DB

Relational database

Self-introduction

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Year II (semester 1)
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Keys To Pass Relational Database Course

Course name	RELATIONAL DATABASE				
Number of session	Theory	Practice	Examination		Projects
	12 session	**16** session	**Midterm** 1 session	**Final** 2 session	2 projects 1 week each

Participation in class	**10%**
Activity /homework/quiz	**15%**
Midterm exam	**25%**
Final exam	**50%**

OBJECTIVES FOR TODAY

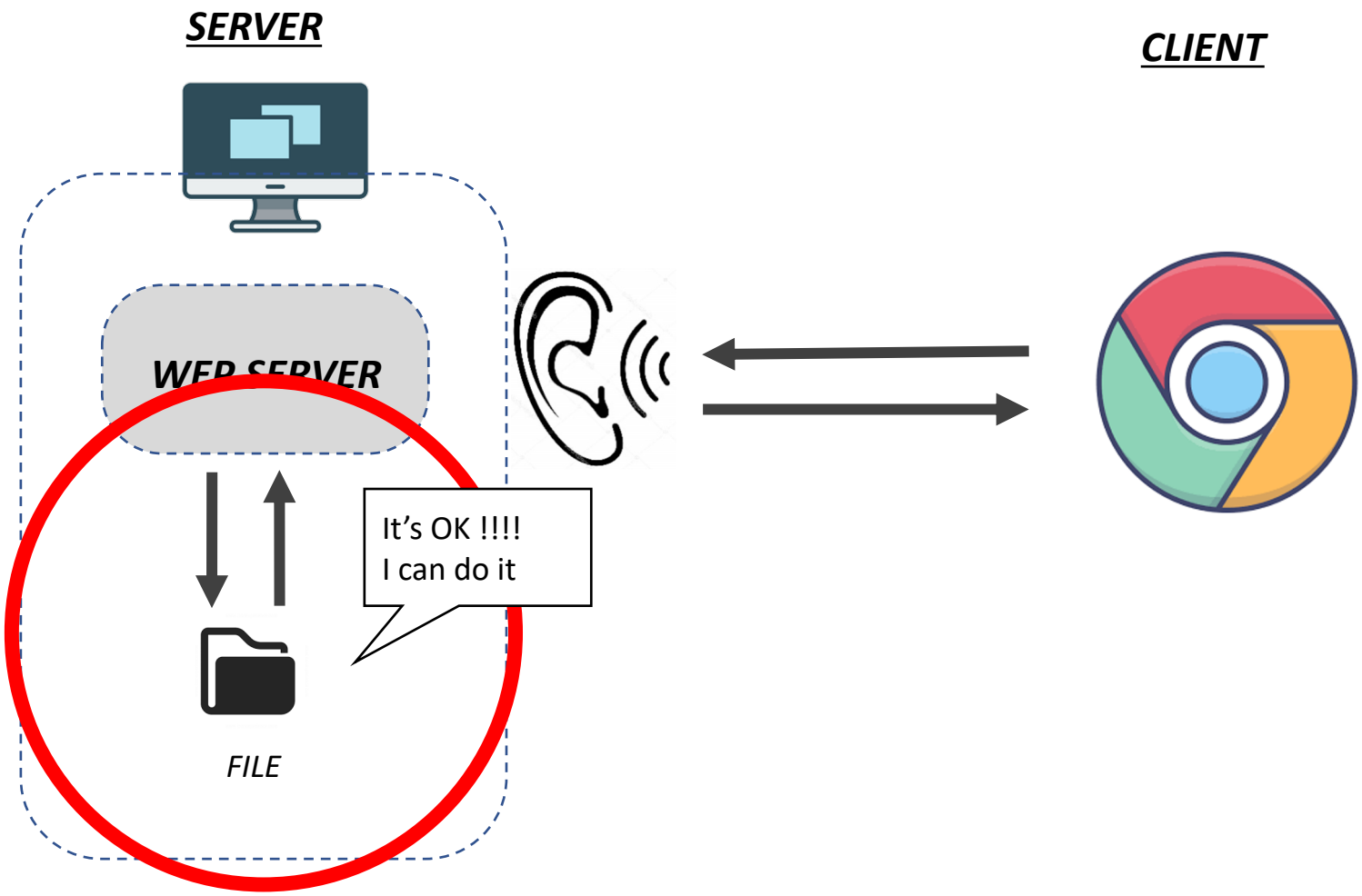
What are the benefits of **relational database**

what is an **entity**, what is an **attribute** of entity ?

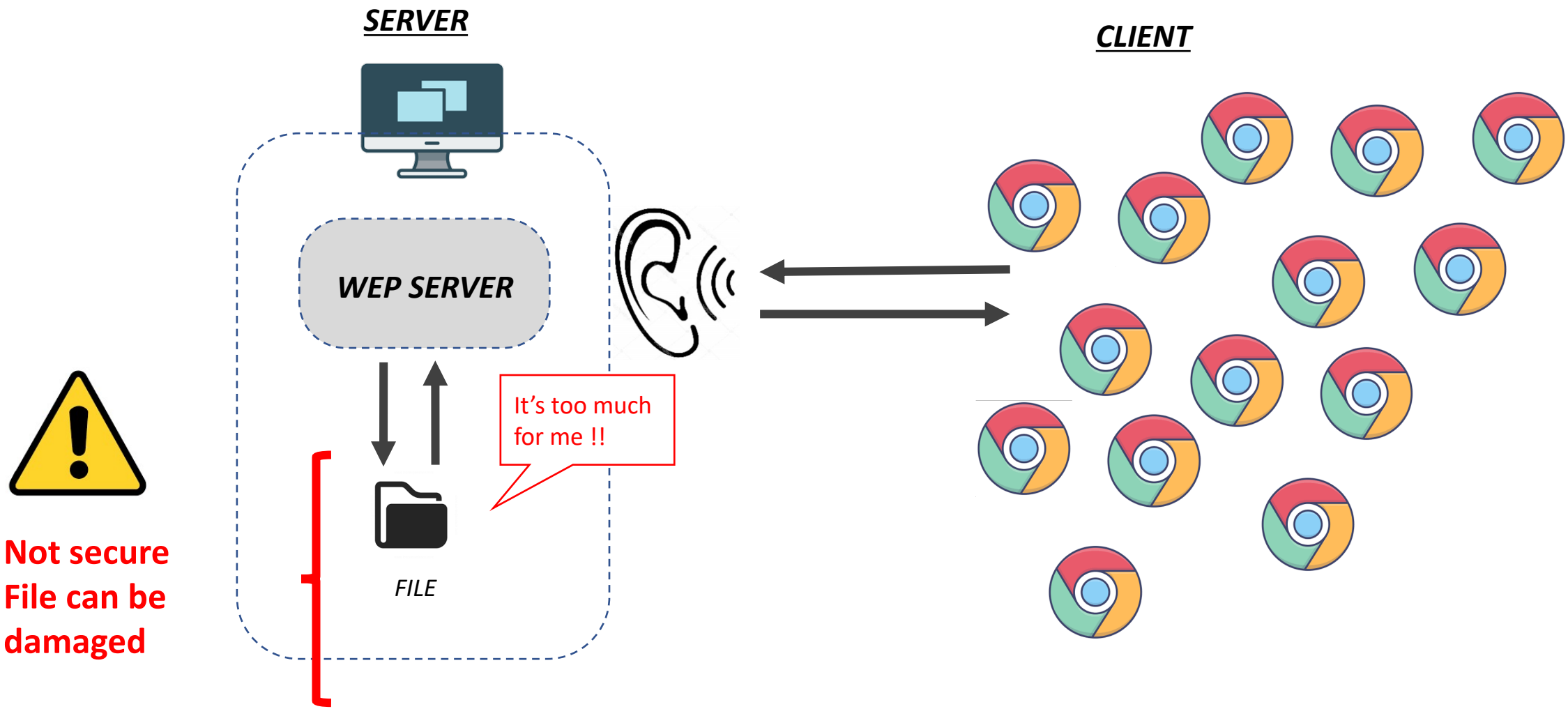
Be able to define the **types** of your **attribute**

Understand the **relation** **one-many** between entities

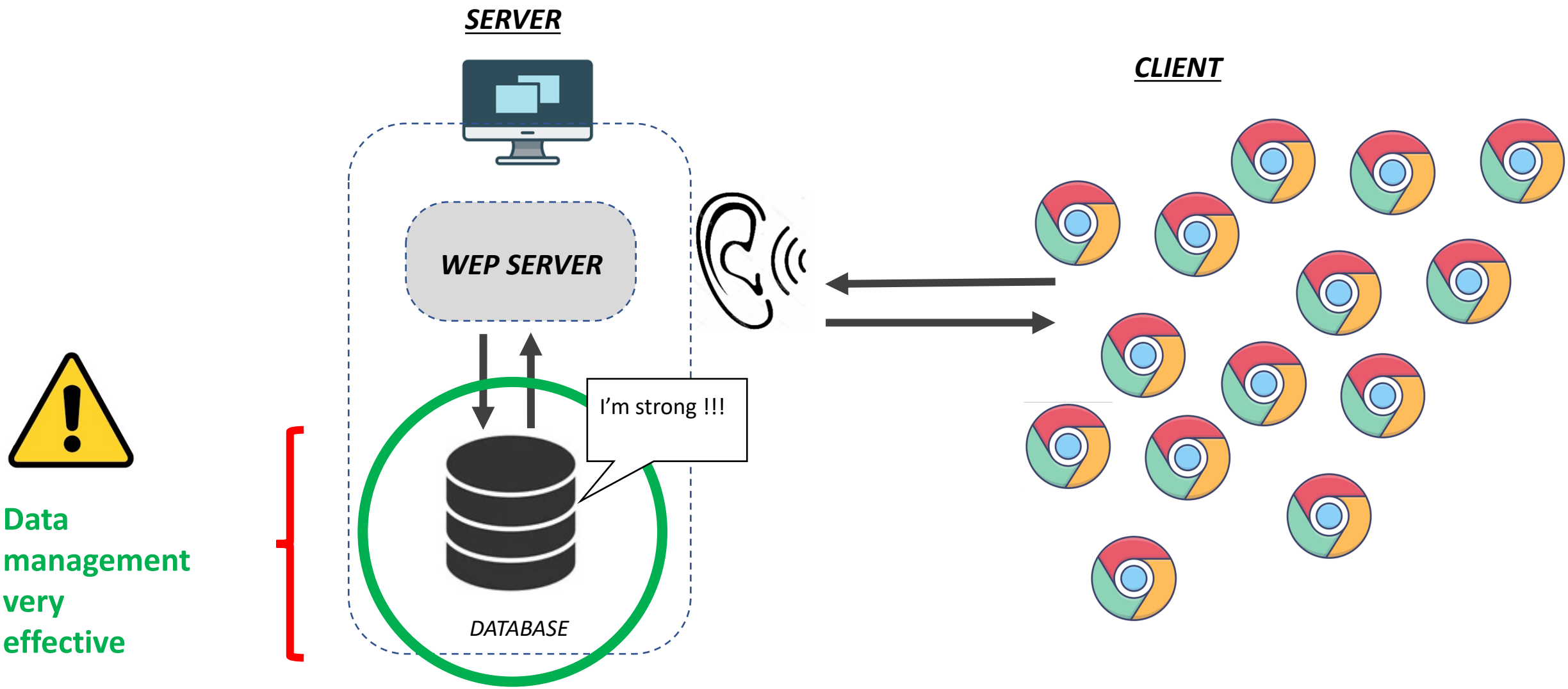
So far: to store data on server, you are using a file



But with hundreds or millions of user : you will face problems !!



New way to store data: a relational database



Relational Database Management Systems…

…used by the bests:

BATCH 2021

How can we describe a student ?

STUDENT
… … … …

A table schema describes an entity and its attributes

Table **schema**

STUDENT

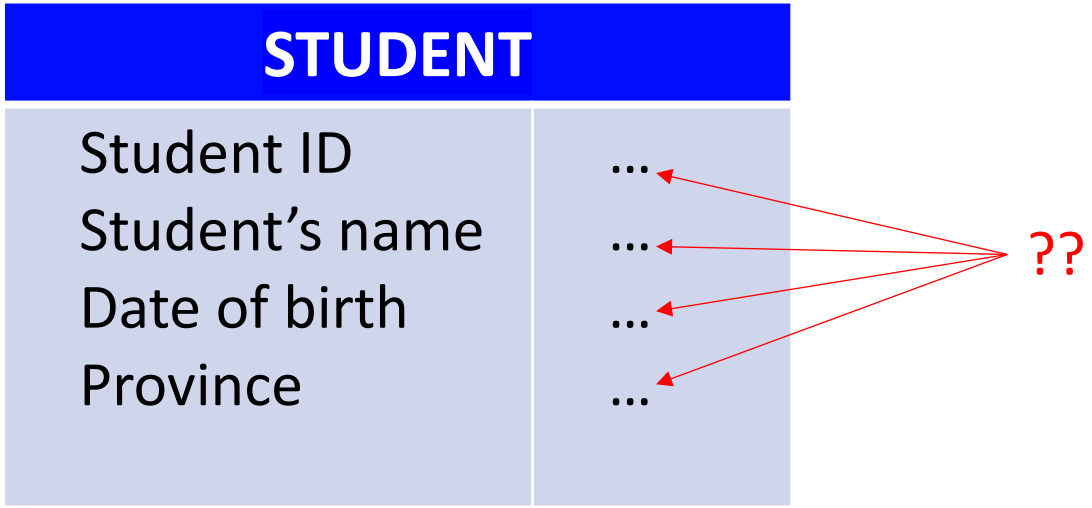
Student ID
Student Name
Date of birth
Province

A student is an **entity**

The **attributes** describes the students

ACTIVITY 1 05 MIN

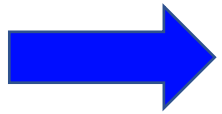
What is the type of each attributes ?



- **STRING ?**
- **NUMERIC ?**
- **DATETIME ?**

From schema to table

CLASSROOM	
Classroom ID	numeric
Section	numeric
Year	string
Department	



classroom ID	section	year	department
1	A	2	WEP
2	B	2	WEP
3	A	2	SNA
4	A	1	GENERAL
5	B	1	GENERAL
6	C	1	GENERAL

A table is a list of records

Columns are attributes

Row are records

Classroom ID	Section	Year	Department
1	A	2	WEP
2	B	2	WEP
3	A	2	SNA
4	A	1	GENERAL
5	B	1	GENERAL
6	C	1	GENERAL

Synonyms

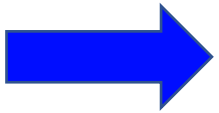
Table	Row	Column
Relation	Record	Attribute

ACTIVITY 2

10 MIN

Complete the following table with examples of student's data:

STUDENT	
Student ID	numeric
Student Name	string
Date of birth	DateTime
Province	string



Student ID	Student Name	Date of birth	Province

Relation between student and classroom tables

STUDENT
Student ID
Student Name
Date of birth
Province

CLASSROOM
Classroom ID
Section
Year
Department

Relation between student and classroom tables

STUDENT
Student ID
Student Name
Date of birth
Province

CLASSROOM
Classroom ID
Section
Year
Department

- ✓ Every students has **one** classroom
- ✓ One classroom has **many** students

ACTIVITY 3

15MIN

STUDENT

Student ID	Student Name	Date of birth	Province	Classroom ID
1001	Lyhour	XX	XX	2
1002	Kunthy	XX	XX	1
1003	Chum	XX	XX	2
1004	Sauth	XX	XX	6
1005	Cham	XX	XX	4
1006	Smey	XX	XX	5
1007	Ravy	XX	XX	5

CLASSROOM

Classroom ID	Section	Year	Department
1	A	2	WEP
2	B	2	WEP
3	A	2	SNA
4	A	1	GENERAL
5	B	1	GENERAL
6	C	1	GENERAL

1. How many students are in the 2nd year WEP A classroom?
2. In what classroom is Srey Haem?
3. How many students are in SNA?
4. How many students are in first year?

STUDENT

Student ID	Student Name	Date of birth	Province	Classroom ID
1001	Lyhour	XX	XX	2
1002	Kunthy	XX	XX	1
1003	Chum	XX	XX	2
1004	Sauth	XX	XX	6
1005	Cham	XX	XX	4
1006	Smey	XX	XX	5
1007	Ravy	XX	XX	5

CLASSROOM

Classroom ID	Section	Year	Department
1	A	2	WEP
2	B	2	WEP
3	A	2	SNA
4	A	1	GENERAL
5	B	1	GENERAL
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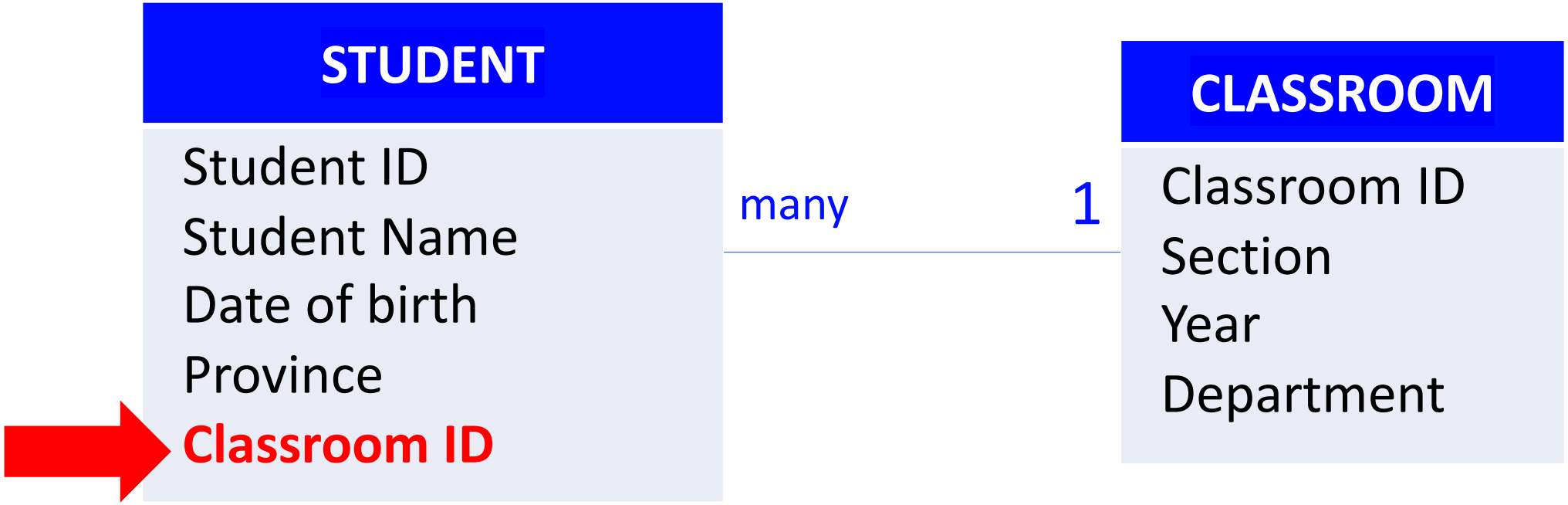
One to many relation



Each student keeps the ID of the classroom he/she belong too

SO KNOW CAN YOU ANSWER ?

What are the benefits of **relational database**

what is an **entity**, what is an **attribute** of entity ?

Be able to find the **types** of your **attribute**

Understand the **relation** **one-many** between entities