

Big, Fancy Tables



But first, a small table.



Teacher

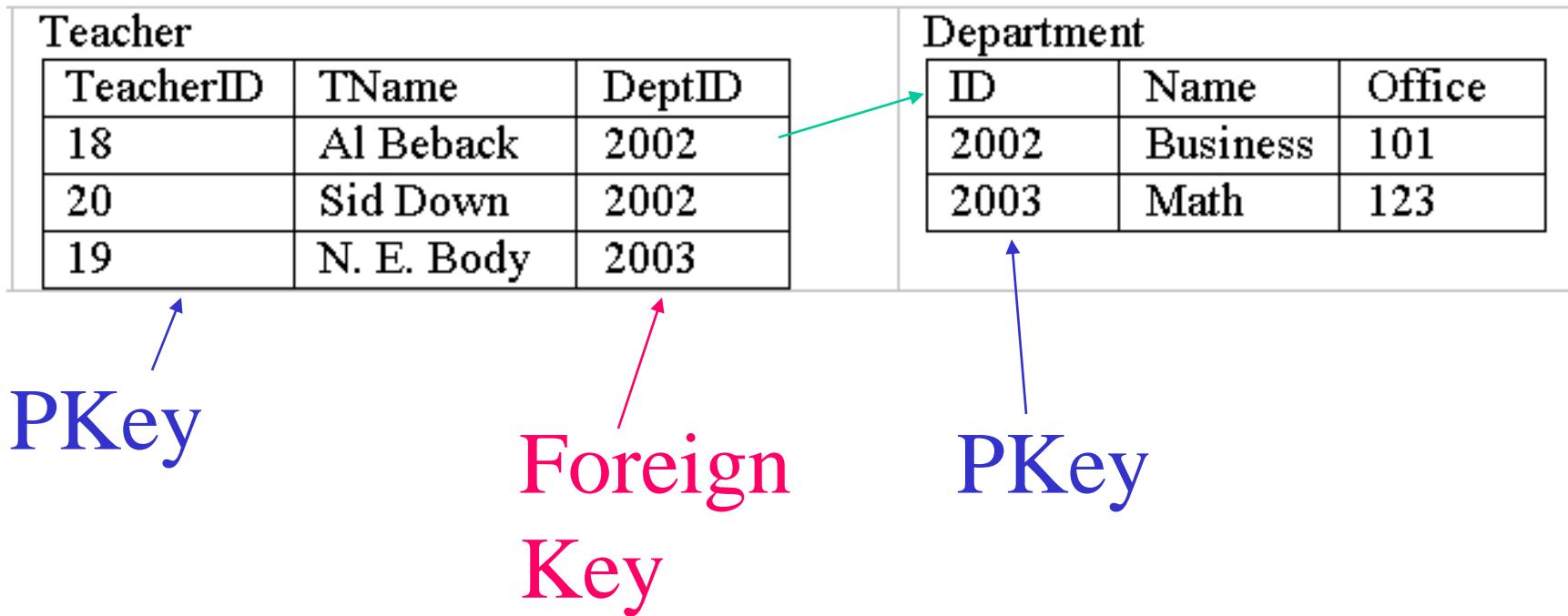
TeacherID	TName	DeptID
18	Al Beback	2002
20	Sid Down	2002
19	N. E. Body	2003

Department

ID	Name	Office
2002	Business	101
2003	Math	123

What is the primary key in each table?

What is the foreign key that links the tables?





Ok, so let's
go bigger.

Primary Keys?

Student

StudID	StudName	Age
1	Stan Dupp	15
2	Sarah Soda	16
3	Ida Knowe	15

Course

Code	Credits	CName	PreReq
ICS3U0	1	Grade 11 Computer Programming	None
ICS4U0	1	Grade 12 Computer Programming	ICS3U0
HSB4M7	2	Integrated Technology in a Global Society	ICS208
ICS208	1	MYP Grade 10 Computer Programming	None

Schedule

SchedID	Term	Period	CourseCode	TeacherID	RoomNum
101	S2009	1	ICS208	20	133
102	S2010	2	ICS208	20	133
103	W2009	1	HSB4M7	18	107
104	S2010	3	ICS4U0	18	133
105	W2009	4	ICS3U0	19	105

Registered

StudentID	SchedID
1	101
1	102
2	101
2	104
3	105
3	104
3	101
1	103
2	103
3	103

Student		
StudID	StudName	Age
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ICS3U0	1	Grade 11 Computer Programming		None	
ICS4U0	1	Grade 12 Computer Programming		ICS3U0	
HSB4M7	2	Integrated Technology in a Global Society		ICS208	
ICS208	1	MYP Grade 10 Computer Programming		None	

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105	W2009	4	ICS3U0	19	105

Registered	
StudentID	SchedID
1	101
1	102
2	101
2	104
3	105
3	104
3	101
1	103
2	103
3	103

About the registered table:

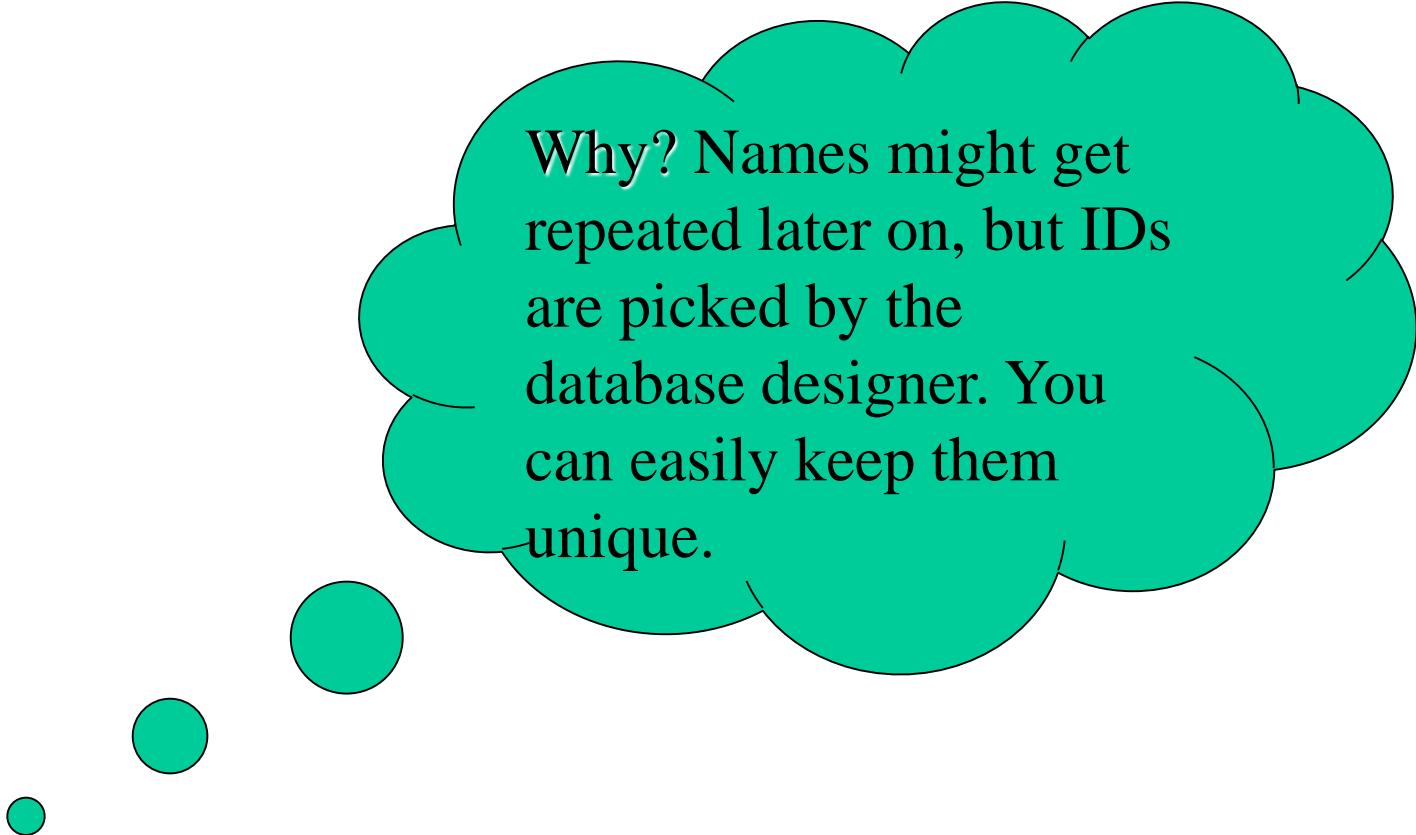
It has a **composite key**.

Both fields together uniquely identify the record.

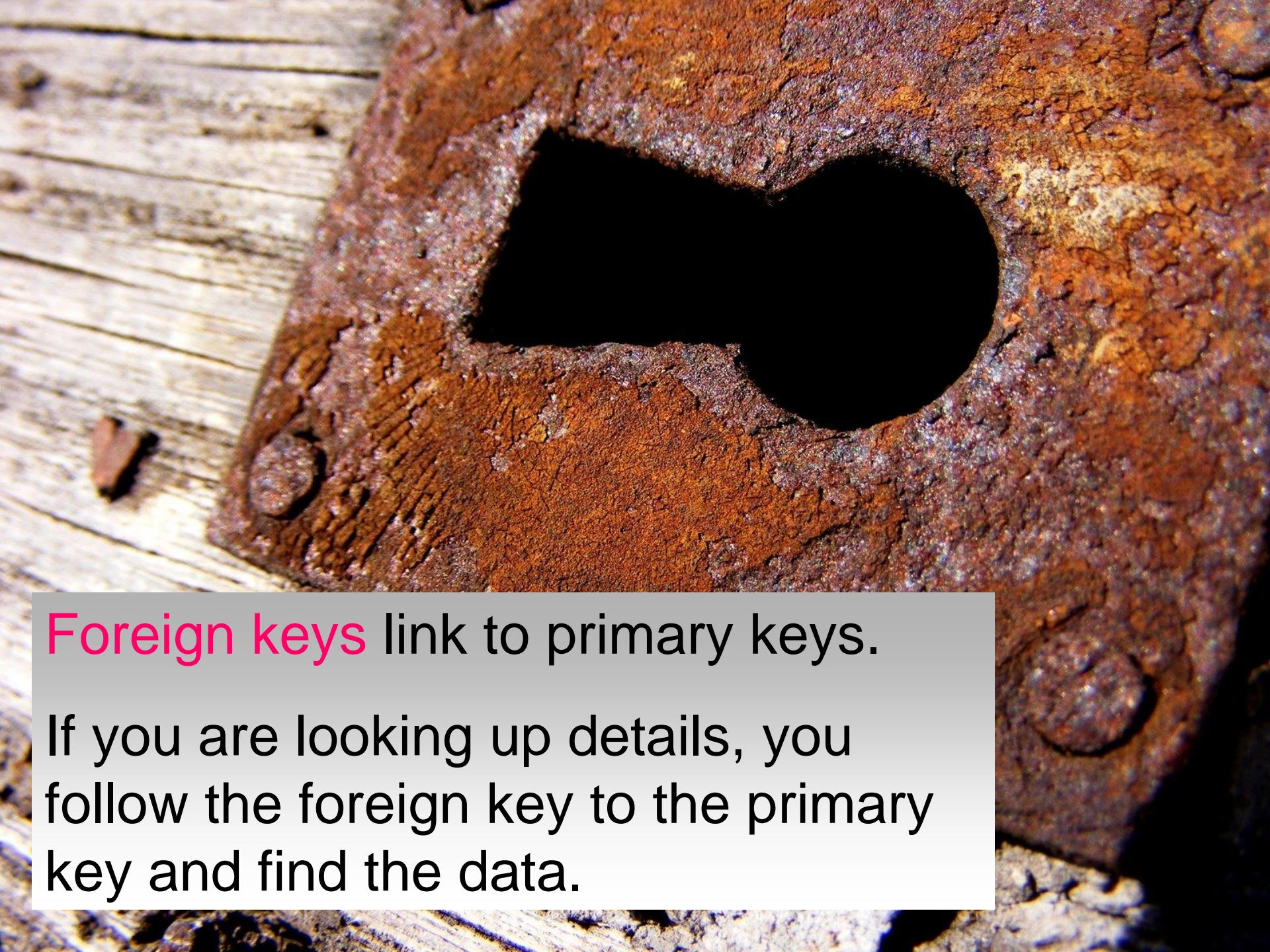
The combination of SchedID and StudID will be unique.

Tips for finding a key field

If there is an ID number and a name and both are unique, pick the ID.



Why? Names might get repeated later on, but IDs are picked by the database designer. You can easily keep them unique.



Foreign keys link to primary keys.

If you are looking up details, you follow the foreign key to the primary key and find the data.

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1	Stan Dupp	15
2	Sarah Soda	16
3	Ida Knowe	15

Teacher		
TeacherID	TName	DeptID
18	Al Beback	2002
20	Sid Down	2002
19	N. E. Body	2003

Department		
ID	Name	Office
2002	Business	101
2003	Math	123

Course			
Code	Credits	CName	PreReq
ICS3U0	1	Grade 11 Computer Programming	None
ICS4U0	1	Grade 12 Computer Programming	ICS3U0
HSB4M7	2	Integrated Technology in a Global Society	ICS208
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1	102
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3	104
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Foreign Keys?

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3	104
3	101
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3	103

To what does each key refer?

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2	103
3	103

How do you go from the Student table to the course table?

Student		
StudID	StudName	Age
1	Stan Dupp	15
2	Sarah Soda	16
3	Ida Knowe	15

Teacher		
TeacherID	TName	DeptID
18	Al Beback	2002
20	Sid Down	2002
19	N. E. Body	2003

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2003	Math	123

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Registered

StudentID	SchedID
1	101
1	102
2	101
2	104
3	105
3	104
3	101
1	103
2	103
3	103

How do you go from the Department table to the course table?

Student		
StudID	StudName	Age
1	Stan Dupp	15
2	Sarah Soda	16
3	Ida Knowe	15

Teacher		
TeacherID	TName	DeptID
18	Al Beback	2002
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19	N. E. Body	2003

Department		
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Print the teacher names and the course name of each course.

Select – what fields do I need?

From – what tables do I need?
Include tables to link them!

Where – what joins do I need?
What restrictions do I need?



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		PreReq
		None
		ICS3U0
		ICS208
		None

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Select what fields?

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Select Tname, Cname
From what tables?

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104	S2010	3	ICS4U0	18	133
105	W2009	4	ICS3U0	19	105

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Select Tname, Cname
From Teacher, Course..... And what?

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105	W2009	4	ICS3U0	19	105

Print the teacher names and the course name of each course.

Select Tname, Cname
 From Teacher, Course, Schedule
 Where... link PK to FK...

Student		
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105	W2009	4	ICS3U0	19	105

Print the teacher names and the course name of each course.

Select Tname, Cname
 From Teacher, Course, Schedule
 Where Teacher.TeacherID = Schedule.Teacher ID
 and CourseCode = Code