PRIFYSGOL
BANGOR
UNIVERSITY

Module Code:	ASB/ABJ-4012	**Assessment:**	Coursework: Project in R	**Weighting**:	50%
Module Title:	Coding for Business Applications				
Academic Year	2023/24				
Module Coordinator:	Heather He				
Method of Submission:	Electronic via Blackboard Turnitin				
Submission Due Date:	29 November 2023 23:59				
Word Limit:	The word limit does not apply to coding scripts or output notes.				

Reminder of Academic Misconduct:

You are reminded not to copy material from any sources without properly referencing it, as this constitutes plagiarism: cases of plagiarism will be referred to the Business School Academic Integrity Officer and will be subject to a deduction of marks, which can result in an overall mark of 0%.

Work submitted after the deadline:

Unauthorised late work: Work submitted up to 7 days after the original deadline without extension will be graded and given feedback, but the grade will be capped at 50% for postgraduate students. Work submitted after 7 days without a valid extension will still be given feedback but will be awarded a 0 grade (F4).

Authorised late work: If you feel you have legitimate grounds for an extension, then you must use the Request Centre to request an extension, and you must do so by the hand-in deadline.

This assessment relates to the following module learning outcomes (LOs):
LO1: Install, generate code, execute and recognize R Programming Language in R Studio IDE to perform basic tasks on Vectors, Matrices and Data frames.
LO2: Explain and implement key terminologies, concepts and techniques employed in Statistical Analysis.
LO4: Implement code for reading from and writing to Excel and CSV files.
LO5: Explain and implement methods for visualisation of data.

Coursework Brief

This project comprises 50% of the assessment weighting for the 20-credit module. The other elements of the module assessment is a Project in Python (50%). Please direct all your enquiries on the project to Heather He.

You must complete ALL the tasks listed in this brief. This assignment is about data analysis using R. Therefore, all data import/output, manipulation, exploration, and analysis must be conducted within R. You will lose credit if, for example, you use Excel to perform any of the data manipulation work.

You must use comments throughout your program to explain what you are doing. Include a comment at the top of your program to document when the program was written, your student ID and the purpose of the program.

Task 1 [20%]: Download the CDRC Residential Mobility Index LSOA 1997-2023 dataset from Consumer Data Research Centre and import the data into R. Please read the information supplied by the data provider, ensuring that you understand all aspects of the dataset. Note that the data is open source; however, you must create an account and log in to download the data.

Task 2 [20%]: Please examine the CDRC Residential Mobility Index dataset focusing on the LSOA code W01000092 Menai (Bangor). Based on the data, please identify the years during which the Index for the Menai (Bangor) area was greater than 0.5 and less than 0.8. Print the results out.

Task 3 [30%]: You are required to add two additional columns to the data:

- Column One should calculate the average Residential Mobility Index for each region from 1997 to 2022.
- Column Two should categorize each region into "Low", "Medium" or "High" based on the calculated average index as follows:
    o "Low": Average index value is less than or equal to 0.2.
    o "Medium": Average index value is more than 0.2 and less than or equal to 0.5.
    o "High": Average index value is more than 0.5.

Task 4 [30%]: Do you have any interesting insights to add based on the information given by the dataset? Generate **two charts** to illustrate your idea. Each chart should be complemented with a brief interpretation (no more than 100 words). The chart should have the following attributes:

- Title
- Axis, including axis labels
- Legend.

You could add other attributes to your charts. You could also add notes to assist the interpretation of the charts.

Instructions

Submit to Blackboard:

- **An R script file in .R format containing your codes. You must submit the R script file to the 'R Script Submission' tab on blackboard.** Failure to submit this file will result in reduction to your marks.

- A single pdf document containing (i) the text of your R codes; and (ii) the outputs of your responses to Tasks 1-4 (e.g., the charts). You must submit the pdf document to the Turnitin submission tab on Blackboard.

- Please name your files using your student ID number, e.g. 500123456.R or 500123456.PDF. Do not include your name.

- You are allowed to test submit your assignment via Turnitin before the due date. You can use Turnitin to check your assignment for plagiarism before you submit your final version. The last submission prior to the deadline will be treated as the final submission and will be the copy that is assessed by the marker.