**Data Exploration Example**

Canadian Occupation Projection System (COPS)

* The COPS tables allow you to identify occupations by 4-digit National Occupation Classification (NOC) code and by occupation name.
* The projections for all of the occupations are located in the “Ontario occupational projections\_Full data set.xlxs” spreadsheet while the “Ontario occupational projections\_Small data set.xlxs” only lists the 147 occupations with data in common to the data sets in this exercise.
* The “Employment” worksheet shows forecast employment levels for the 2013 to 2022 period, while 2012 is the actual historical value. Similarly, the other worksheets provide forecasted employment change, attrition and total job openings.
* For example, it was projected that there would be 23,933 Licensed Practical Nurses (NOC 3233) employed in Ontario in 2017 which represented a decrease of 20 individuals employed as Licenced Practical Nurses from 2016.
* It was also expected that 525 retiring Licenced Practical Nurses would need to be replaced. Therefore, it was projected that there would be 505 total job openings for Licensed Practical Nurses in Ontario.
* Some relationships:
  + Employment changet = Employmentt - Employmentt-1
  + Total job openingst = Employment changet + Attritiont

Ontario Job Futures (OJF) Prospect Ratings

* The spreadsheet “2013 OJF Prospect Ratings.xlsx” contains employment prospect ratings for the 2013 to 2017 period. Of the 147 occupations with complete data in this exercise, 89 had been assessed with employment prospect ratings.
* For example, the Licensed Practical Nurses (NOC 3233) occupation was assessed to have an “average” employment rating.
* This rating was based on the data for the occupational projections presented in the spreadsheet as well as historical information that summarized the labour market conditions such as unemployment rate, wage changes and employment growth (these data are not included).

Employment Profiles

* This spreadsheet includes respondent data aggregated by program of study and program cluster. Therefore it is possible to analyze labour market outcomes by program or cluster but not by occupations that graduates end up working in. Employment outcomes are measured at 6 months after graduation.
* For example, the Program Cluster (CI), “Nursing and Related” is assigned a program code H04. (Programs are grouped into 58 different clusters. See Row 772 in “Names” worksheet.)
* Available information for the H04 program includes: time needed to get a job, employment and unemployment rate, average annual earnings for those employed full-time and student satisfaction rate.
* According to the data, the annual average salary of graduates of H04 from 2014-15 that were working full time was $42,500.
* Although in this case, it is fairly evident that the “Nursing and Related” cluster would be the appropriate pathway to the License Practical Nurses occupation, one could also use occupational information contained in this data set to find relevant programs. For example, one can search for NOC 3233 in the “Cluster Destination” or “Program Destination” worksheets.

Skills Passport

* The skills passport spreadsheet allows you to identify skills requirements for a given occupation. Occupations can be identified by 4-digit NOC code (column heading “NOC\_CD”) and/or occupation title (column heading “Title”). Skills requirements are organized in up to fifteen distinct skills sets (including: reading text, writing, document use, computer use, and numerical estimation).
* For example, the spreadsheet shows that the numerical estimation requirements for Licenced Practical Nurses (NOC 3233) are as follows: “Estimate quantities of materials and equipment needed for job tasks, e.g. estimate the number of dressings needed for a particular dressing change.” This task has a complexity rating of 1.

College Enrolment

* Although the data in this spreadsheet is not directly comparable with employment profiles, it can be used to produce enrolment counts by institution over various socioeconomic and geographic variables (age, gender, country of citizenship, and mother tongue).

College Institutions

* This spreadsheet contains geographical information for all colleges. This could be used for GIS mapping, though it does not include longitude and latitude coordinates.
* Please note that satellite campuses are not included in the spreadsheet, however you can find a listing of each college satellite campus in the college enrolment database.

OSAP

* The OSAP database provides student loan default rates, repayment assistance take-up rates, and total loan default and repayment assistance take-up rates by program for three unidentified colleges. For example, the combined loan default and repayment assistance rate for the Practical Nursing program at College C is 44.1%.
* This data could possibility be used to develop a tool that allows users to quickly access information on loan default and repayment assistance rates by college program.
* Please note that it would be misleading to look at default rates without repayment assistance rates and vice versa, as both should be taken into consideration when assessing loan burden by program.
* In addition, program level rates should not be combined across colleges as the programs offered by different colleges are not always directly comparable (e.g. a program may differ in duration).