TECHNOLOGICAL UNIVERSITY DUBLIN

KEVIN STREET CAMPUS

TU059/TU060
MSc. in Computing

SEMESTER 1 OPEN BOOK EXAMINATIONS 2020/21

Data Visualisation

Dr. Cathy Ennis

Duration 4hrs

Exam script available XX on date of the exam.
All exams submissions should be uploaded before XX on the date of the exam.

Answer ALL questions.

1. (a) List two visualisation theories from relevant literature discussed during our lectures, or any you have encountered during your own research (citing the reference). You may consider examples of frameworks / pipelines / processes for creating visualisations or descriptions of visualisation stakeholder relationships.

(5 marks)

(b) Describe each of your chosen theories in your own words and provide a high-level comparison between the two.

(12 marks)

(c) Critique each theory, highlighting any benefit, shortcomings or challenges they might present to a visualisation designer.

(16 marks)

2 (a) In your own words, explain the term '*editorial thinking*' as part of the process of designing data visualisations (Kirk, A. 2016[1], chapter 5).

(5 marks)

(b) Reflect on a practical visualisation project you have designed and developed (e.g., CA1, CA2 or any other project you have developed) and discuss how this project/visualisation aligns with Andy Kirk's visualisation workflow.

(15 marks)

(c) Reflect on the outcome of this project, particularly focussing on the story told through your visualisation and the impact on the chosen audience.

(13 marks)

3. (a) You have been tasked with designing a web-based visualisation to depict the reproductive rate of Covid-19 throughout Europe using maps. In your own words, give an overview of *three* different projection types that can be used when creating geospatial visualisations.

(15 marks)

(b) Discuss the visual parameters that will guide the choice of map projection and identify the projection you find most suitable for the project listed in (a). In your answer, make reference to:

- Projection type
- Metric properties within the data to be maintained.

(14 marks)

(c) In your own words, using examples where relevant, explain the difference between non-continuous and continuous cartograms, and what types of visualisations they are suited to.

(5 marks)

[1] Data Visualisation: A Handbook for Data Driven Design, 2019, Sage Publishing.