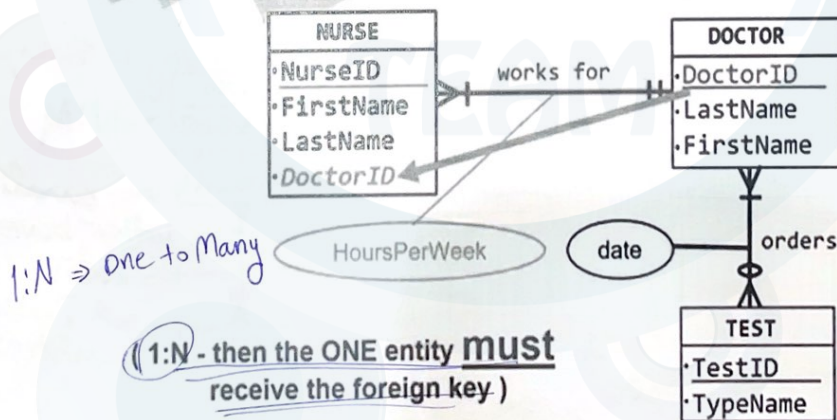
STEP 7

Step 7: Add the foreign keys of each relationship for each entity pairs and add relationship attributes if present.



STEP 7

Step 7: Add the foreign keys of each relationship for each entity pairs and add relationship attributes if present.

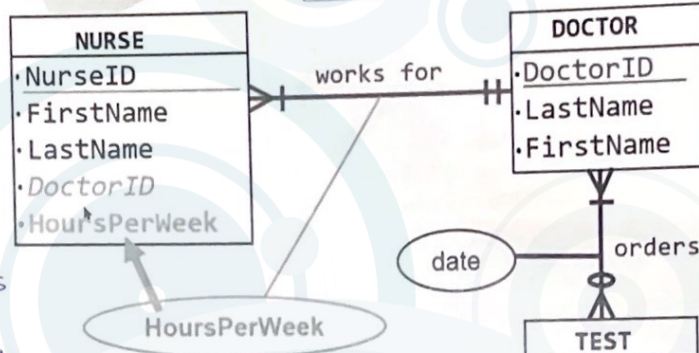


- This is a 1:N connection : so Primary from MANY entity becomes Foreign in the ONE entity

Primary Many.
Foreign one entry.

STEP 7

Step 7: Add the foreign keys of each relationship for each entity pairs and add relationship attributes if present.



Foreign keys

ONE to MANY
Relation

Single entity

Relation Attributes

Foreign Key

So Primary key

Many to DOCTOR

Single entity of the Relation.

Nurse is used

Foreign keys

في حالة وجود

many to ONE, ONE to MANY
Relations

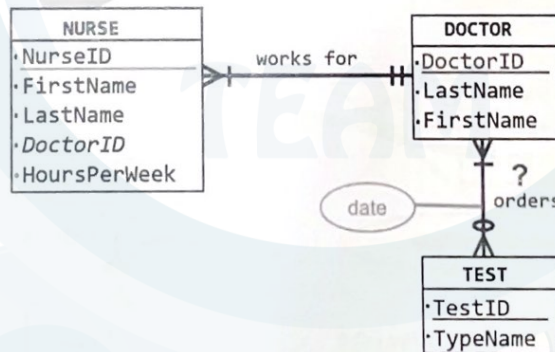
Single entity

Many to many

New entity.

STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).



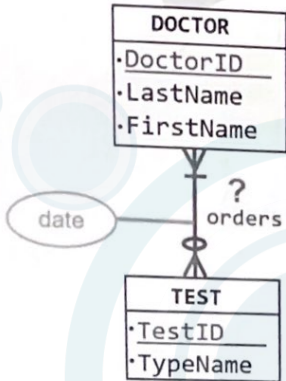
Special case.

Many to Many
= N:M

will be small letter bcz it's NOT Data entities.

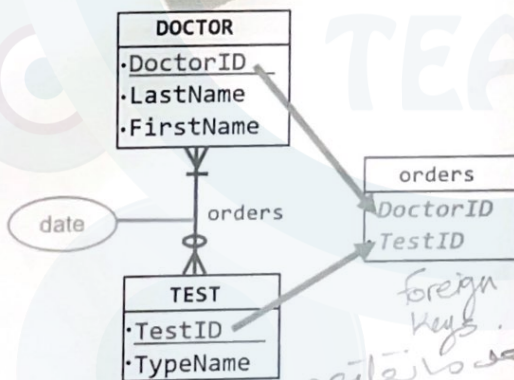
STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).



STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).



I will make New entity.
which is NOT into nor
data entity.

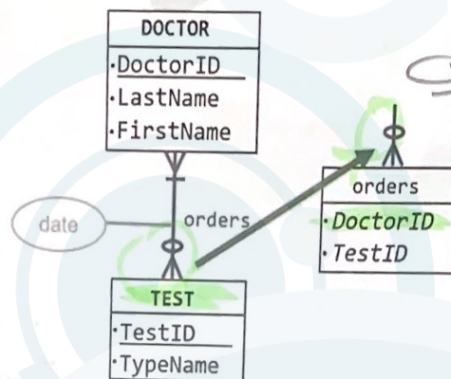
فإنه ليس بهيئة
Small letter!
عنوان أو مزاج
Data entities

foreign
keys.
اجعلها مفصلة

Create new **relationship entity** with **primary keys** from both entities
as **foreign keys** in the new **relationship entity**.

STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).



رح أنقلها بشكل عكسي

Participation
ال
و
cardinality

أي لجهة ال Test

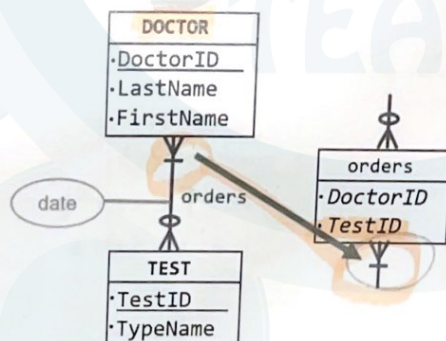
رح تكون الجهة إلى فوق

أي هي جهة الدكتور في حاي ال orders

والل cardinality وال participation لجهة الدكتور رح تسمى لجهة ال Test

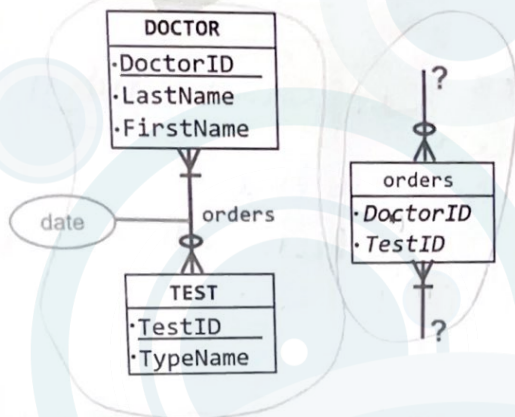
STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).



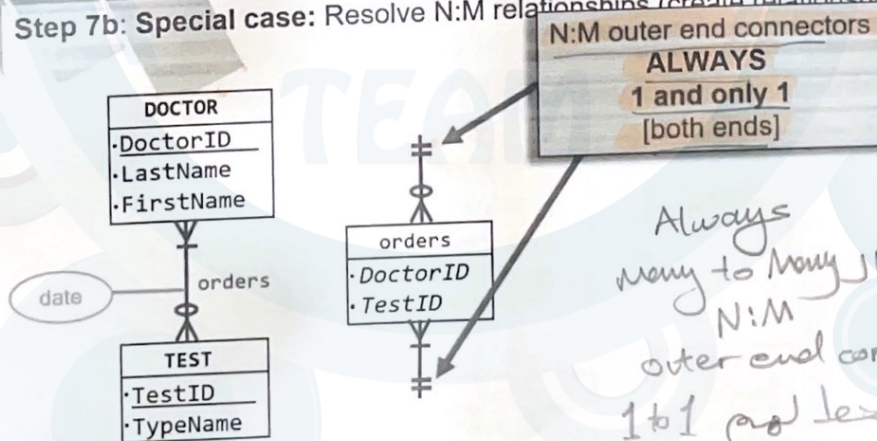
STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).



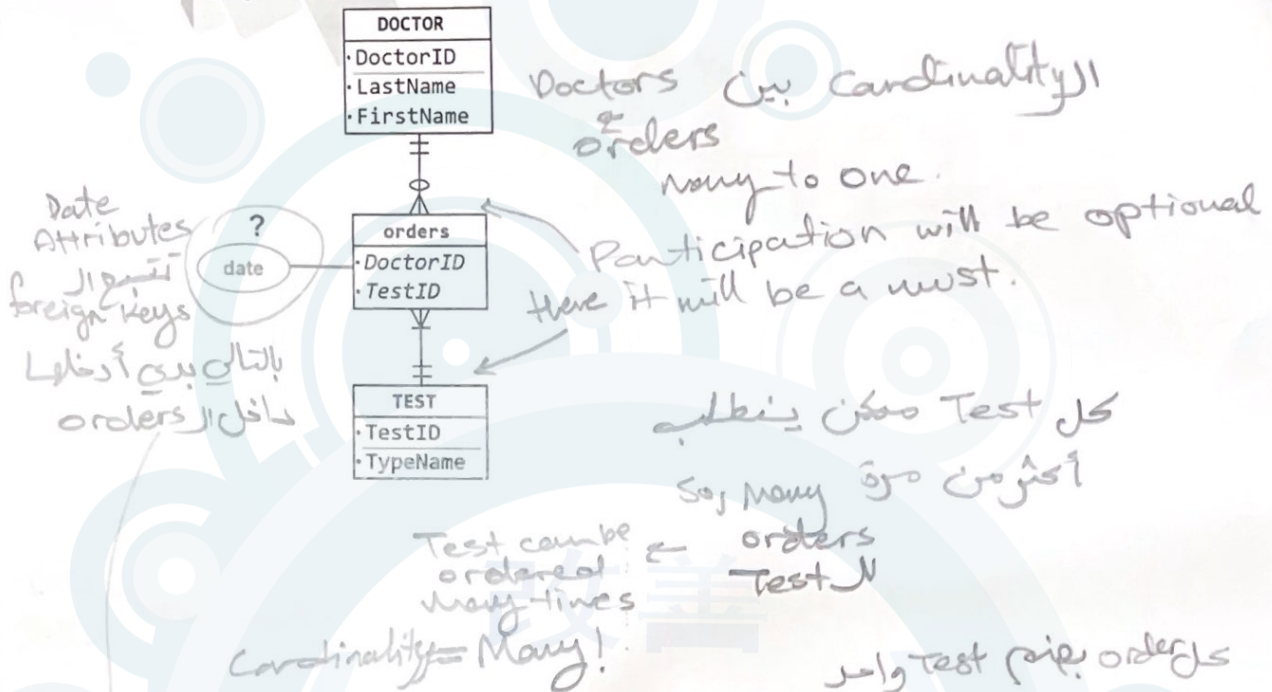
STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).



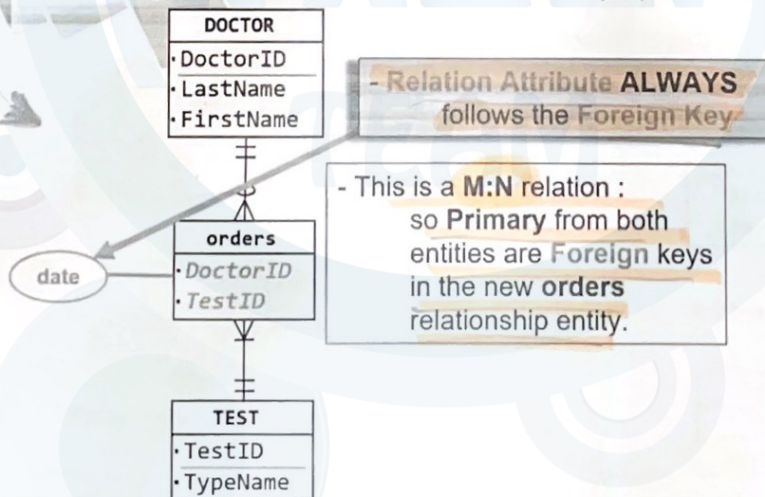
STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).



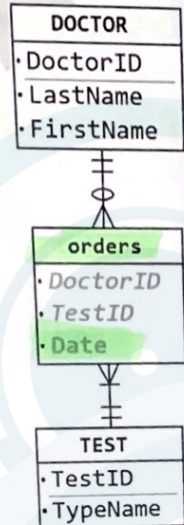
STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).

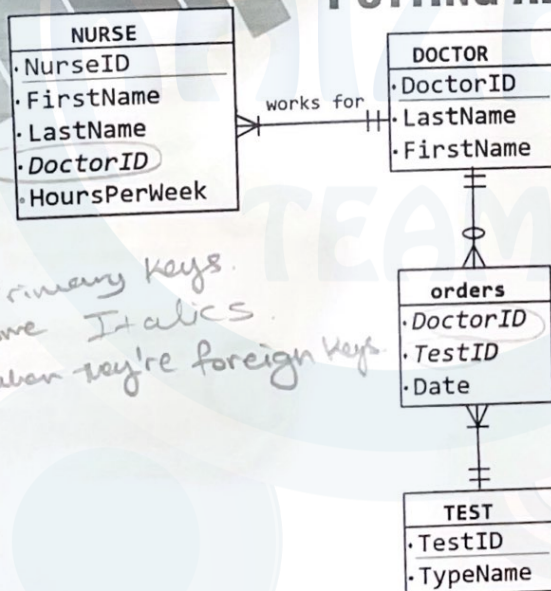


STEP 7B: SPECIAL CASE

Step 7b: Special case: Resolve N:M relationships (create relationship entities).



PUTTING ALL TOGETHER

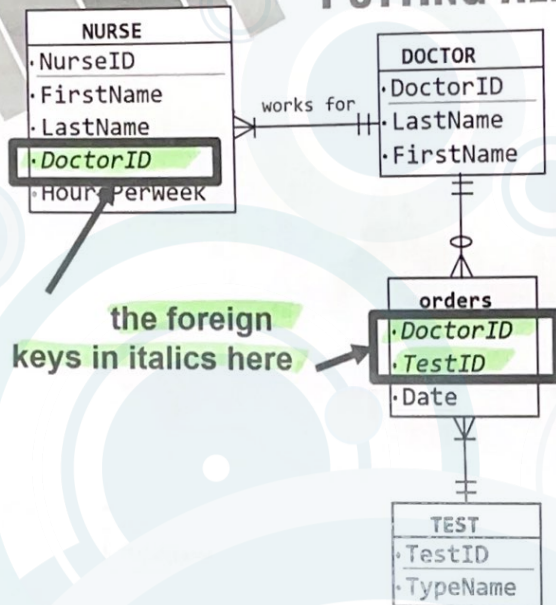


Primary keys become *Italics* when they're foreign keys.

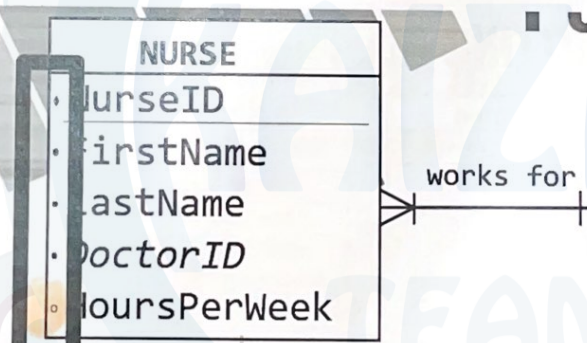
No primary key in orders entity

- Allowed in relationship entities.
- Can have multiple orders for same Doctor and Test.

PUTTING ALL TOGETHER



Attributes & Relations



Primary Key Attribute

Also denotes a primary key.

Required Attribute

Each instances of an entity must have a value of this attribute (e.g. all students must have a name).

Nullifiable Attribute

An instances of an entity may have no value for this attribute (e.g. students are NOT required to have a date of birth).

ممكن يكون موجودة
وممكن ما تكون
Nullifiable Attribute

USAGE

PRIMARY KEYS: (always!)

Nullable (NO) - can NOT be blank (empty)

Unique (YES) - the data can NOT be the repeated

A Primary Key must be filled in and must be unique.

改善

KAIZEN

TEAM