RDBMS : RDBMS stands for **Relational Database Management System**. RDBMS is the basis for SQL, and for all modern database systems like MS SQL Server, IBM DB2, Oracle, MySQL, and Microsoft Access.
Row : Individual Entry
Column : Single Attribute

Student

Column

student_id	name	major
1	Jack	Biology
2	Kate	Sociology
3	Claire	English
4	Jack	Biology
5	Mike	Comp. Sci

Diagram: Row & Column

Primary Key : It is a key in a relational database that is unique for each record. It is a unique identifier
Primary key is two type :
1. **Natural Key** : A primary key may consist of real-world observables.
2. **Surrogate Key** : while an attribute created to function as a key and not used for identification outside the database.

Employee

emp_ssn	first_name	last_name	birth_date	sex	salary
123456789	Jan	Levinson	1961-05-11	F	110,000
555667777	Michael	Scott	1964-03-15	M	75,000
8886665555	Josh	Porter	1969-09-05	M	78,000
111332467	Angela	Martin	1971-06-25	F	63,000
99857463	Andy	Bernard	1973-07-22	M	65,000

Diagram: emp_ssn (primary key)

Combined Primary Key / Composite Key : A composite key is a combination of two or more columns in a table that can be used to uniquely identify each row in the table.

Works_With

emp_id	client_id	total_sales
107	400	55,000
101	401	267,000
105	402	22,500
104	403	5,000
105	403	12,000
107	404	33,000

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Diagram: Composite Key

Foreign Key : It is a field (or collection of fields) in one table, that refers to the PRIMARY KEY in another table.

Employee

emp_id	first_name	last_name	birth_date	sex	salary	branch_id	super_id
100	Jan	Levinson	1961-05-11	F	110,000	1	NULL
101	Michael	Scott	1964-03-15	M	75,000	2	100
102	Josh	Porter	1969-09-05	M	78,000	3	100
103	Angela	Martin	1971-06-25	F	63,000	2	101
104	Andy	Bernard	1973-07-22	M	65,000	3	101

Branch

branch_id	branch_name	mgr_id
2	Scranton	101
3	Stamford	102
1	Corporate	108

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

Works_With

emp_id	client_id	total_sales
107	400	55,000
101	401	267,000
105	402	22,500
104	403	5,000
105	403	12,000
107	404	33,000

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Custom Install :

MySQL Server 8.0.23
MySQL Shell 8.0.23
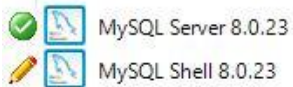
Set Password & Remember
My PC Port : 3330
Password : 981992

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

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

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

Labels

	Primary Key
	Foreign Key
	Attribute