ASSIGNMENT BRIEF

HTU Course No: 10204311	HTU Course Name: Data Visualization
BTEC Unit Code:	BTEC UNIT Name:

Version: 3

Student Name/ID Number/Section	
HTU Course Number and Title	10204311 Data Visualization
BTEC Unit Code and Title	
Academic Year	2023-2024 Spring
Assignment Author	Rami Ibrahim
Course Tutor	Rami Ibrahim
Assignment Title	Building R project for data visualization
Assignment Ref No	1
Issue Date	14/05/2024
Formative Assessment dates	From 14/05/2024 to 30/05/2024
Submission Date	14/06/2024
IV Name & Date	Murad Yaghi 13/05/2024

Submission Format

1– The assignment should be submitted to the university's eLearning system within the deadline specified above from the link: https://elearning.htu.edu.jo . The assignment is in the form of:

2– A technical document: it must follow the guidelines below, and it should contain the sections described in the assignment brief. In your documents, you should use headings, paragraphs, and subsections as appropriate. The expected word limit is 2000-5000 words; although you will not be penalized for exceeding the total word limit, do your best to be within the word limit.

Your report should be:

   o In the form of a soft copy of a **WORD document** submitted to the university's eLearning system.
   o Written in a formal business style using single spacing and font size 12 times Roman.
   o Must be supported with research and referenced using the Harvard referencing system.

3– The R source code files used for data visualization.

4– The PowerPoint slides to communicate results and findings.

5- Signed declaration Form.

Unit Learning Outcomes

LO1 Recognize the fundamentals and cognitive psychology of data visualization.

LO2 Investigate the techniques of data visualization.

LO3 Build visualizations to encode data using static and interactive techniques.

LO4 Communicate findings from built visualizations in the report and oral presentation.

Assignment Brief and Guidance

Scenario:

You have been hired as a data analyst at an IT company that plans to produce visualizations for their data and use them to communicate findings and insights to stakeholders and decision-makers.

Your task is to analyze the provided data and produce static and interactive visualizations according to the proper design rules.

Below, you can find a detailed description of the assignment mapped to different assessment criteria:

1- Find two datasets, one generic and the other with geospatial data. The geospatial dataset should have geospatial coordinates (longitude, latitude) and corresponding attributes. **(Report and Project)**.

2- Follow the iterative approach (What, Why, How) and proper marks, channels, tasks, and design rules to design efficient visualizations for the selected datasets. **(Report and Project)**.

3- Build visualizations using R programming language and the designed visual encodings. **(Project)**.

4- Discuss how the iterative approach was used to build the visualizations, how it improved your design, and justify the selected designs compared to other preliminary designs. **(Report)**.

5- Discuss how you effectively used color as a channel for visual encoding, including different color map types. **(Report)**.

6- Analyze and draw insights and findings from your visualizations. **(Report)**.

7- Evaluate the impact of your analysis on the organization and decision-making process. **(Report)**.

8- You should communicate the analysis of your results by preparing a technical report and a PowerPoint presentation with ten slides or more. **(Report and Presentation)**.

Learning Outcomes and Assessment Criteria			
Learning Outcome	**Pass**	**Merit**	**Distinction**
LO1 Recognize the fundamentals and cognitive psychology of data visualization.	**P1** Explain the fundamental concepts of data visualization and its importance in decision-making for organizations. **P2** Explain the cognitive psychology behind data visualization.	**M1** Discuss the importance of selecting an appropriate visual design for a given task.	**D1** Evaluate the impact of generating visual representations to the organization and decision-makers.
LO2 Investigate the techniques of data visualization.	**P3** Discuss the techniques used to build data visualizations.	**M2** Assess the importance of using visualization techniques to create intuitive visualizations.	
LO3 Build visualizations to encode data using static and interactive techniques.	**P4** Describe the methods used to build data visualizations.	**M3** Assess the methods used to visualize other types of data.	**D2** Evaluate how good data visualization can tell the story and provide insights to the organization.
LO4 Communicate findings from built visualizations in the report and oral presentation.	**P5** Demonstrate the use of data visualization to provide insights and knowledge.	**M4** Communicate your findings and insights to different stakeholders.	