Module: COMP1844 Information Analysis and Visualisation	Re-sit Coursework
Contribution: 100% of the grade	Coursework submission: A single PDF document submitted on Moodle
Module leader: Konstantin Kapinchev	Due date:
Approximate time to complete the coursework: 50 hours	
Learning outcomes: 1. Identify and discuss fundamental concepts related to information analysis and visualisation 2. Demonstrate an understanding of different types of information visualisation and identify appropriate types of visualisation for various types of data 3. Apply analytical and visualisation tools and techniques to obtain insight from datasets	

Plagiarism is presenting somebody else's work as one's own. It includes copying information directly from online resources or books without referencing the material; submitting joint coursework as an individual effort; copying another student's coursework; purchasing coursework from someone else and submitting it as own work. Suspected plagiarism will be investigated and if found to have occurred will be dealt with according to the procedures set by the University. All material copied or amended from any source must be referenced correctly according to the reference style you are using.

Courseworks will be submitted for electronic plagiarism checks.

Coursework Submission Requirements

- An electronic copy of the work for this coursework is expected to be uploaded before the deadline

- The last uploaded version will be marked

- The format of the coursework is a single PDF document

- The limit of the file size is 100 MB

- The PDF document is expected to be virus-free, not protected by a password or corrupted

- The source code should be included as selectable text

- The coursework grade and feedback will be available on the Moodle page of the module

The University website has details of the current Coursework Regulations, including details of penalties for late submission, procedures for Extenuating Circumstances, and penalties for Assessment Offences. See https://www.gre.ac.uk/student-services/regulations-and-policies for details.

Coursework Specification:

The topic of the coursework is processing and visualising one-dimensional and multidimensional data. It consists of **three tasks**. The tasks produce visualisation products, which allows the customers or the users of these products to obtain insights from the data. All tasks are expected to be developed by using the **Python programming language**. Any integrated development environment for Python can be used for the development of the tasks.

Task 1

Identify the average monthly temperatures for three cities of your choice and organise them as a two-dimensional dataset. The cities are expected to be from different climate zones. Extract the following statistical insights from the dataset:

Overall mean value
Overall standard deviation
Mean value per city
Standard deviation per city

Task 2

Represent the dataset from Task 1 as a heat map. Provide a colour scale for guidance. Allow the user to specify a threshold value. Based on this threshold value, use different base colours to represent the average monthly temperatures.

Task 3

Represent the dataset from Task 1 by using parallel coordinates. Use different colours for each city's average monthly temperatures. Add appropriate labels to the chart.

Marking Scheme:

Task	Maximum points
Task 1 (30%)	
Dataset successfully stored into NumPy array or pandas Data Frame	10
Obtain the mean values	10
Obtain the standard deviation values	10
Task 2 (40%)	
Visualise dataset with heat map	10
Use threshold value to change base colour	10
Add colour scale	10
Add appropriate labels	10
Task 3 (30%)	
Visualise parallel coordinates multi-lines with different colours	10
Visualise parallel coordinates axis	10
Add appropriate labels	10

Grading criteria

70-100% All requirements completed to an excellent standard

60-69% All requirements completed. However, there are a number of minor deficiencies in significant areas.

50-59% All requirements completed. However, significant improvements could be made in many areas.

40-49% All requirements completed. However, significant improvements could be made in all areas.

30-39% All requirements attempted but the overall level of understanding and performance is poor.

0-29% There are requirements missing or completed to a very inadequate standard which indicates a very poor or non-existent level of understanding.