

# INFS 5116

## Data Visualisation



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### Course structure

- Weekly topics with online study materials
  - Directed self-study
- Online class meetings **via ZOOM**
  - **Scheduled for Weeks 1, 4, 7, 10 and 13**
  - Discussion plus some practical work as relevant to course topics, assessment Q&A
- Open consultation by appointment

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## Course content

- Data visualisation is a broad, multidisciplinary field
- Explore concepts, theory and (some) tools for data visualisation
  - Technology around data visualisations characterised by flux
  - R, Tableau and D3
- Challenge, enlighten, equip and inspire
- Requires on-going effort to learn, apply, reflect and develop

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## Assessment structure

### Continuous

- Practical exercises
  - “See then do”
- Due in Weeks 3, 6, 10 and 13
- In-class quizzes (in workshop)

### Assignment

- Tell a story using graphics
- Part 1: Visualisation project plan due in Week 8
- Part 2: Visualisation project report due at the end of the exam period

**Students must submit all continuous assessment tasks in order to pass the course.**

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A world of possibilities... [www.data-to-viz.com](http://www.data-to-viz.com)



## Data visualisation

What does it mean to you?

An important distinction...

- Visualisations which are useful for **analysis**
- Visualisations which are useful for **communication**



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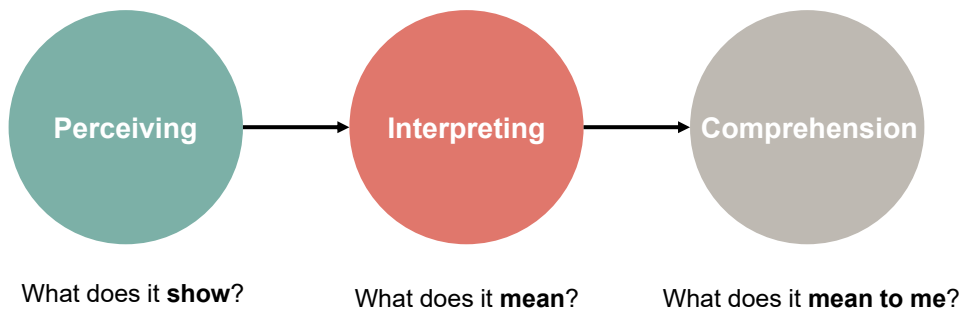


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## Stages of understanding

Andy Kirk (2016) Data Visualisation: A handbook for data driven design



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## Good design principles

Andy Kirk (2016) Data Visualisation: A handbook for data driven design

### Trustworthy

Honesty  
Integrity  
Accuracy  
Legitimacy

### Accessible

Useful  
Understandable  
Unobtrusive

### Elegant

Aesthetic  
Thorough  
As little design as possible

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## Design for usability

### Accessible

Useful  
Understandable  
Unobtrusive

Objects have *affordances*—characteristics that reveal how they are supposed to be used and make them easy to use in those ways.

Donald A. Norman (1988) *The Design of Everyday Things*

Data visualisations also have *affordances*.

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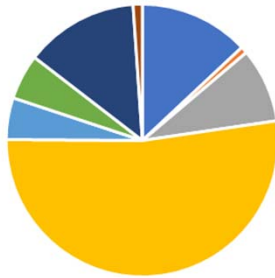
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## Useful design?

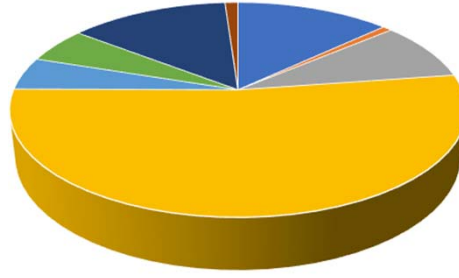
Company G wants to compare its market share to the shares of its competitors.

Market share



■ Company A ■ Company B ■ Company C ■ Company D  
■ Company E ■ Company F ■ Company G ■ Company H

Market share



■ Company A ■ Company B ■ Company C ■ Company D  
■ Company E ■ Company F ■ Company G ■ Company H

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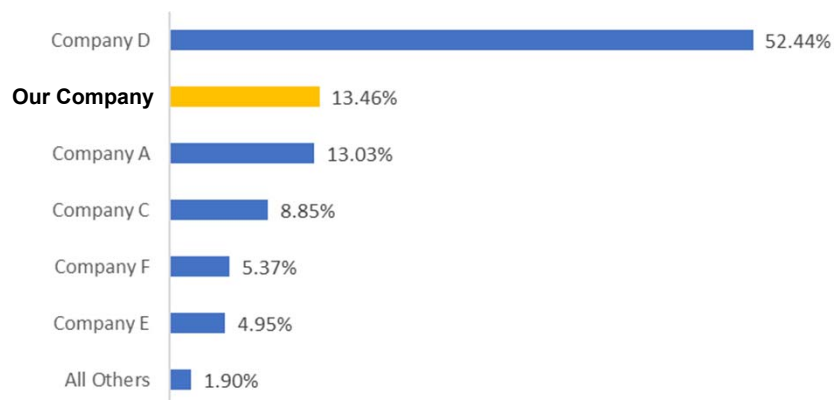
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## Useful design?

Company G wants to compare its market share to the shares of its competitors.

Market share



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## Graphical excellence

Complex ideas communicated with clarity, precision and efficiency

- Show the **data**
- Encourage **substance**
- Avoid **data distortion**
- Make large data sets **coherent**
- Encourage comparison
- Several **levels of detail**
- **Clear** purpose
- Closely integrated with statistical and verbal descriptions

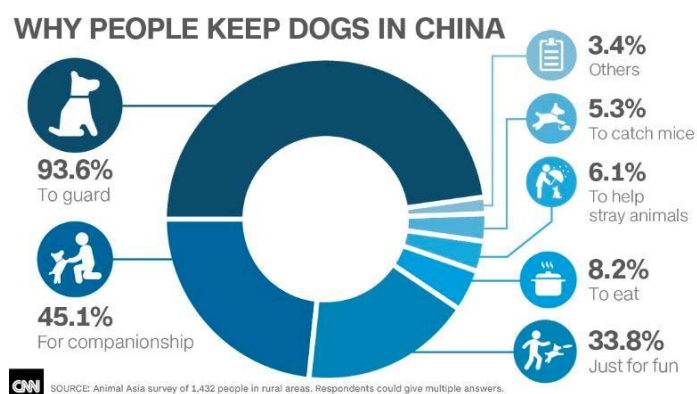
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## Satisfactory?



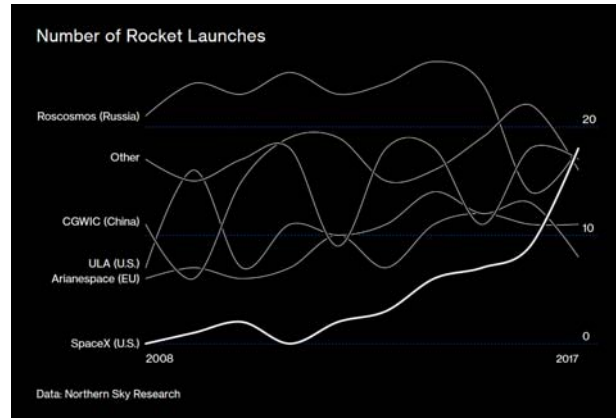
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## Satisfactory?



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