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INFORMATION
TECHNOLOGY

FIT3179 Data Visualisation

Week 01: Unit Structure

GROUP OF EIGHT AUSTRALIA

Welcome to FIT3179 Data Visualisation!

- First thing we're doing is: let's use 'Viz' instead of 'Visualisation' from now on… it's easier to say and type.

You're possibly wondering what this unit is about (unless you read the unit guide ☺)

Let's quickly review the official unit guide and we can discuss what it means.

Synopsis (from the *Unit Guide*)

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"Data visualisation is a powerful technique that allows us to use our visual system to understand data.

Interactive data visualisation is now common in *business*, *engineering and design* and the *social and physical sciences*.

This unit introduces the main kinds of information graphics and interactive visualisation systems and their areas of application.

It investigates the reasons why visualisation can be effective and based on this students will gain experience in critically assessing data visualisations and in designing their own visualisations.

Students will learn how to create visualisations with representative computer tools and gain experience in creating a data visualisation for an application domain of their choice."

Learning Outcomes (from the *Unit Guide*)

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"On successful completion of this unit, you should be able to:

1. critically analyse data visualisations;
2. create effective data visualisations;
3. describe the main applications of data visualisation in business, engineering and design, and the social and physical sciences;
4. describe the advantages, drawbacks and pitfalls of the visual presentation of data as compared to its presentation using other media."

In summary…

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So we're going to look at visualisations, learn how they work (and what doesn't work) then apply this to our own visualisations that we'll create.

That's the WHAT of this course. Let's look at the WHY…

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Why do we make Data Viz?

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Data visualisation underpins modern business, science and technology.

- Allow us to **discover patterns** in data
- Allow us to brain-storm and **create** designs and theories
- Allow us to **communicate** these patterns or to effectively explain new ideas
- **Interactive computer visualisations** are one of the best ways we have of dealing with big data

This is an exciting field of IT!

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Assignments and Expectations

How this unit will run

In the lectures each week, we'll be discussing Data Viz. We'll talk about how to build a good viz., what makes a bad viz., and WHY the theory makes us better at making and reviewing Data Viz.

What we want you to do:

- Research Data Viz. examples
- Critical Analysis of existing Data Viz.
- Contribution to discussion!

This could be YOU!

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Classroom Participation (10%)

- Post an example of a information visualisation and critically review it in the weekly forum (see next slide)

Information Visualisation Project (50%)

Design and implement your own visualisation

- Negotiate application domain (Week 3)
- Critical review of existing visualisations
  Short presentation Week 6 Tutorial: 5%
- Short presentation of the finished visualisation in the Week 11 Tutorial: 5%
- Visualisation by Week 12: 20%
- Written report by Week 12: 20%

Exam (40%)

- 2 hours

Classroom Participation

For the classroom participation (worth 10% of your final mark) for the CLAYTON CAMPUS:

- See schedule on Moodle.

- Presentations will be held at the start of the lecture
  - You must post an image/link of the visualisation to the forum, along with the text of your 2-minute presentation. In the presentation this forum posting will be the basis of your discussion
  - Instructions for the theme of the Data Viz. presentations will be given in the lecture (at the end of today!)

Unit Materials

- All unit materials are placed up on the Moodle website
  - http://moodle.vle.monash.edu/
- It will be used for delivering all class materials… lecture slides, tutorials, assignments, etc.
- Discussion forums are a MUST (for the *participation assignment*)
- Please check the site regularly for updates to materials and discussion boards

Textbook

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- We will be following closely Tamara Munzner: "Visualization Analysis and Design"
  - *electronic copy available from library*
- Others are recommended reading, particularly:
  - "Information Visualization: Perception for Design" by Ware (electronic copy available from library)
  - "Information visualization: Beyond the horizon" by Chen (electronic copy available from library)
  - Edward Tufte has been very influential:
    - "Envisioning Information"
    - "Visual Display of Quantitative Information"
    - "Visual Explanations : images and quantities, evidence and narrative"
    - "Beautiful Information"

Presentations next Week!

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All students

- Read the instructions on the Weekly forums and post your analysis there.

Students in the Clayton Thursday 6PM–8PM lab class:

- Present 2 minutes (per student) at the start of the lecture next week.