

Foreign Keys

Employee

emp_id	first_name	last_name	birth_date	sex	salary	super_id	branch_id
100	David	Wallace	1967-11-17	M	250,000	NULL	1
101	Jan	Levinson	1961-05-11	F	110,000	100	1
102	Michael	Scott	1964-03-15	M	75,000	100	2
103	Angela	Martin	1971-06-25	F	63,000	102	2
104	Kelly	Kapoor	1980-02-05	F	55,000	102	2
105	Stanley	Hudson	1958-02-19	M	69,000	102	2
106	Josh	Porter	1969-09-05	M	78,000	100	3
107	Andy	Bernard	1973-07-22	M	65,000	106	3
108	Jim	Halpert	1978-10-01	M	71,000	106	3

Branch

NULL ↗

Client

client_id	client_name	branch_id
400	Dunmore Highschool	2
401	Lackawana Country	2
402	FedEx	3
403	John Daly Law, LLC	3
404	Scranton Whitepages	2
405	Times Newspaper	3
406	FedEx	2

Works_With

emp_id	client_id	total_sales
105	400	55,000
102	401	267,000
108	402	22,500
107	403	5,000
108	403	12,000
105	404	33,000
107	405	26,000
102	406	15,000
105	406	130,000

Branch Supplier

branch_id	supplier_name	supply_type
2	Hammer Mill	Paper
2	Uni-ball	Writing Utensils
3	Patriot Paper	Paper
2	J.T. Forms & Labels	Custom Forms
3	Uni-ball	Writing Utensils
3	Hammer Mill	Paper
3	Stamford Lables	Custom Forms

- Q What if I delete the record of DAVID WALLACE?
- # What can happen if we delete something to which Foreign key is pointing?
- ① Parent get's deleted but child does not get deleted & point to Null.



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108	Jim	Halpert	1978-10-01	M	71,000	106	3

Branch

branch_id	branch_name	mgr_id	mgr_start_date
1	Corporate	100	2006-02-09
2	Scranton	102	1992-04-06
3	Stamford	106	1998-02-13

Works With Part of

P.K

emp_id	client_id	total_sales
105	400	55,000
108	401	26,000
108	402	22,500
107	403	5,000
108	403	12,000
105	404	33,000
107	405	26,000
102	406	15,000
105	406	130,000

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client_id	client_name	branch_id
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Branch Supplier

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Q2. What happens to Works_With emp_id 102 when you delete 102th employee from Employee table.

⇒ We can not make P.K as Null.

* ON DELETE CASCADE *

When Parent get del, child also gets deleted.

Constraints in MySQL

CONSTRAINT	DESCRIPTION
<u>NOT NULL</u>	In MySQL NOT NULL constraint allows to specify that a column can not contain any NULL value. MySQL NOT NULL can be used to CREATE and ALTER a table.
<u>UNIQUE</u>	The UNIQUE constraint in MySQL does not allow to insert a duplicate value in a column. The UNIQUE constraint maintains the uniqueness of a column in a table. More than one UNIQUE column can be used in a table.
<u>PRIMARY KEY</u>	A PRIMARY KEY constraint for a table enforces the table to accept unique data for a specific column and this constraint creates a unique index for accessing the table faster.
<u>FOREIGN KEY</u>	A FOREIGN KEY in MySQL creates a link between two tables by one specific column of both tables. The specified column in one table must be a PRIMARY KEY and referred by the column of another table known as <u>FOREIGN KEY</u> .
<u>CHECK</u>	A CHECK constraint controls the values in the associated column. The CHECK constraint determines whether the value is valid or not from a logical expression.
<u>DEFAULT</u>	In a MySQL table, each column must contain a value (including a NULL). While inserting data into a table, if no value is supplied to a column, then the column gets the value set as DEFAULT.

```
mysql> CREATE TABLE Client(
-> client_id INT PRIMARY KEY,
-> client_name VARCHAR(40),
-> branch_id INT,
-> FOREIGN KEY(branch_id) REFERENCES Branch(branch_id) ON DELETE SET NULL);
```

Query OK, 0 rows affected (0.04 sec)

```
mysql> DESC Client;
```

Field	Type	Null	Key	Default	Extra
client_id	int	NO	PRI	NULL	Primary Key
client_name	varchar(40)	YES	MUL	NULL	Foreign Key
branch_id	int	YES			

3 rows in set (0.01 sec)

In Current
table

Primary
key in Branch.

what happens
when PRI
is deleted
to the
F.K
Row

```
mysql> ALTER TABLE client ADD COLUMN vishal_guptas_column VARCHAR(20);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> DESC client;
```

Field	Type	Null	Key	Default	Extra
client_id	int	NO	PRI	NULL	
client_name	varchar(40)	YES		NULL	
branch_id	int	YES	MUL	NULL	
vishal_guptas_column	varchar(20)	YES		NULL	

```
4 rows in set (0.01 sec)
```