Xi'an Jiaotong-Liverpool University
西交利物浦大學

XJTLU Entrepreneur College (Taicang) Cover Sheet

Module code and Title	**DTS204TC Data Visualisation**
School Title	**School of AI and Advanced Computing**
Assignment Title	**Coursework**
Submission Deadline	
Final Word Count	**N/A**
If you agree to let the university use your work anonymously for teaching and learning purposes, please type **"yes"** here.	

I certify that I have read and understood the University's Policy for dealing with Plagiarism, Collusion and the Fabrication of Data (available on Learning Mall Online). With reference to this policy I certify that:

- My work does not contain any instances of plagiarism and/or collusion.
  My work does not contain any fabricated data.

By uploading my assignment onto Learning Mall Online, I formally declare that all of the above information is true to the best of my knowledge and belief.

Scoring – For Tutor Use	
Student ID	

Stage of Marking	**Marker Code**	**Learning Outcomes Achieved (F/P/M/D) (please modify as appropriate)**			**Final Score**
		A	**B**	**C**	
1st Marker – red pen					
Moderation – green pen	**IM Initials**	The original mark has been accepted by the moderator (please circle as appropriate):			Y / N
		Data entry and score calculation have been checked by another tutor (please circle):			Y
2nd Marker if needed – green pen					

For Academic Office Use			**Possible Academic Infringement (please tick as appropriate)**	
Date Received	**Days late**	**Late Penalty**	☐ **Category A**	Total Academic Infringement Penalty (A,B, C, D, E, Please modify where necessary) _____
			☐ **Category B**	
			☐ **Category C**	
			☐ **Category D**	
			☐ **Category E**	

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DTS204TC Data Visualisation
Final Coursework

Submission deadline: **23:59 Beijing Time, May 23rd, 2024**

Percentage in final mark: 100%

Learning outcomes assessed: A, B, C, D, E, F, G

Late policy: 5% of the total marks available for the assessment shall be deducted from the assessment mark for each working day after the submission date, up to a maximum of five working days

Risks:

- Please read the coursework instructions and requirements carefully. Not following these instructions and requirements may result in loss of marks.
- Plagiarism results in award of ZERO mark.
- The formal procedure for submitting coursework at XJTLU is strictly followed. Submission link on Learning Mall will be provided in due course. The submission timestamp on Learning Mall will be used to check late submission.

Overview

In this coursework, you are expected to complete two tasks. For task 1, you need to complete a data visualisation and submit a dataset, an HTML file, a video that can show your visualisation and other potential materials. For Task 2, you need to submit a form (PDF).

Task 1 (60 marks)

You are given a public dataset of The BWF Badminton Rankings – Men's Single. Based on this dataset, please design and create a data visualisation to illustrate the distribution of the top 20 by country and region. Here are task specifications:

- **Target**: You are asked to use D3.js to create **one** visualisation that presents the following information:
  - In the main visualization results, you need to present the **number of players** from different countries or regions in the *top 20* and the **sum of points** for players from each country or region within the top 20."
  - The **highest ranking** of each country or region within the top 20 should be presented by the interaction.
  - The **names and corresponding scores** of players from each country or region within the top 20 should be presented by the interaction.

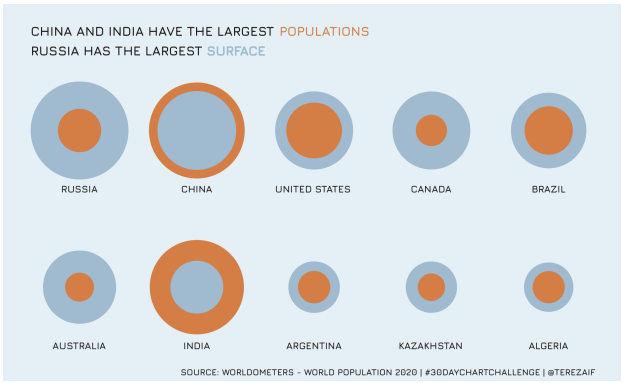
- **Basic Requirements:**
  - Get necessary data from the dataset correctly.
  - Choose the type of the visualisation
  - Design marks and channels.
  - Complete a basic visualisation with suitable designs (scale, axes, text, colour designs etc).
  - Interactions are necessary. When the user moves the mouse in your visualisation, the corresponding mark should be highlighted and show the **highest ranking, names and corresponding scores** of athletes. For example, if you move the mouse to the mark of China, it will show a tooltip that contains the **highest ranking, names and corresponding scores** of athletes in China within the top 20.
  - Animations are necessary to show how the visualisation is generated.

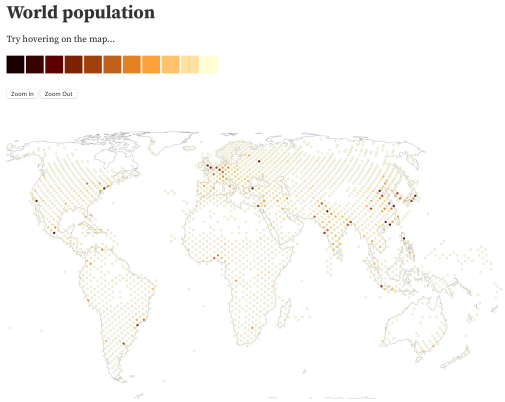
- **Submissions (a zip file (ID_Name_DTS204TC_CW.zip) which contains following documents):**
  - The original ***dataset***.
  - ***HTML file*** with your codes.
  - ***Videos (mp4)*** or ***Screenshot*** that can show all elements in your visualisation.
  - *If you write your JS codes and CSS outside the HTML file, you need to provide your ***JS and CSS files***.
  - *If you set up the D3 environment by local route, you need to submit the "***d3.min.js***"

- **Additional Notes:**
  - You can only use D3.js, JavaScript and HTML. You will get marks deducted if you use additional libraries to complete this task.
  - Your submitted dataset should be the original one, which means you cannot change the data in the dataset.
  - Suitable comments are necessary for your codes. It also affects your marks.
  - The screenshot is acceptable only if your visualisation does not contain any animation and interaction.
  - The way you choose for writing your JS and CSS codes will not affect your final marks.
  - Please make sure you upload the CW to the LMO correctly.
  - Your report can **only** consist following contents:
    - If your codes do not work, explain what you have done.
    - If you use other libraries, list your libraries in the report.
    - If you use 3D marks in your visualisation, describe your 3D design and explain why you choose 3D marks.

Task 2 (40 marks)

Here are two data visualisations of the World Population by Tereza Iofciu and Agustin.
https://observablehq.com/@terezaif/world-population-density-by-country
https://observablehq.com/@aguformoso/world-population





- **Target**: Please analyse and compare these two visualisations. Then please complete the attached form "Task2.docx", which contains following contents:
  - Dataset types, Data Types, Attributes and Corresponding Types, Actions.
  - List Marks and Channels of each visualisation. Describe the design of Channels.
  - Describe Potential interaction view of each visualisation.
  - Limitations of each visualisation (marks, channels, interactions …).
  - Compare these two visualisations, choose the one you think is better and explain reasons.

- **Submission:** You should submit a PDF file that converted from the completed "*Task2.docx"*.

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Generic Marking Criteria

Grade	Point Scale		Criteria to be satisfied
A	81+	First	➢ Outstanding work that is at the upper limit of performance. ➢ Work would be worthy of dissemination under appropriate conditions. ➢ Mastery of advanced methods and techniques at a level beyond that explicitly taught. ➢ Ability to synthesise and employ in an original way ideas from across the subject. ➢ In group work, there is evidence of an outstanding individual contribution. ➢ Excellent presentation. ➢ Outstanding command of critical analysis and judgment.
B	70 - 80	First	➢ Excellent range and depth of attainment of intended learning outcomes. ➢ Mastery of a wide range of methods and techniques. ➢ Evidence of study and originality clearly beyond the bounds of what has been taught. ➢ In group work, there is evidence of an excellent individual contribution. ➢ Excellent presentation. ➢ Able to display a command of critical thinking, analysis and judgment.
C	60 - 69	Upper Second	➢ Attained all the intended learning outcomes for a module or assessment. ➢ Able to use well a range of methods and techniques to come to conclusions. ➢ Evidence of study, comprehension, and synthesis beyond the bounds of what has been explicitly taught. ➢ Very good presentation of material. ➢ Able to employ critical analysis and judgement. ➢ Where group work is involved there is evidence of a productive individual contribution
D	50- 59	Lower Second	➢ Some limitations in attainment of learning objectives but has managed to grasp most of them. ➢ Able to use most of the methods and techniques taught. ➢ Evidence of study and comprehension of what has been taught ➢ Adequate presentation of material. ➢ Some grasp of issues and concepts underlying the techniques and material taught. ➢ Where group work is involved, there is evidence of a positive individual contribution.
E	40 - 49	Third	➢ Limited attainment of intended learning outcomes. ➢ Able to use a proportion of the basic methods and techniques taught. ➢ Evidence of study and comprehension of what has been taught but grasp insecure.

			➢ Poorly presented. ➢ Some grasp of the issues and concepts underlying the techniques and material taught, but weak and incomplete.
F	0 - 39	Fail	➢ Attainment of only a minority of the learning outcomes. ➢ Able to demonstrate a clear but limited use of some of the basic methods and techniques taught. ➢ Weak and incomplete grasp of what has been taught. ➢ Deficient understanding of the issues and concepts underlying the techniques and material taught. ➢ Attainment of nearly all the intended learning outcomes deficient. ➢ Lack of ability to use at all or the right methods and techniques taught. ➢ Inadequately and incoherently presented. ➢ Wholly deficient grasp of what has been taught. ➢ Lack of understanding of the issues and concepts underlying the techniques and material taught. ➢ Incoherence in presentation of information that hinders understanding.
G	0	Fail	➢ No significant assessable material, absent, or assessment missing a "must pass" component.

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Rubric

Tasks	100	Components	Description	Maximum Credit	Mark
Task 1	60	Basic Elements Implementation [34 marks]	Data loading & deriving	8	
			Scales with current domain and range for both axes	4	
			Axes with suitable position and length	8	
			Methods that show all attributes in one visualisation	7	
			Text that clearly presents the axes	5	
			Chart title and axes title	2	
		Visualisation Design [7 marks]	Marks design	2	
			Channels design	2	
			Colour choice	3	
		Interaction and Animation [12 marks]	Interaction	8	
			Animation	4	
		Code Quality [7 marks]	Only use required libraries to achieve requirements	2	
			Add clear comments with basic explanations before every part of codes	3	
			Well-documented	2	
Task 2	40	Data & Task Abstraction [10 marks]	Dataset types	2	
			Data types	3	
			Attributes and their types	3	
			Actions	2	
		Visualisation Analysis [20 marks]	Marks and channels	9	
			Interactions	6	
			Limitations	5	
		Comparison [10 marks]	Clearly present the result of the comparison	2	
			Explain reasons	8	
Late Submission?				☐ Yes ☐ No	Days late
Final Marks					