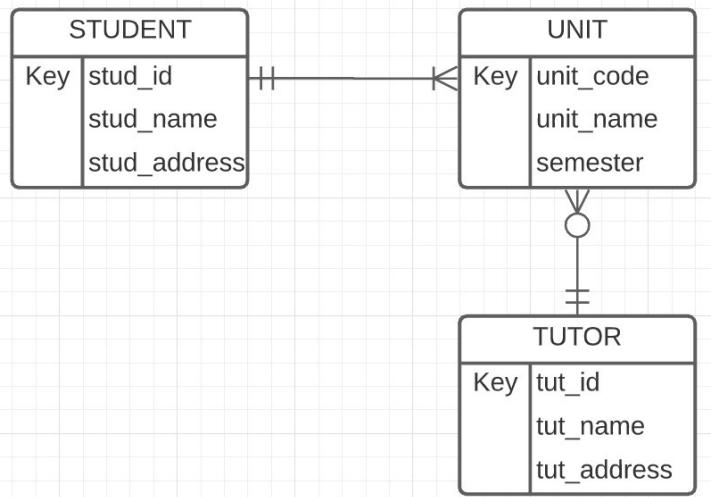


Relational Database?



| Stud_ID | Stud_name | Address |
|---------|-----------|---------|
| 1000 | John | xxx |
| 1001 | David | yyy |

| Unit_code | Unit_name | Semester |
|-----------|-----------|----------|
| FIT9132 | Databases | 1 |
| FIT2004 | Algorithm | 1 |

| Tut_ID | Tut_name | Address |
|--------|----------|----------|
| 2000 | Julian | Monash U |
| 2001 | Amy | Monash U |



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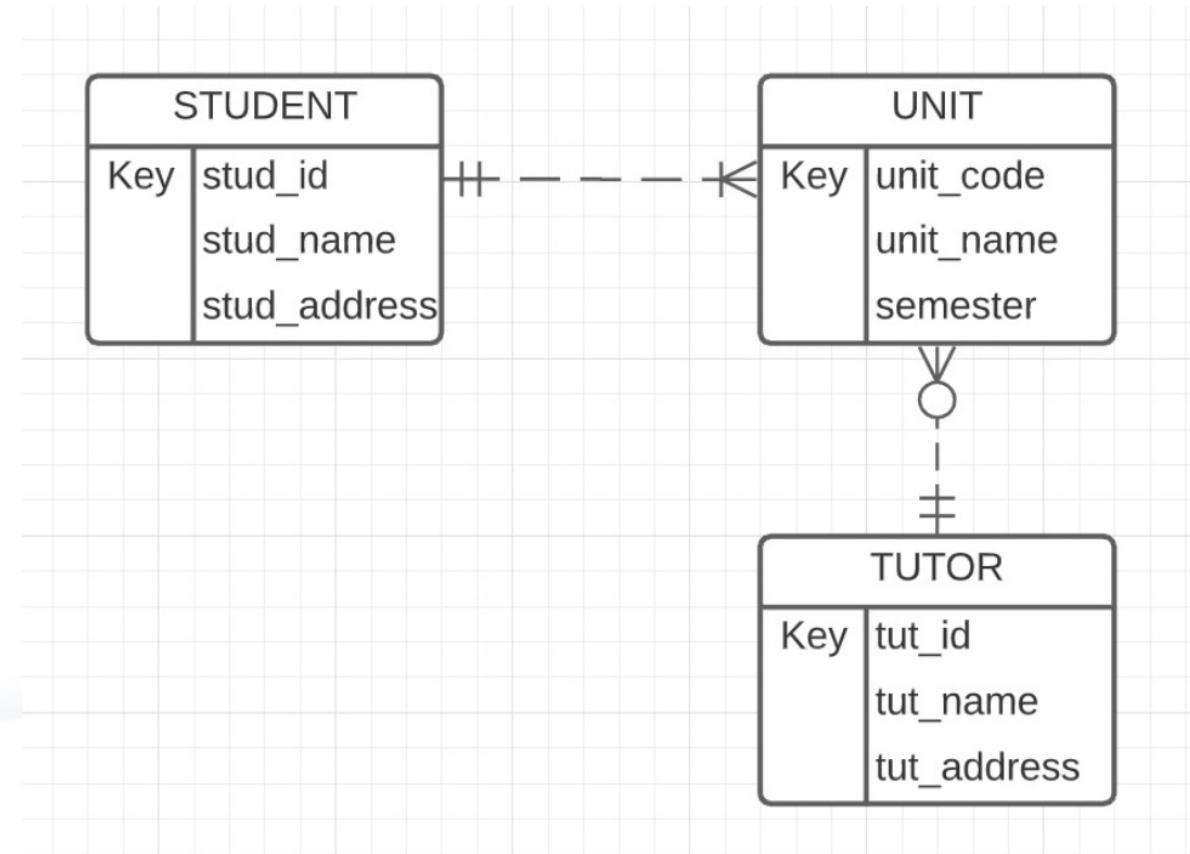
考点1. Element of Databases

重要程度: ★★★
难易程度: ★★

Entity

Attribute

Relationship



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考点1. Element of Databases -- Entity

重要程度: ★★★
难易程度: ★★

- 模型中的数据对象 · 某类事物的集合 · 表格的名字 (**STUDENT, STAFF, COURSE...**)

❖ Strong Entity vs Weak Entity

• Strong Entity

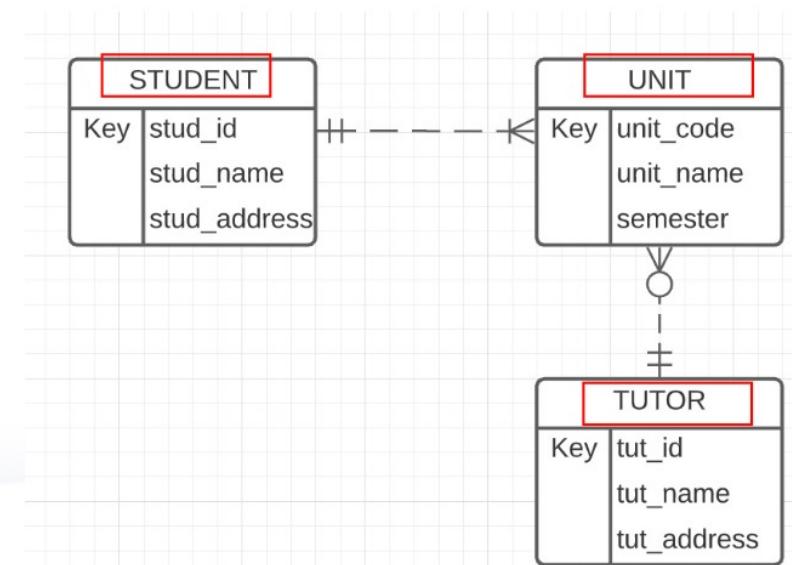
Has a key which may be defined without reference to other entities
 某个entity里所有的key都来源于自己，不需要从别的entity中得到 (conceptual 中的key)

• Weak Entity

Has a key which requires the existence of one or more other entities

Key: 数据库表中对储存数据对象予以唯一和完整标识

某个entity的key是从其他entity中得到 (conceptual 中的key)



考点1. Element of Databases -- Attribute

重要程度: ★★★★
难易程度: ★★

一个entity里的属性，如STUDENT里的studID, studname ...

❖ Types of Attributes

- Simple

Cannot be subdivided 不能被进一步细分
e.g. age, gender...

- Composite

Can be subdivided into additional attributes 可以进一步细分
e.g. address → street, city, state, country (常见)
Name → firstname, lastname (常见)

- Single-valued

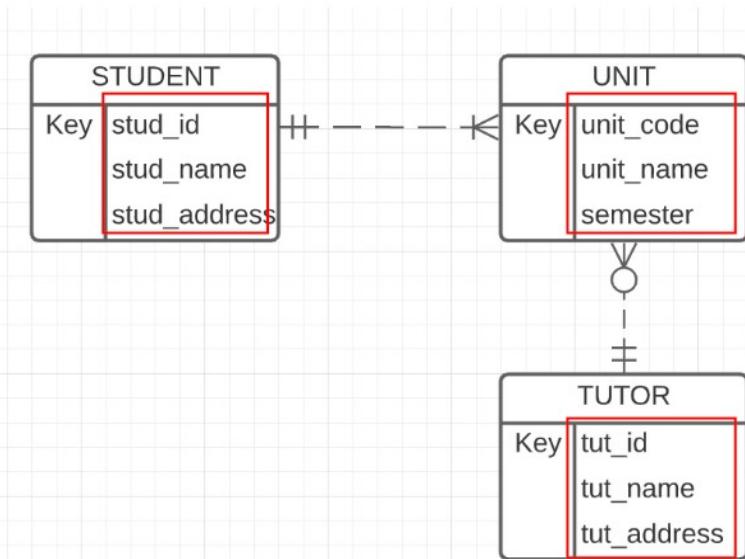
Can have only one value
Each product has one serial number 序列号
Single-valued NOT EQUAL TO simple attributes (But 可以并存)
e.g. serial number(composite & single-valued): CN-001-02-1234 (can be subdivided to each part)

- Multi-valued

Can have many values
e.g. degree (a person may have more than one degree)

- Derived

Can be derived with algorithm
e.g. age can be calculated by dob



考点1. Element of Databases -- Relationship

重要程度: ★★★
难易程度: ★★

- Entity 和 Entity 之间的关系

❖ Identifying Relationship vs Non-Identifying Relationship

• Identifying Relationship

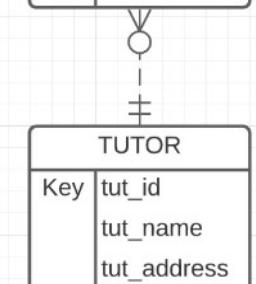
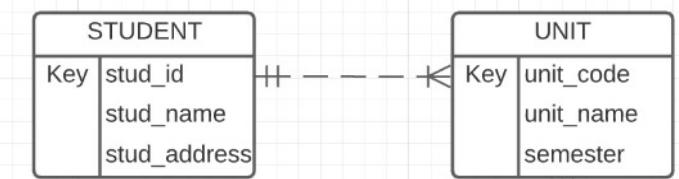


- An Entity(A) supports another entity(B)
- Use solid line (实线)
- ENROLMENT 依赖于 STUDENT & UNIT 存在

• Non-Identifying Relationship



- An Entity does not support another entity
- Use broken line(虚线)
- UNIT, STUDENT, TUTOR 分别独立存在, 不需要依赖对方



重要程度: ★★★★
难易程度: ★★★★☆

考点1. Element of Databases -- Relationship

❖ Relationship Connectivity

| : one

< : many

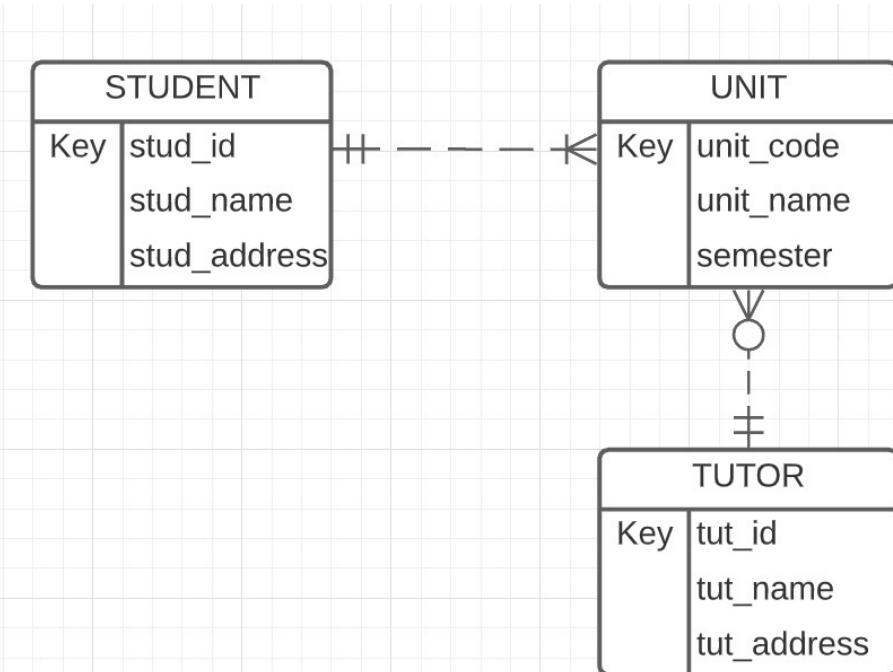
O: zero

||: one and ONLY one

|< : one to many (mandatory)

O|: zero or one (optional)

O< : zero to many (optional)

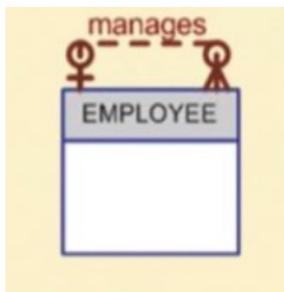


重要程度: ★★★★
难易程度: ★★★★☆

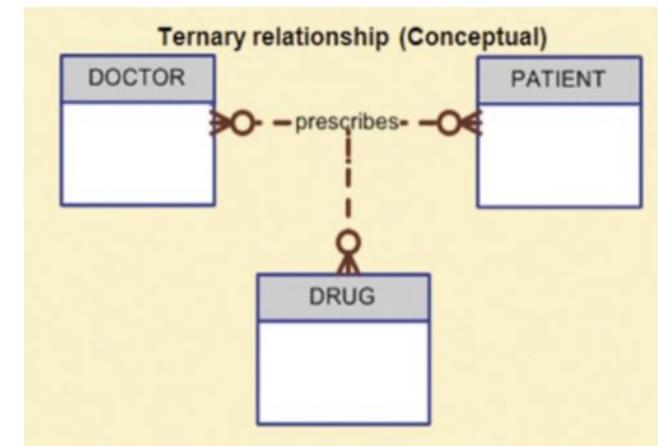
考点1. Element of Databases -- Relationship

❖ Relationship Degree (多少个entity参与了这段关系)

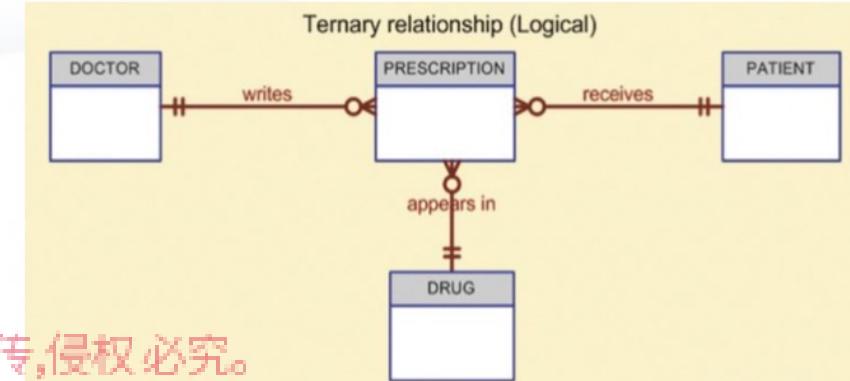
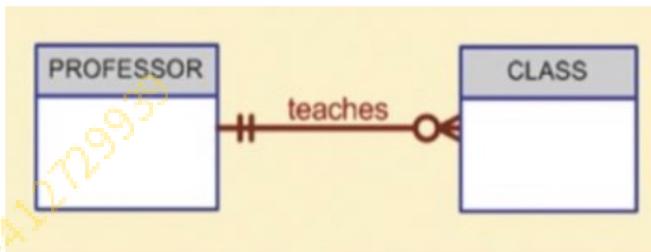
- Unary (only one entity involved)



- Ternary (Three entity involved)

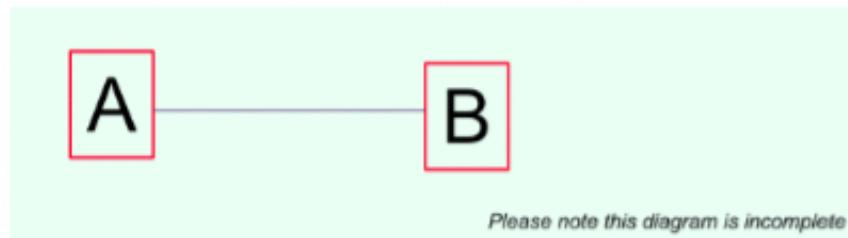


- Binary (Two entity involved)



考点1. Element of Databases -- Relationship

重要程度: ★★★★
难易程度: ★★★★☆



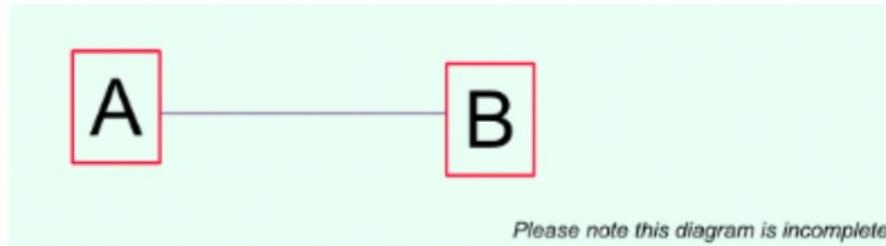
Q1. How many relationships are there in the above diagram?

What is the degree of the relationship/s (the number of entities participating in the relationship/s)?

- 2, binary
- 1, binary
- 3, ternary
- 1, Unary

考点1. Element of Databases -- Relationship

重要程度: ★★★★
难易程度: ★★★★☆



Q1. How many relationships are there in the above diagram?

What is the degree of the relationship/s (the number of entities participating in the relationship/s)?

2, binary

1, binary

3, ternary

1, Unary

Question 5

Answer saved

Marked out of
1.00 Flag question

A _____ attribute is one that cannot be subdivided.

Select one:

- a. single-valued
- b. simple
- c. composite
- d. multivalued

[Clear my choice](#)

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Question 8

Answer saved

Marked out of
1.00

Flag question



According to the above diagram, a new department may NOT have a manager yet. True or False?

Select one:

- True
- False

Question 14

Answer saved

Marked out of
1.00

Flag question



According to the above diagram, how many department may be managed by a lecturer?

Select one or more:

- a. one
- b. many
- c. zero

Question 10

Answer saved

Marked out of
1.00 Flag question

A _____ attribute can be further subdivided to yield additional attributes.

Select one:

- a. simple
- b. single-valued
- c. multivalued
- d. composite

Question 6

Answer saved

Marked out of
1.00 Flag question

A _____ relationship exists when an association is maintained within a single entity.

Select one:

- a. unary
- b. ternary
- c. weak
- d. strong

[Clear my choice](#)

Question 7

Answer saved

Marked out of
1.00

Flag question

| Lecturer | |
|----------|--------------|
| Key | lect_id |
| | lect_name |
| | lect_address |
| | lect_phone |

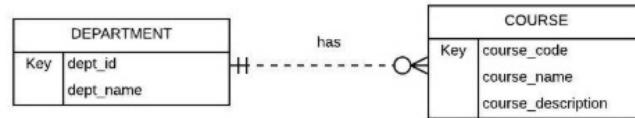
According to the above diagram, which attribute(s) could be the composite attribute(s)?

Question 15

Answer saved

Marked out of
1.00

Flag question



According to the above diagram, a COURSE belongs to ____ DEPARTMENT(s)

Select one:

- a. many
- b. one
- c. one or many
- d. zero or one

重难点总结

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重难点总结

重要程度: ★★★★
难易程度: ★★★★★

- Entity (Strong Entity vs. Weak Entity)
 - Strong Entity (key来源于自己)
 - Weak Entity (key从别的entity拿来的)

- Attribute
 - Simple (gender, height...)
 - Composite(address, fullname...)
 - Single-Value (id, unit code...)
 - Multi-Value(degree, skill, color...)
 - Derived (age, total price...)

- Relationship (number of Relationship vs. Relationship Degree)

- Number Of Relationship: entity之间存在多少个关系
- Relationship Degree: 有多少entity参与了某段关系

- Relationship Connectivity:

O: Zero

|: One

<: Many

O|: zero or one

O<: zero to many

|<: one to many

||: one and only one

