Cartographer's talk

Sevilla - Geographica Hammer 2018-09-27

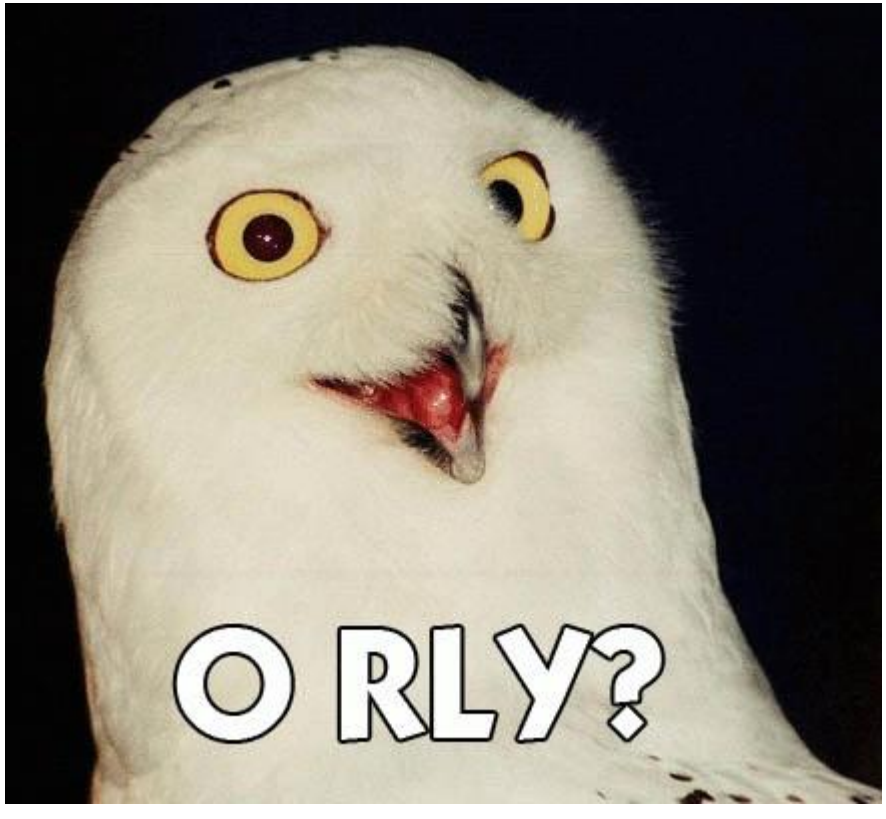
- Pedro-Juan Ferrer · @vehrka

The *Geographic Data problem*

or

Spacial is Special

GEO Problem?



You have to deal with data that has special rules.

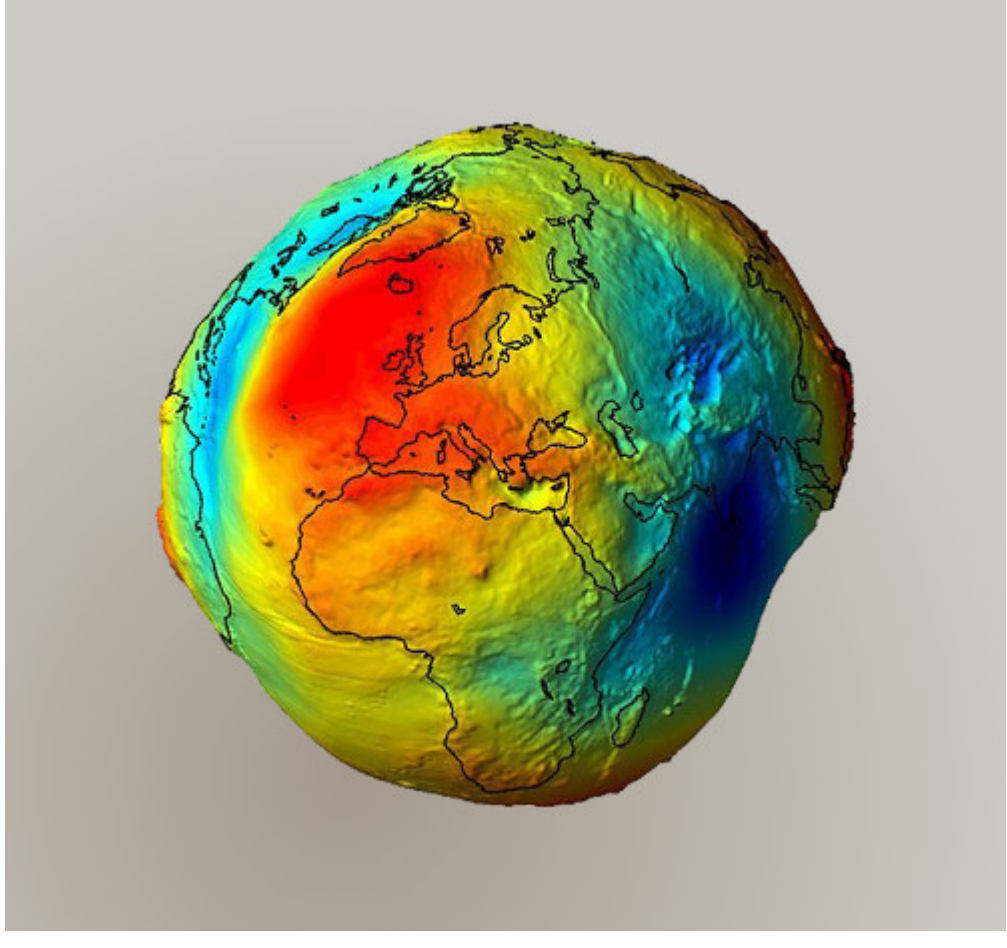
Rules based on a reality not told in schools

Earth is not a sphere

Earth is more like a potato

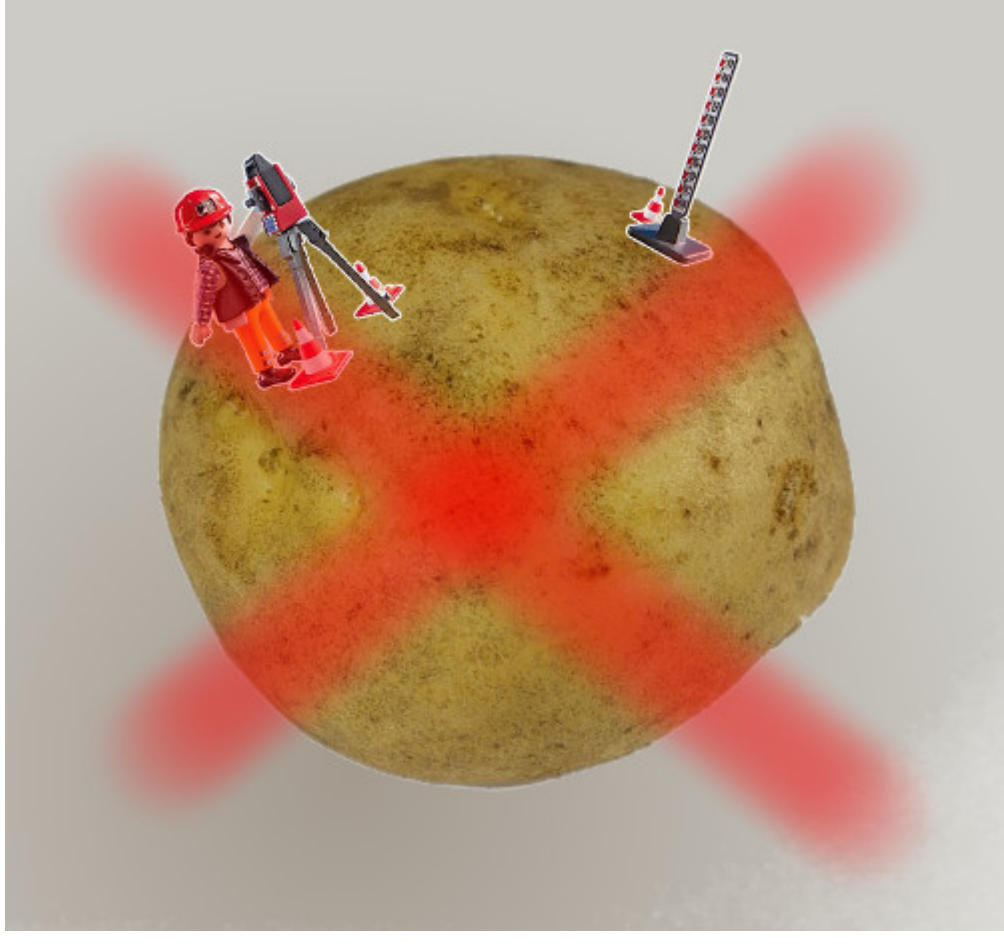
A potato

Believe me, I know what I'm talking about



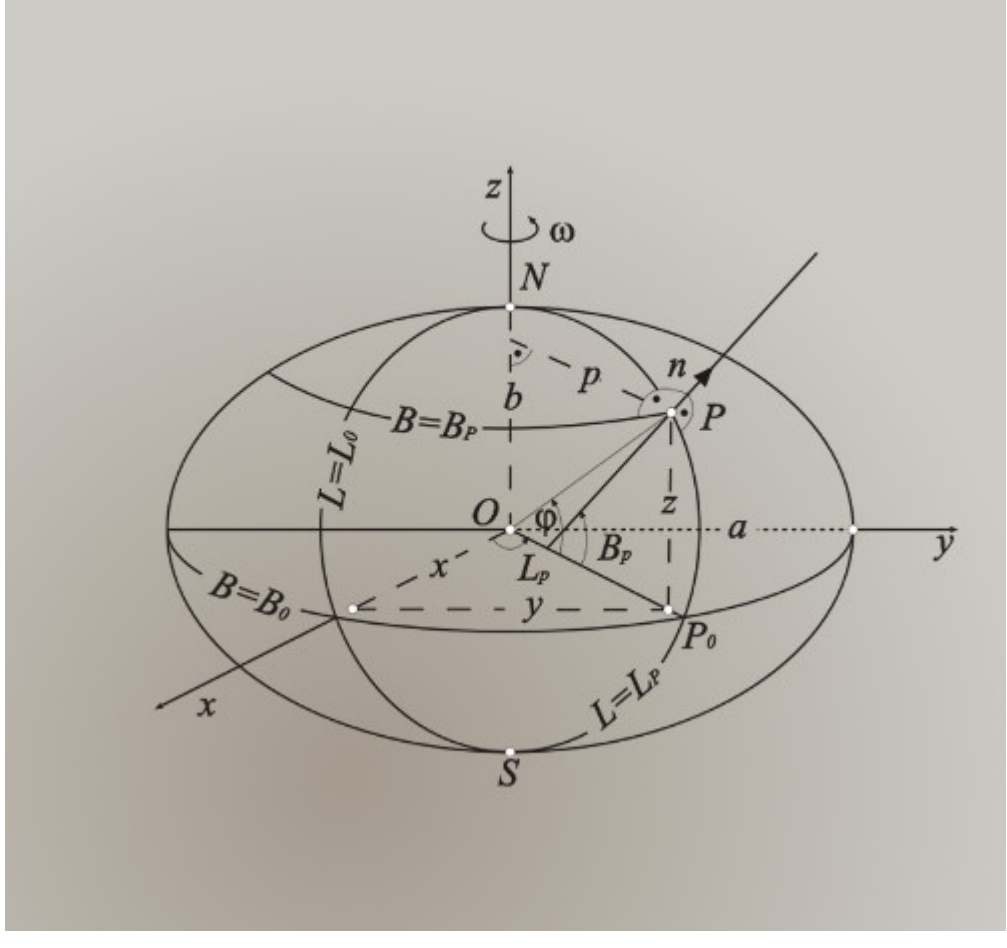
Geoids are physical

Although its the true shape of the Earth, we can't measure over it.



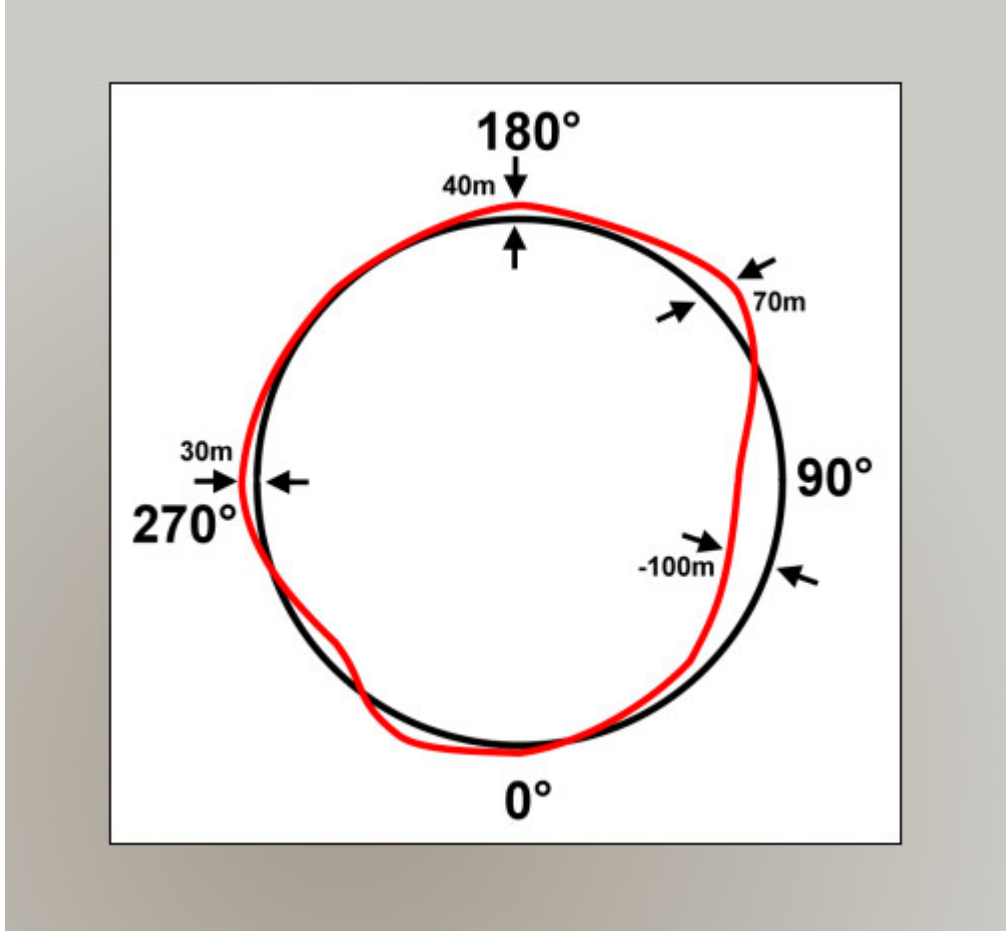
We need mathematics

An **Ellipsoid**



Ellipsoid vs Geoid

On average, they are quite similar



Datum is the name of the game

The Ellipsoid and a couple more of things is what we call:

the **DATUM**

(And there are not one but several Datums, understanding this takes several courses of Geodesy, trust me on this)

Earth is not a sphere

Remember

> *The **GEO** information lays over something mathematical that has its own rules.*
>
> ***THE DATUM***

Maps are flat

Making things flat

But you can't turn **flat** something spherical

(without breaking it)

Breaking Flat

You have to choose what you want to *break*:

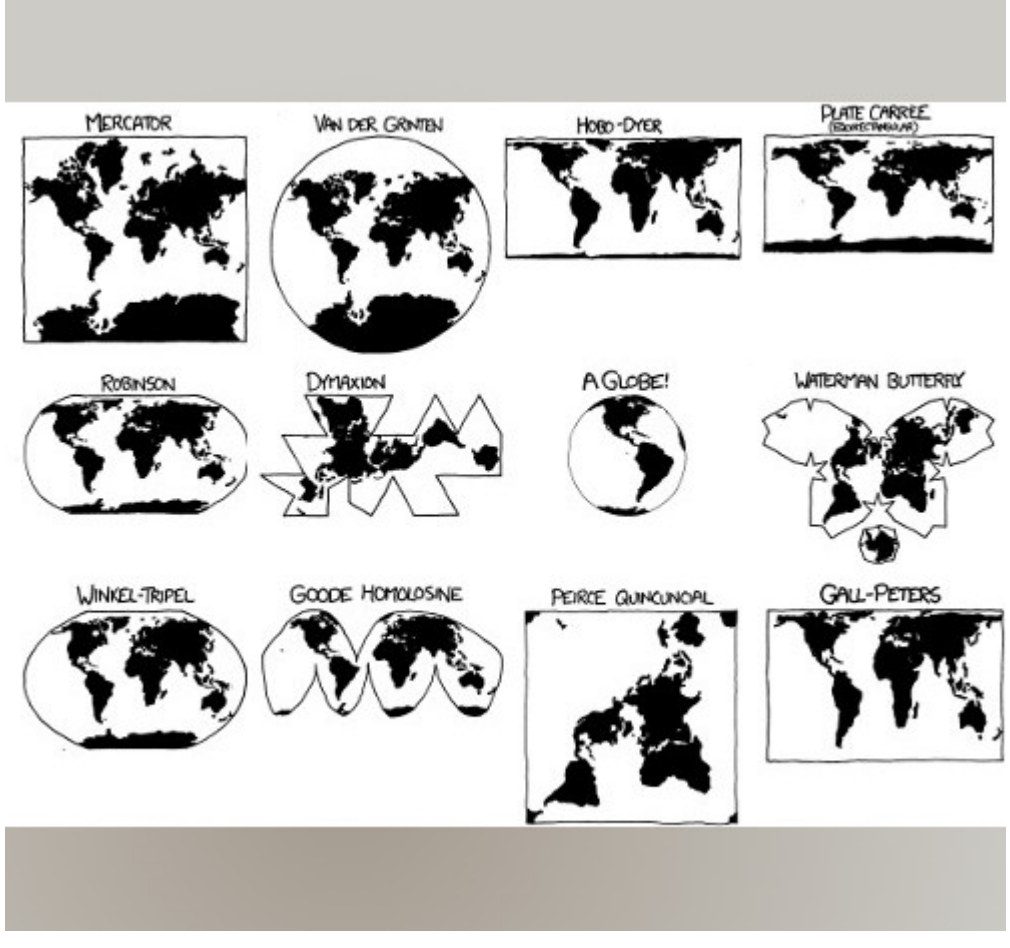
- **Areas**
- **Angles**
- **Distances**

In the best case you can choose two of the three.

(I'm skipping several courses on Cartography with this slide, trust me on this)

Choose your weapon!: The Projection

Cartographers have tricks for breaking things **mathematically**



Maps are flat

Remember

> *The **GEO** information uses a mathematical trick to make things **flat** orderly.*
>
> ***THE PROJECTION***

SRS and CRS

Toghether a *DATUM* and a *PROJECTION* make a **CRS**

The most famous catalog of *CRS* is **EPSG**

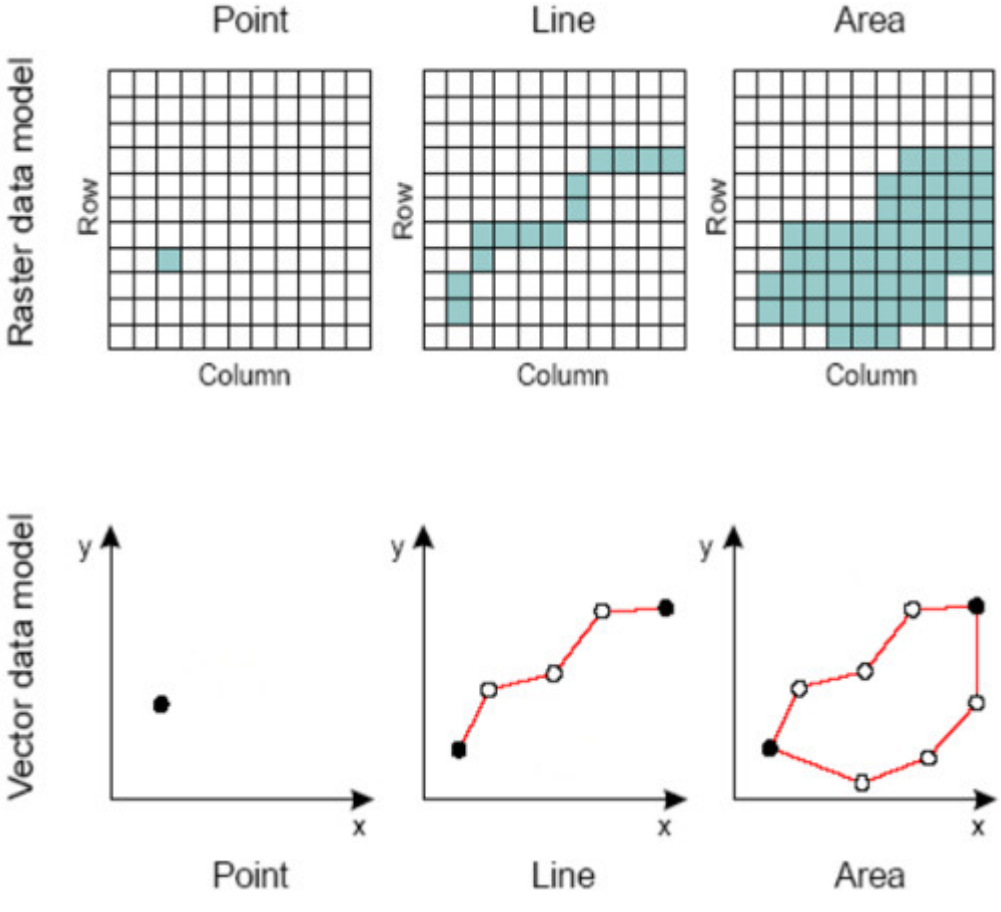
- EPSG:4326
- EPSG:3857 or EPSG:900913
- EPSG:4258
- EPSG:25830, EPSG:25831

Geo data types

These one are easy

Because you are more used to it

Raster and Vector data



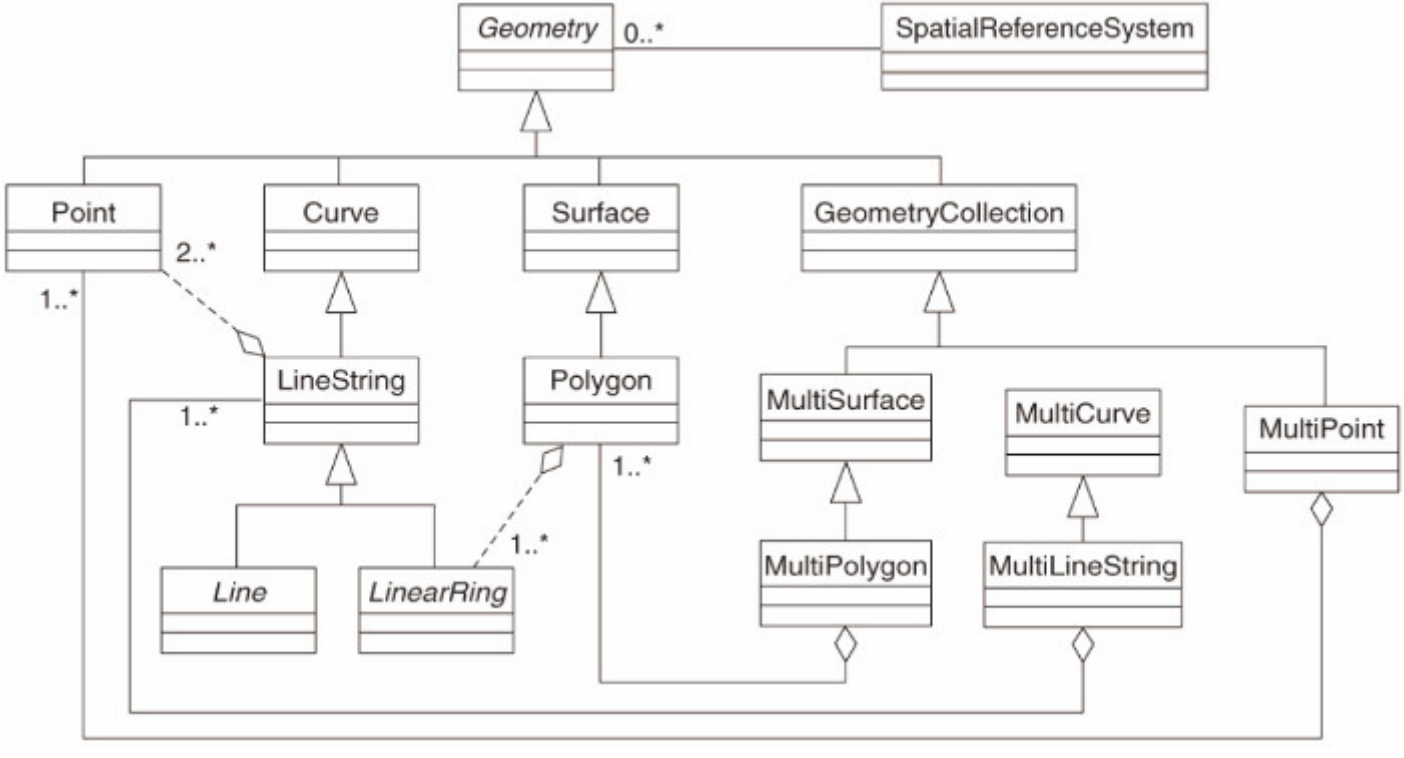
Data model

How many geometry types do you know?

... Point, Line, Surface ...

Well, it's complicated...

OGC **Simple** Feature Access



lon/lat vs lat/lon

There's a little bit of fuss

In theory it should be lon/lat (x,y)

But we are used to lat/lon

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Always check things ... twice

Recap

- Know your **Datum**
- Know your **Projection**
- Know your **Data Type**
- Know your **Model**

Recap

- Know your **Datum**
- Know your **Projection**
- Know your **Data Type**
- Know your **Model**

KNOW YOUR (geo) DATA!!!

That’s all folks!

Thanks! Questions?

Based on the **«Geospatial analysis with Python»** a talk by

- Pedro-Juan Ferrer · @vehrka
- Jorge Sanz - @xurxosanz
- Geoinquietos Valencia - @geoinquietosvlc

Slides and repo

- http://bit.ly/pycones2015-geo
- https://github.com/geoinquietosvlc/2015.es.pycon