


Agenda

KEYS

Students

id	Name	Email	Phone No	psp
?	Rahul	X	=	
?	Naman			
?	Deepak			
?	Rahul	Y	=	

Search psp of
"Rahul"

Using name, a row can't be identified uniquely.

- Cols
- { id } CK
 - { email } CK
 - { phone No } CK
 - { email, phone No } NO

super-key

- {email, ~~name~~} NO
- {phone, ~~marks~~} NO
- {~~name~~, email, ~~marks~~} NO

Table
Quiz-1

Student

- A) {studentID, courseID} *unique*
- B) {First N, Last N} X
- C) {CourseID, Student Age} X
- D) {LastName, courseID}

Kr 29

Kr 28

28

ML101

superkey must include an attribute or a set of attributes that uniquely identifies the record.

Quiz-2

A) { Student Id, Name }

B) { Name, email }

C) { Name, ps p }

D) { Name, phone No, ps p }

A, B, D correct
Super-keys

% Attendance of every student in every class

Student_id	Class_id	attendance
1	SQL01	70%
→ 1	<u>SQL02</u>	80%
2	SQL01	60%
→ 2	<u>SQL02</u>	40%

~~student_id~~
~~class_id~~

→ { student_id, class_id }

→ { student_id, class_id, attend }

CK SK
Yes Yes
No Yes

Agenda

- ✓ Super Key (Theory)
- ✓ Candidate Key (Theory)
- ✓ Primary Key (code)

✓ Foreign Key (code)

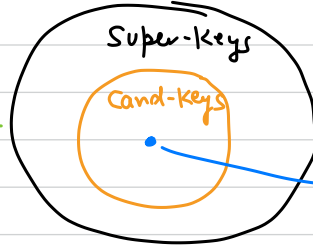
✓ Composite Key [Term]

= Installation MySQL

FK constraints

Candidate Key - it is a Key from which no cols can be removed so that we can uniquely identify a row. subset of super-keys.

↓
No un-necessary
cols are
there in
C.K.



Exactly 1 Primary keys

All CK are SK : Yes

All SK are CK : No

Quiz time!

Time Left: 0s

Which of the following is a Candidate Key for the Employee table?

37 users have participated

			SK	CK
X	A	{EmployeeID, Department}	32% Yes	NO
✓	B	{Email}	68% Yes	yes
X	C	{FirstName, LastName}	0% -	-
X	D	{LastName, Department}	0% -	-

End Quiz Now

if you can remove atleast 1 col \rightarrow No

Quiz

		<u>SK</u>	<u>CK</u>
\rightarrow A	{ <u>EmployeeId</u> , <u>Email</u> }	Yes	<u>No</u>
B	{ <u>EmpId</u> }	Yes	Yes
C	{ <u>Email</u> }	Yes	Yes
<u>D</u>	<u>B & C</u>		

PRIMARY KEY

\hookrightarrow one key out of many possible will be chosen as "Primary key" of table.

\hookrightarrow it is one of the CK's.

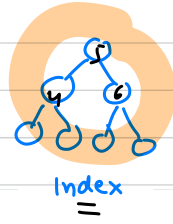
Good Primary Key:

1) Fast to sort upon. Data by default is sorted acc to PK.

	<u>SK</u>	<u>CK</u>	<u>PK</u>
{ student-id }	<u>✓</u>	<u>✓</u>	<u>✓</u> <u>fast</u>
{ email }	<u>✓</u>	<u>✓</u>	<u>✗</u>

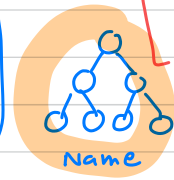
2) small size & should never change

60-80
Range
queries
==



Pk	id	Name
1	1	
2	2	
3	3	
4	4	
5	5	

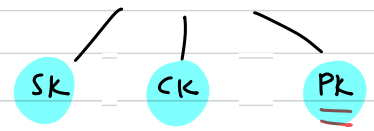
Table



[Every Table creates
an index on PK.]

- Size of index depends upon size of key.
 - if Key is modified then index also needs to be modified
- ↓
slow

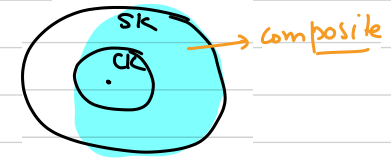
Composite Key ⇒ Any Key which more than one col.



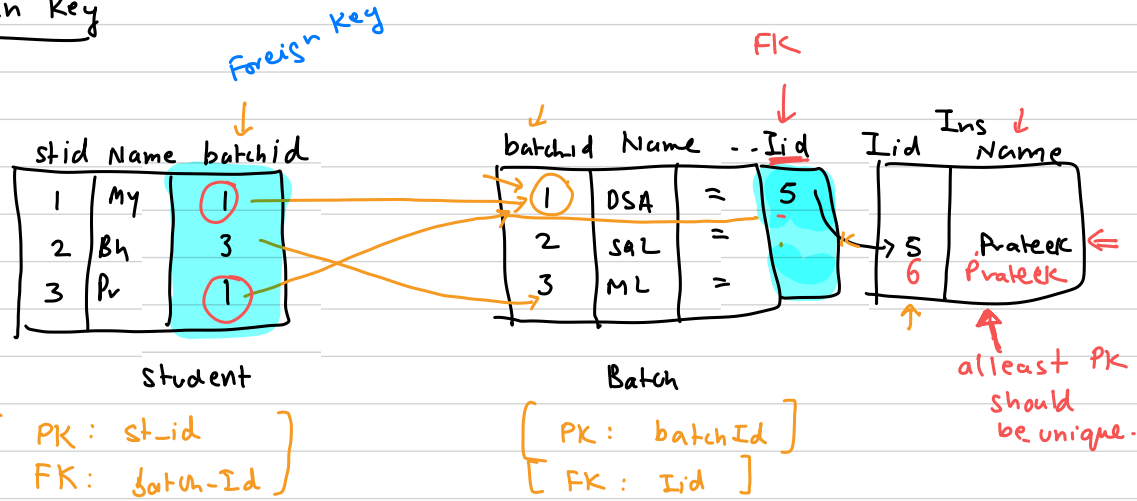
Not all SK, CK, PK
are composite.

{email}
=
{email, name}

{email}
{classid, student_id}
↑ attendance table ↓ composite PK.



Foreign Key



is a key that helps to uniquely identify a row in
some other table.

Installation :

- 1) MySQL server
- 2) Workbench MySQL
- 3) Dataset : Sakila DB

10.30



FOREIGN Key Constraints:



Business
Decision

- ⇒ Delete the students.
- ⇒ Set NULL
- ⇒ No Action, Disallow
- ⇒ Set Default

CASCADE

- Delete a Batch. / Update a Batch-id
- Action 1 ⇒ update the students
 - Action 2 ⇒ set NULL
 - Action 3 (Default) ⇒ Disallow
 - Action 4 ⇒ set Default

CASCADE
SET NULL
RESTRICT
SET DEFAULT

