BUS 5400 – Communications and Data Visualization

Project: Data Visualization for Decision Making Using Power BI

This group-based project helps you analyze in greater depth the concepts you learned in Power BI. It will also enhance your independent research, problem solving, requirements and objectives elicitation, and practical skills.

Requirements

The Quality of Life (QoL) Framework for Canada brings together data for more than 80 key indicators on the well-being of people in Canada. This Framework enables the federal government to identify future policy priorities and to build on previous actions to improve evidence-based decision making and budgeting. The framework is found in Statistics Canada's Quality of Life (QoL) Hub, located at https://www160.statcan.gc.ca/index-eng.htm.

Task 1 (100%): Your group task is to design and implement an Analytical Power BI Dashboard about the QoL in Canada based on: a) Canada's QoL framework, b) your study of the course resources, and c) the group collective innovative skills. Your dashboard should contain 6 pages, one home (summary) page and one page for each of the 5 dimensions categorized in Canada's Quality of Life Framework. The content of each page should present the data to data analysts whom are responsible for reviewing the trends in statistics and helping the government make better business decisions. To do so, you'll need to:

1. Read a couple of resources about visualizing data for decision making, including our course material.
2. Explore the QoL Hub and QoL framework.
3. Read all of the requirements, conduct a group meeting, divide the tasks (equally), and craft a project Gantt chart (aka project management roadmap). Make sure the responsibilities are assigned to group members equally and are not highly overlapped.
4. Connect to Statistics Canada API; get, clean, and transform the data, publish the data to a data model, design and implement Power BI report, publish the report to Power BI service and prepare the analytical dashboard. Share your dashboard link in your solution document.
5. Make sure your drawings are clear, easily readable, use proper color palette, and communicate the data clearly.
6. Record 6 minutes group video presentation (every member should participate equally) in which you are presenting your work, including each page of the report, challenges faced, and conclusions.

Submission

1. Prepare your group video presentation, upload it to any cloud/internet storage website that can play the video online (e.g youtube)
2. Create your solution document, at the first page of the document, add the project title, member names, links to the dashboard and your group video presentation. In the next pages, add your project Gantt chart, then in next pages add the DAX codes used to transform your data, screenshots of the dashboard (6 pages), challenges faced, conclusion and references.
3. Submit your solution document to the project dropbox and include links to your shared dashboard and your group video presentation in the submission note.

Notes:

- A tutorial on "How to Use Statistics Canada Data in Power BI" is found in
  https://iterationinsights.com/article/how-to-use-statistics-canada-data-in-power-bi/
- In statcat.gc.ca,
  - The word "cube" is used interchangeably with the word "table" and is a reference to data tables that are stored in Statistics Canada's database.
  - Product Identification number (PID) is a unique product identifier for all Statistics Canada products, including large multidimensional tables. The first two digits refer to a subject, the next two digits refer to product type, the last four digits refer to the product itself.
  - Vector is a short identifier to refer to a time series of data points. Unique variable length reference code, consisting of the letter 'V', followed by up to 10 digits. (i.e. V1234567890, V1, etc.)
  - For data points requiring decimal representation, the value in the data returned has the decimal applied. However, by design, an additional separate, specific decimal precision field is also included in the returned data structure in order to explicitly identify the decimal precision for each data point.
- You may also refer to statcan.gc.ca's Web Data Service (WDS) User Guide found at
  https://www.statcan.gc.ca/en/developers/wds/user-guide

Rubric

	Unsatisfactory (0-40%)	Satisfactory (40-60%)	Good (80%)	Excellent (100%)
Requirements met 60%	• Completed less than 60% of the requirements • Does not execute or play due to errors	• Completed most of the requirements, • Solution can be improved, or No clear signs of proper group-based research	• Completed all of the requirements but solutions could have been better if further research or work was conducted	• Exceptional solution that shows signs of excellent research, group work and innovation • All requirements were met perfectly
Solution efficiency 40%	• A difficult, not easy to comprehend, or inefficient solution	• An acceptable solution, but not very efficient	• Solution is just fine, but can be enhanced	• Solution is efficient, easy to comprehend, and well designed
Submission 100%	• Not submitted, Improper, or incomplete submission	• Incorrect format or misrepresented solution or screenshots	• Submission instruction not followed precisely, or can be improved	• Proper submission, well presented and following all of the requirements