

**BUSINESS
INTELLIGENCE ANALYST****Application Test for Business Intelligence
Analyst Position****Data Analysis and Writing Test (total estimated time: 2 hours)**

You have 24 hours to complete this assignment. The 24-hour countdown begins after this document and associated data file are sent to you.

Send the three outputs (data script, plot of data and short writing up) directly to Bruno Scheibler at bruno.scheibler@lmic-cimt.ca.

If an issue or emergency arises and you are not able to complete the assignment within the 24-hour window, email LMiC as soon as possible to let us know of the delay.

There are two elements to this test (A and B) which are explained below:

A) Data Analysis

Objective: Using the data provided, generate a data visualization in a scripting language of your choice (e.g., R, Python, SAS, Stata, etc.)

Deliverable:

- a) script file containing all loading, processing and export steps (e.g., *.do, *.r, *.py, etc.)
- b) data visualization file(s) (e.g., *.png, *.jpeg, etc.)

Time Allotment: A maximum of one and a half (1.5) hours

Detailed Instructions:

- Generate **bar graph(s)** showing **the monthly change in employment for three (3) sectors within each province from January 2020 to September 2020**. The three sectors are: Wholesale and retail trade, Accommodation and food services, and Other services (except public administration).
- If you detect data entry errors in either the employment category variable or the employment numbers, carry out appropriate data cleaning prior to creating the visualization.
- All data manipulations and calculation of variables must be done in the scripting language of choice. No changes should be made to the data in the CSV file prior to loading it into your data environment

- The final script should show all steps in the process: loading the data, manipulating the data and calculating required variables, generating the plot, and exporting the plot image. Including explanatory comments within the script is recommended, but not required.

B) Writing Assignment

Objective: Write a short e-mail to a federal government employment agency explaining relevant takeaway points from the data visualization.

Deliverable:

- a) MS Word file with the subject heading and body text of an e-mail

Time Allotment: A maximum of one half (0.5) hour

Detailed Instructions:

- **Describe** the patterns observed in the plot generated, and **provide some discussion** as to how this might be relevant to a federal stakeholder who will be using this data to target at-risk populations.
- The e-mail can be written in the language of your choice (English or French)
 - o If written in **English**, the e-mail should be between **100 and 300 words** in length
 - o If written in **French**, the e-mail should be between **200 and 400 words** in length
- Formatting of the text in the Word document does not matter.