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SQL-

DATA TYPES-

INT -WHOLE NUMBERS

FLOAT(M,D)- DECIMAL NUMBER APPROXIMATE

DECIMAL(M,D)-DECIMAL NUMBER PRECISE



## NON-NUMERIC DATA TYPES

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CHAR(N) : Fixed length character

VARCHAR(N) : Varying length character

ENUM('M','F') : Value from a defined list

BOOLEAN : True or False values

SQL Data Types

So the first data type we look at is char and this is for fixed length characters.

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## DATE AND TIME TYPES

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DATE : Date (YYYY-MM-DD)

DATETIME : Date and the time (YYYY-MM-DD HH-MM-SS)

TIME : Time (HHH-MM-SS)

YEAR : Year (YYYY)

# PRIMARY KEY

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- A primary key is a column, or set of columns, which uniquely identifies a record within a table.
- A primary key must be unique.
- A primary key cannot be NULL.
- A table can only have one primary key.

When we create our tables we will learn how to define our primary keys.

## PRIMARY KEY EXAMPLE

id Integer	first_name character varying (20)	last_name character varying (20)	gender character (1)	telephone character varying (15)
1	John	Smith	M	01903765032
2	John	Burrows	M	01903733211
3	John		M	
4	Susan	Andrews	F	01304333492
5	Emily	Simmonds	F	01708454567
6	George	Simmonds	M	01708454567
7	Emily	Warburton	F	01903909009
8	David	Smith	M	01503665382
9	Jennifer	Jang	F	01944225042

The ID column is the PRIMARY KEY in the customers table.

Can't be the first\_name, last\_name or even telephone number as they are not unique.

# FOREIGN KEY

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- A foreign key is used to link two tables together.
- A foreign key is a column whose values match the values of another table's primary key column.
- The table with the primary key is called the reference, or parent, table and the table with the foreign key is called the child table.
- A table can have multiple foreign keys.

## FOREIGN KEY EXAMPLE

id integer	customer_id integer	product_id integer	quantity integer	price numeric	order_date date
1	5	1	2	49.50	2017-01-02
2	9	2	1	49.50	2017-01-03
3	22	13	1	75.00	2017-01-05
4	7	3	1	49.50	2017-01-09
5	9	10	4	25.00	2017-01-11
6	[null]	10	3	25.00	2017-01-11
7	1	11	2	20.00	2017-01-11
8	13	8	2	69.00	2017-01-14
9	5	4	1	60.00	2017-01-16
10	20	6	2	65.00	2017-01-16

Customer\_id column and product\_id column are FOREIGN KEYS in the orders table.

They are referencing PRIMARY KEY columns in the customers and products tables.

## Exercise 1

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- Add a primary key to the id fields in the pets and people tables.
- Add a foreign key to the owner\_id field in the pets table referencing the id field in the people table.
- Add a column named email to the people table.
- Add a unique constraint to the email column in the people table.
- Rename the name column in the pets table to 'first\_name'.
- Change the postcode data type to CHAR(7) in the addresses table.