Schema Design

Agenda

- what is SD
- how to approach SD
- Cardinality

- Sparse Relations
- Nuances in representing Relation

Schema

- refers to Structure of DB

Tables ?
columns ?
Primary Key ?
Foreign Key ?
Indexes ?
Pictorial Rep

Design Document :
↳ "schema"

Scaler

The requirements are as follows:
Comment
Edit from here

1)
2) Scaler will have multiple batches.
For each batch, we need to store the name, start month and current
3) instructor.
4) Each batch of Scaler will have multiple students.
5) Each batch has multiple classes.
6) For each class, store the name, date and time, instructor of the class.
For every student, we store their name, graduation year, University
7) name, email, phone number.
8) Every student has a buddy, who is also a student.
A student may move from one batch to another.
9) For each batch a student moves to, the date of starting is stored.
10) Every student has a mentor.
11) For every mentor, we store their name and current company name.
12) Store information about all mentor sessions (time, duration, student,
13) mentor, student rating, mentor rating).
For every batch, store if it is an Academy-batch or a DSML-batch.

Step-1 Create the tables

1) Find out nouns

2) Do i need info / attributes about that noun

3) if yes, create the table

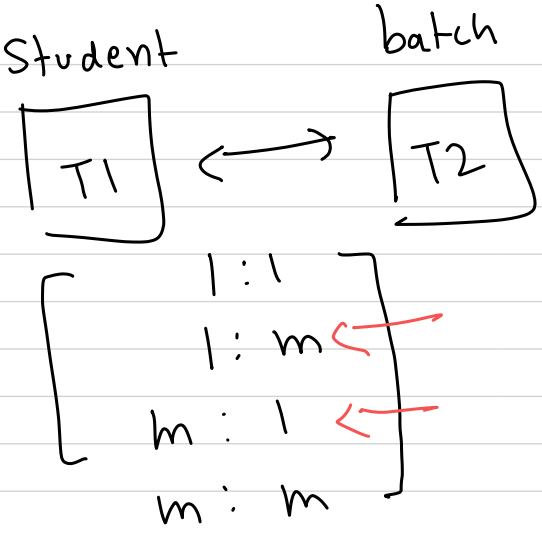
batch

Student

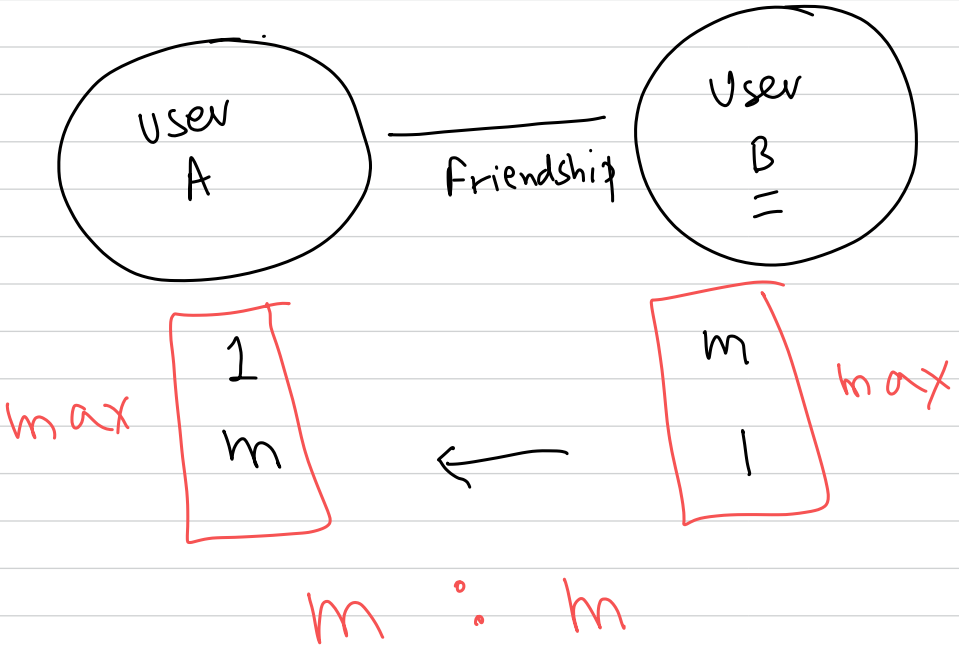
class

instructor

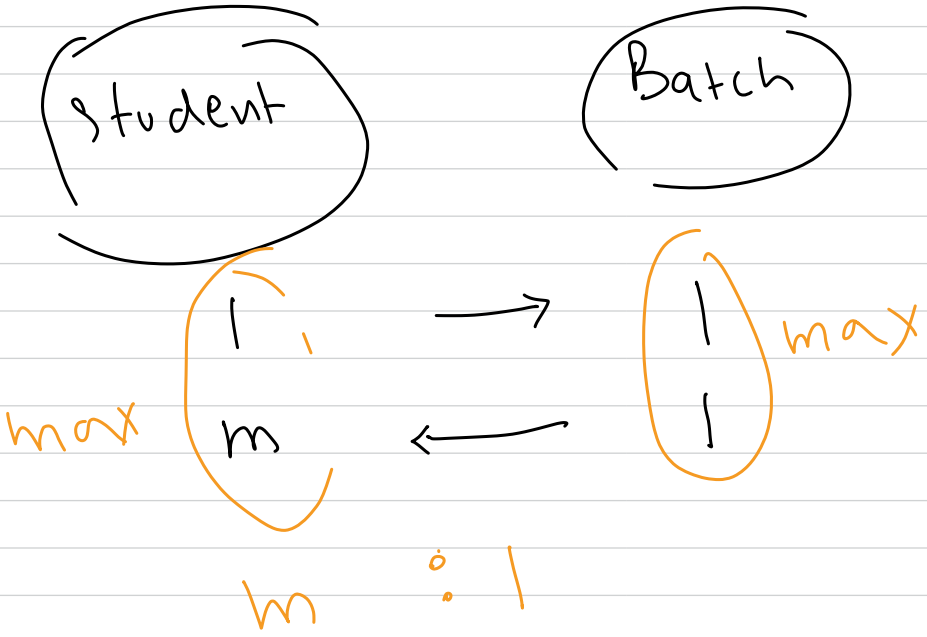
Cardinality



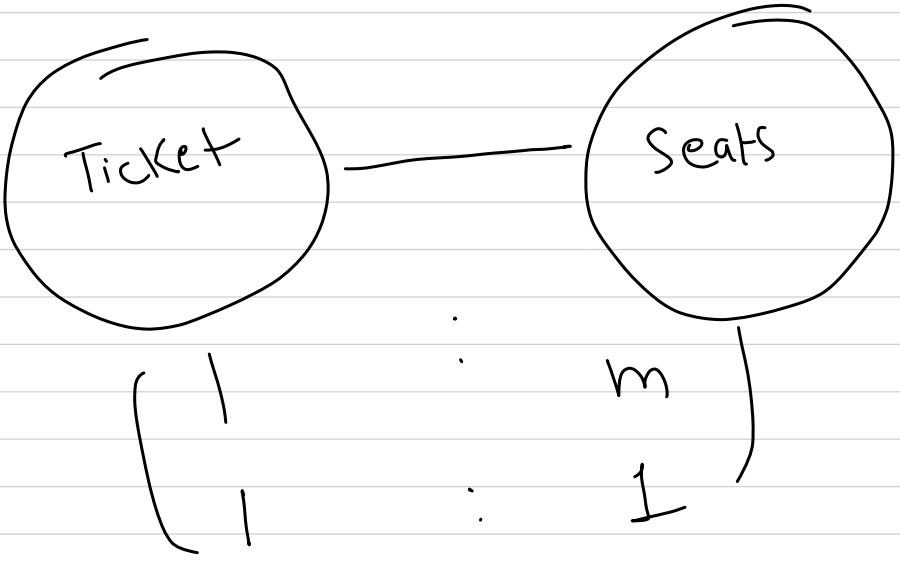
Ex-1

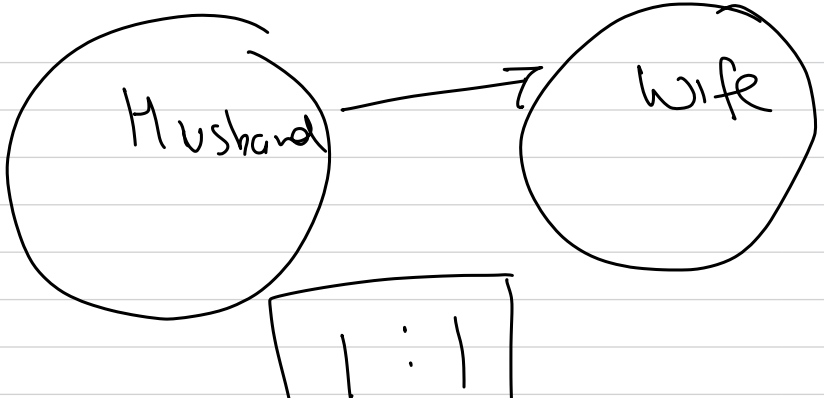


Ex-2



Ex-3

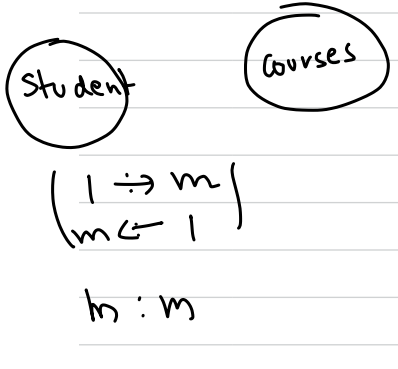




In a university system, each student can attend various courses during their academic tenure. Simultaneously, courses can be taken by different students every semester. What's the relationship between `Student` and `Course` in terms of cardinality?

31 users have participated

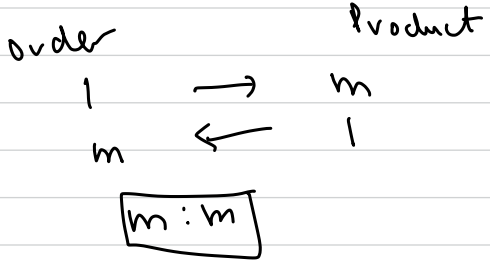
A	One-to-One	3%
B	One-to-Many	29%
C	Many-to-One	23%
D	Many-to-Many	45%



Considering an e-commerce platform, when a customer places an order, it may contain several products. Many people order popular products. Can you identify the cardinality of the `Order` to `Product` relationship?

31 users have participated

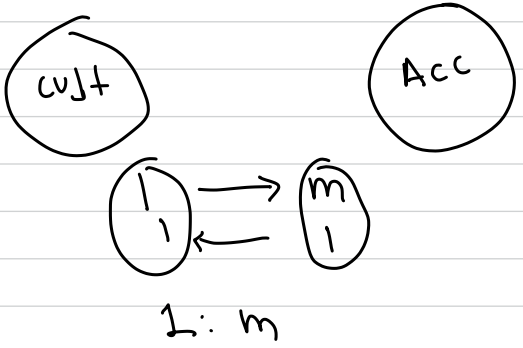
A	One-to-One	3%
B	One-to-Many	29%
C	Many-to-One	6%
✓ D	Many-to-Many	61%



In a banking application, a customer might have several accounts (like savings, checking, etc.) but each of these accounts can only be owned by a single customer. What type of cardinality does the `Customer` to `Account` relationship exhibit?

28 users have participated

	A	One-to-One	11%
✓	B	One-to-Many	64%
	C	Many-to-One	11%
	D	Many-to-Many	14%

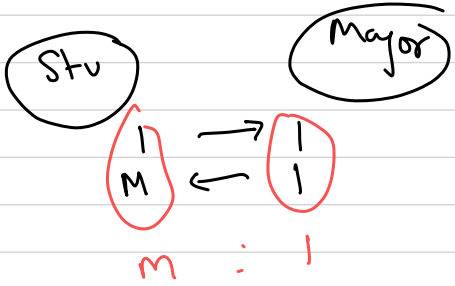


LMKQSOO

In an educational institution, a student opts for a major subject. This subject might be the choice of several students, but a student cannot major in more than one subject. How would you describe the cardinality between `Student` and `Major`?

32 users have participated

	A	One-to-One	3%
	B	One-to-Many	25%
✓	C	Many-to-One	66%
	D	Many-to-Many	6%



how to represent cardinality

10:20

(1)

id of any one side can be used as altkey on other side.

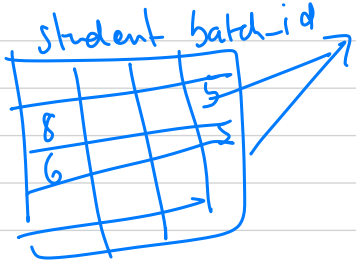
(2) Many to one or 1 : many

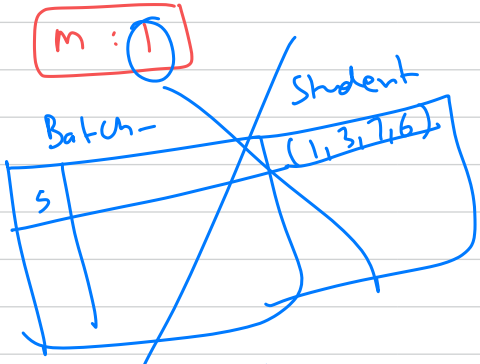
m : 1

Student ↔ Batch

1 → 1

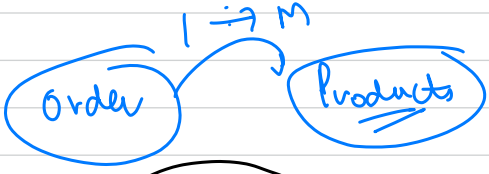
m ← 1





id of 'one' side goes on many side.

(3) Many to Many

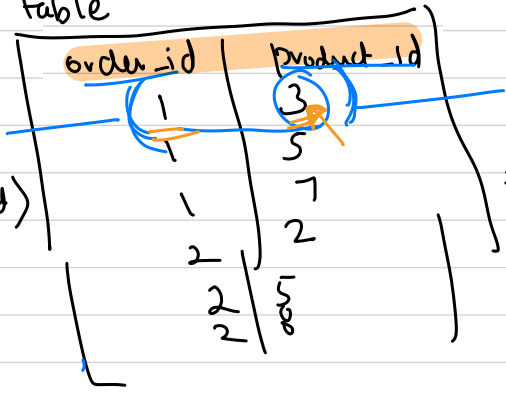


1 → n
M ← 1

m : m

1. (3, 5, 7)
2. (2, 5, 8)
3. (1, 5, 7)

Additional table



Ideal:

Idéal (orderId, product_id)

Idéal (product_id)

Camara

=> (order_id, product_id)