Working with Data

Objectives

After completing this section of the course you should understand:

- » The different Data Types
- » The Data Acquisition & Examination process
- » How to transform your Data
- » Data Exploration: understanding your data

Data Types

Quantitative
Discrete or continuous data and typically any variables that are **countable**

Categorical
Nominal data offering a **way of distinguishing and labelling** values.

Ordered
Similar to categorical data but with an order within the data

Quantitative

Qualitative

Data Types' Influences

» The **type of exploratory data analysis** you can undertake
» The editorial thinking you establish
» The **specific chart types** you might use
» The **colour choices** and **layout decisions** around composition

Understanding your data

Understanding your data

» Mean vs. Median

» Actual vs. Rank Index vs. Percentile

» Change vs. Actual

Mean vs. Median

Hockey Player Points Scored

6	7	13	17	22	22	24	25	27	27
28	35	35	50	517					

Mean
» Add the values and divide by the number of items in the list
» Great for **consistent values**
» Real center

Median
» Take the number in the middle of the list
» Better when there are **outliers**

Mean
57

Median
25

Actual vs. Rank index vs. Percentile
1, 2, 3   %

GDP data

$15,684,800,000,000 $3,092,000,000

Rank: 1   Rank: 161
Percentile: 100th   Percentile: 20th

Change vs. Actual
##

GDP data

$59,000,000,000 $43,000,000,000

Where should I invest?

GDP Growth: **-10%**   GDP Growth: **+8.5%**

Two more concepts

Sample Size & Methodology
» How many entries?
» How data was collected?
» How was the data corrected?

Correlation vs. causation
» Does data move in the same direction?
» Is there a real causality?

Quality and reliability

Impact
» Footnotes
» Legends
» Labels

Converting your data

Common Data Adjustments

» Calculating indexes and ratios

» Calculating percentiles

» Aggregating

» Regrouping

» Converting from Excel/CSV to JSON/XML/MySQL

Calculating indexes and ratios

» Comparing data side-by-side

» Getting the data on a similar scale

» **Example:** Minimum Wage

Calculating percentiles

» Comparing data as part of a whole
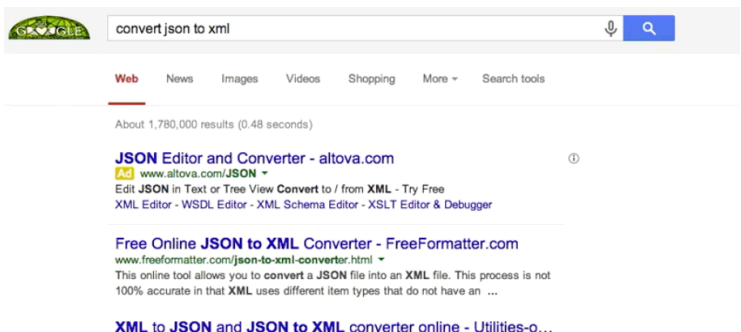
» A portion of the entire dataset

» **Example**: GDP

Aggregating

» Pivot the table

» Look at raw data from different granularity level

» **Example**: Excel Pivot Table

Converting from Excel/CSV to JSON/XML/MySQL

» Converting from one form to other

» Move to tabular data

» Move to Web standards

products.json:

```
[{
  "_id": {
    "$oid": "5968dd23fc13ae04d9000001"
  },
  "product_name": "sildenafil citrate",
  "supplier": "Wisozk Inc",
  "quantity": 261,
  "unit_cost": "$10.47"
}, {
  "_id": {
    "$oid": "5968dd23fc13ae04d9000002"
  },
  "product_name": "Mountain Juniperus ashei",
  "supplier": "Keebler-Hilpert",
  "quantity": 292,
  "unit_cost": "$8.74"
}, {
  "_id": {
```

Google — convert json to xml

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JSON Editor and Converter - altova.com
Ad www.altova.com/JSON ▾
Edit **JSON** in Text or Tree View **Convert** to / from **XML** - Try Free
XML Editor - WSDL Editor - XML Schema Editor - XSLT Editor & Debugger

Free Online **JSON to XML** Converter - FreeFormatter.com
www.freeformatter.com/**json-to-xml-converter**.html ▾
This online tool allows you to **convert** a **JSON** file into an **XML** file. This process is not
100% accurate in that **XML** uses different item types that do not have an ...

XML to JSON and **JSON to XML** converter online - Utilities-o...

THANKS!

Any questions?

You can find me at

- » @manuGenard
- » genard@fr.ibm.com

CREDITS

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PRESENTATION DESIGN

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» Titles: **Oswald**
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Yolk yellow **#ff9900**

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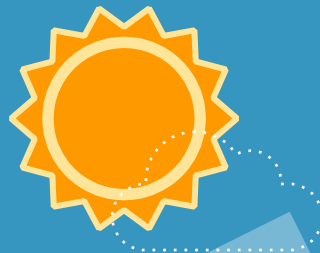
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and many more...