**DATA 2205**

**Assignment 1: Visualization (20%)**

**Purpose**

To demonstrate your skills in using Microsoft PowerBI to create professional visualizations.

**Background**

You have been retained by the RCMP (federal police) to help determine how to better work with and support the police that operate in the different provinces – namely **Ontario, Alberta, and Manitoba**. You will be providing the data to Officer Ricard. Officer Ricard expects you to prepare a formal presentation for what you uncover. Focus your analysis on one **specific crime** rather than on all available crimes combined.

**Instructions**

1. Create visualizations that will allow Officer Richard to achieve the following:

* Compare the crime rates between **Manitoba, Ontario, and Alberta** in the last 10 years.
* Compare the crime rates for the top 3 cities for Manitoba, the top 3 cities for Ontario, and the top 3 cities for Alberta with the highest crime in the last 10 years.
* Determine if there is a correlation between youth crime and adult crime for each high crime rate city
* Determine the crime rate for next year for Manitoba, Ontario, and Alberta.

2. Use Power BI desktop to import data and create visualizations, then use Windows Snipping tool or any other screen capture tool to export your charts to your report.

3. Use data from <http://www.statcan.gc.ca/eng/subjects/crime_and_justice>. Download the entire table as CSV datasets. Refer to class recording/practice on how to use Power Query to load and transform data with Power BI.

* Incident-based crime statistics, by detailed violations and police services, Ontario, annual (Number)
* Incident-based crime statistics, by detailed violations and police services, Alberta, annual (Number)
* Incident-based crime statistics, by detailed violations and police services, Manitoba, annual (Number)
* Use data at the provincial level (Ontario, Manitoba, Alberta).
* Use data for only three of the highest crime rate cities for a province.

4. Put it in word or pdf format and submit to DC Connect

**Recommended Outline**

1. Introduction: Summary of the whole presentation. (~100 words)
2. Justification for the Visualization tool (~75 words)
3. Explanation of data analysis / visualization approach (~100-150 words)
4. Report findings (use embedded visualizations and narrative to highlight insights)
5. Crime Rate prediction: Predict amount of crime for Manitoba, Ontario, and Alberta from a province perspective (~100-200 words)
6. Conclusion

\* Keep in mind that you are not preparing this report for the instructor, this report is for RCMP officer.

**Grading Rubric**

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| --- | --- | --- | --- | --- | --- |
|  | **5** | **4** | **3** | **1** | **0** |
| **Accuracy** | Uses the correct data. | Uses correct data, but some minor mistakes may be present. | Data contains one or two significant mistakes or omissions. | Data is not correct, not relevant, or misleading. | Did not do. |
| **Completeness** | Follows the recommended outline. Uses the correct data. Uses an appropriate choice of tool. | Follows the recommended outline with all sections present but not complete. May have used Tableau instead of the tool choices provided. | Follows the recommended outline with some sections missing or incomplete. | Does not follow the recommended outline with many sections missing or incomplete. | Did not do. |
| **Visualizations** | Visualizations are clear, easy to understand, and relevant. Choice of tool is appropriate for the topic. Exploits the advantages of the tool to create emphatic visualizations. | Visualizations are clear and understandable. Visualizations are relevant. Visualizations lacking emphasis. | Visualizations are mostly clear and understandable, with some weaknesses. Visualizations may not be the best choice to support conclusions. Doesn’t exploit the advantages of the tool. Visualizations lacking emphasis. | Visualizations are not clear. Choice of tool may not be the best for the topic. Doesn’t exploit the advantages of the tool. Visualizations lacking emphasis. | Did not do. |
| **Communication** | Text is clearly presented and persuasive. Clear paragraphs. Grammar and spelling are accurate.  Professional. Appropriate use of rhetorical devices to enhance communication. | Text somewhat clearly presented and persuasive. Grammar and spelling are accurate. Some paragraphs are not clearly organized. No use of rhetorical devices. | Text has minor grammar and spelling issues. Some sentences and paragraphs lack clarity. | Text has some grammar and spelling issues. Sentences and paragraphs lack clarity. Somewhat unpersuasive. | Did not do. |