The Canadian Landscape

For Data Analytics Careers

2019 January 20

|  |
| --- |
|  |

Project 2 ETL

Final Report

The 6 in the Six

Jesse Gray

Sara Hokaveme

Laurel Lobo

Jose Tomines

***“Choose a job you love, and you will never have to work a day in your life.”***

*- Confucius*

Title of Article from Harvard Business Review: “Data Scientist: The Sexiest Job of the 21st Century:. These are the types slogans and buzz that are bombarding social and business media. This project seeks to uncover the Canadian landscape for those who are seeking careers in this emerging high tech area. By analyzing data jobs being offered in websites like Indeed.com, and correlating them to the population and quality of life data where they are being offered, this project hopes to illuminate where the best opportunities and earning power can be found in Canada.

Table of Contents

[1 Introduction 3](#_Toc535710609)

[2 Methods 4](#_Toc535710610)

[2.1 Extraction & Transformation of Data Analytics JOBS 4](#_Toc535710611)

[2.2 Extraction & Transformation of Location Data 4](#_Toc535710612)

[2.2.1 Extraction & Transformation of Cost of Living Data from Numbeo 4](#_Toc535710613)

[2.2.2 Extraction & Transformation of Popuation Data from Stats Canada 4](#_Toc535710614)

[2.2.3 Merging of Cost of Living Population Data based on Canadian Location 4](#_Toc535710615)

[2.2.4 Aggregation of Cost of Living & Population Data Based on Provinces 4](#_Toc535710616)

[2.3 Loading of data to sql database 5](#_Toc535710617)

[2.3.1 Sub Folder a 5](#_Toc535710618)

[2.3.2 Sub Folder 5](#_Toc535710619)

[3 Findings 6](#_Toc535710620)

[3.1 Job DistriBution Across Canada 6](#_Toc535710621)

[3.2 Average Salaries Across Canada 6](#_Toc535710622)

[3.3 Locations with most opporutnities 6](#_Toc535710623)

[3.4 Locations with most earning power 6](#_Toc535710624)

[4 Conclusions 7](#_Toc535710625)

[5 Discussion 8](#_Toc535710626)

[5.1 Issues with Job data 8](#_Toc535710627)

[5.2 Incompleteness of Numbeo Data 8](#_Toc535710628)

[5.3 Issues regarding correlating data from different sources 8](#_Toc535710629)

[6 aPPENDIX A: Script EXECUTION PLAN 9](#_Toc535710630)

[7 aPPENDIX B: Repository Folder Structure 10](#_Toc535710631)

[8 aPPENDIX C: sql db mODEL 11](#_Toc535710632)

1. Introduction

Inspired by

1. Methods

Using the ETL processes, the following tasks were done:

1. Extraction of the Data Analytics positions and salaries from job search websites
2. Extraction of the Cost of Living information for Canadian cities from Numbeo website
3. Extraction of the population information for Canadian locations from Statistics Canada website
4. Transformation of the Data Analytics positions data focusing on locations and salary into a dataframe
5. Amalgamation and transformation of the Cost of Living and population data into a dataframe based on Canadian Locations and their provinces/territories.
6. Transformation Cost of Living and population dataframe to produce a dataframe of aggregated data for each province/territory.
7. The Load of all dataframes into a SQL database
8. The use of matplotlib for visualization of the relationship between Data Analytics open positions, their locations, and their related cost of living and population information, through database queries

The methods are described in greater detail below:

* 1. Extraction & Transformation of Data Analytics JOBS

Blah Blah Blah

* 1. Extraction & Transformation of Location Data

The final scenario used for the official test consisted of 10 vusers of script ALCR2 and 10 vusers of script ALCR3, ramping in at a rate of 1 vuser every 30 seconds, with a steady state of 30 minutes, and

* + 1. Extraction & Transformation of Cost of Living Data from Numbeo
    2. Extraction & Transformation of Popuation Data from Stats Canada
    3. Merging of Cost of Living Population Data based on Canadian Location
    4. Aggregation of Cost of Living & Population Data Based on Provinces
  1. Loading of data to sql database

The following list the changes or issues that impacted the originally intended test plan.

* + 1. Sub Folder a
    2. Sub Folder

1. Findings

The following data relationships were explored:

1. The Distribution of Data Analytics Jobs Across Canada
2. The Comparison of Data Analytics Average Salaries Across Canada
3. The Top 5 Cities with the most Data Analytics Job Opportunites
4. The Top 5 Cities with the most Earning Power for Data Analytics Jobs

Visualization of these relationships will show the locations in Canada where people desiring a Data Analytics career will have the best opportunities to not only find a job, but to have a higher quality of life.

* 1. Job DistriBution Across Canada
  2. Average Salaries Across Canada
  3. Locations with most opporutnities
  4. Locations with most earning power

1. Conclusions
2. Discussion

The following are items and issues that were encountered during this project, and should be further discussed to provide insight on the observations and conclusions.

* 1. Issues with Job data
  2. Incompleteness of Numbeo Data
  3. Issues regarding correlating data from different sources

1. aPPENDIX A: Script EXECUTION PLAN

The following are the script designs of the three scripts used in the performance testing. This provides a clear understanding of the steps used when recording the script, the data selected during recording, the variable names used, data preparation instructions, and the LoadRunner transaction names and the functional steps they comprise.

The first script could not be recorded as a LoadRunner script, but the script design document provided clear instructions on how to manually execute the functionality.

1. aPPENDIX B: Repository Folder Structure
2. aPPENDIX C: sql db mODEL

The following is the SQL Data Model used in this project: