

# Data types

Each **field** in a database needs to use a specific **data type**

Each record will use the same data type for that field

# Data types

Main data types:

- string – anything using non-numeric values is probably string (includes character – a string of length 1)
- integer – whole numbers
- float/real – numbers with decimal points
- Boolean – True/False data types

Databases can also use specialised data types such as date, time, currency etc...

# Data types

The basic rule of database design is, if you're not going to do calculations using it, don't make it a numeric field

For example, you'd never do a calculation using house number. House numbers might also include non-numbers (e.g. 22a)

Anything with "leading zeroes" can't be a number either (e.g. product id 0001)

## Game

GameName	GameID	Publisher	Max Players	Price
Knights of the Air	001	AHI	4	29.99
Diplomacy	003	AHI	7	15.00
The House of Horror	002	CHA	2	20.99
Ambush!	009	AHI	1	19.99
James Bond Adventures	007	SPI	2	21.50
Star Fleet Battles	010	GDW	4	25.99
The Longest Day	011	SPI	2	35.99

For table **Game**, the **data types** for the five **fields** will likely be:

- GameName: string
- GameID: string (leading zeroes; no calculations)
- Publisher: string
- Max Players: integer or string – would you calculate?
- Price: float/real – you might calculate

## Airport

AirportName	Code	CountryName	Terminals
Manchester	MAN	UK	3
Heathrow	LHR	UK	5
Frankfurt	FRA	Germany	2
Gatwick	LGW	UK	2
Hamburg	HAM	Germany	2
Fiumicino	FCO	Italy	4
Copenhagen	CPH	Denmark	2

Table name?

How many fields?

How many records?

Primary key?

Data types?

id	name	species	age	gender	height
001	Marg	Giraffe	12	F	4.7
002	Molly	Giraffe	6	F	4.4
003	Molly	Giraffe	5	F	4.2

It's very unlikely that you would actually use an age field  
 This changes each year and would need updating  
 It's much easier to store the birth date and then  
 calculate the age

008	Luna	Lion	2	F	0.8
009	Andrea	Aardvark	7	F	0.54

An example Boolean fields that could be added here  
 would be, isAlive or isInZoo

004	Paula	Pygmyon	2	F	2.0
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