

Team Belleville Testing Document

April 10, 2017

Small tests are checking whether or not the program can take incorrect input from the user. If the user enters any incorrect input, the program should not break.

Main tests are checking the functionality of the entire program and will see if correct output is displayed.

Note that Census data does not currently work neither do the pre made questions options. Also there are no graphs either because that code has not been implemented yet.

Main Test Cases:

What is the total amount of people each year responsible for all violations in Canada from 1998 - 2015?

On a csv file:

```
"Canada","Total, all violations","1998","2688540.00",
"Canada","Total, all violations","1999","2576445.00",
"Canada","Total, all violations","2000","2570663.00",
"Canada","Total, all violations","2001","2602571.00",
"Canada","Total, all violations","2002","2606967.00",
"Canada","Total, all violations","2003","2699428.00",
"Canada","Total, all violations","2004","2680221.00",
"Canada","Total, all violations","2005","2608741.00",
"Canada","Total, all violations","2006","2606887.00",
"Canada","Total, all violations","2007","2534730.00",
"Canada","Total, all violations","2008","2485043.00",
"Canada","Total, all violations","2009","2448654.00",
"Canada","Total, all violations","2010","2379130.00",
"Canada","Total, all violations","2011","2275917.00",
"Canada","Total, all violations","2012","2244458.00",
"Canada","Total, all violations","2013","2098776.00",
"Canada","Total, all violations","2014","2052925.00",
"Canada","Total, all violations","2015","2111021.00",
```

Correct output

What is the total amount of people each year responsible for Possession of Cannabis in Saskatchewan every year?

"Saskatchewan","Possession, cannabis","1998","1092.00",
"Saskatchewan","Possession, cannabis","1999","1348.00",
"Saskatchewan","Possession, cannabis","2000","1346.00",
"Saskatchewan","Possession, cannabis","2001","1619.00",
"Saskatchewan","Possession, cannabis","2002","2189.00",
"Saskatchewan","Possession, cannabis","2003","2014.00",
"Saskatchewan","Possession, cannabis","2004","1836.00",
"Saskatchewan","Possession, cannabis","2005","1437.00",
"Saskatchewan","Possession, cannabis","2006","1523.00",
"Saskatchewan","Possession, cannabis","2007","1614.00",
"Saskatchewan","Possession, cannabis","2008","1630.00",
"Saskatchewan","Possession, cannabis","2009","1549.00",
"Saskatchewan","Possession, cannabis","2010","1886.00",
"Saskatchewan","Possession, cannabis","2011","2184.00",
"Saskatchewan","Possession, cannabis","2012","2018.00",
"Saskatchewan","Possession, cannabis","2013","2156.00",
"Saskatchewan","Possession, cannabis","2014","2016.00",
"Saskatchewan","Possession, cannabis","2015","1614.00",

Correct output

What is the total amount of people in Newfoundland and Labrador responsible for Total drug violations from 1998-2008?

"Newfoundland and Labrador","Total drug violations","1998","823.00",
"Newfoundland and Labrador","Total drug violations","1999","876.00",
"Newfoundland and Labrador","Total drug violations","2000","990.00",
"Newfoundland and Labrador","Total drug violations","2001","922.00",
"Newfoundland and Labrador","Total drug violations","2002","901.00",
"Newfoundland and Labrador","Total drug violations","2003","817.00",
"Newfoundland and Labrador","Total drug violations","2004","827.00",

"Newfoundland and Labrador","Total drug violations","2005","867.00",
"Newfoundland and Labrador","Total drug violations","2006","667.00",
"Newfoundland and Labrador","Total drug violations","2007","867.00",
"Newfoundland and Labrador","Total drug violations","2008","1070.00",

Correct Output

What is the rate per 100000 in which people are caught for possession of cocaine in Ontario in 2000?

DATA REQUIRED NOT FOUND!

Correct Output

How many people are caught for murder in the first degree in Quebec in 2000 compared to the amount of people caught in 2008?

DATA REQUIRED NOT FOUND!

Correct Output

How many people are caught for total prostitution in Quebec in 2001 compare to people caught in 2012?

DATA REQUIRED NOT FOUND!

Incorrect Output, Quebec data for this exists.

How many people are caught for total prostitution in Quebec from 1998 - 2015?

"Quebec","Total prostitution","1998","780.00",
"Quebec","Total prostitution","1999","847.00",
"Quebec","Total prostitution","2000","865.00",
"Quebec","Total prostitution","2001","682.00",

"Quebec","Total prostitution","2002","833.00",
"Quebec","Total prostitution","2003","1169.00",
"Quebec","Total prostitution","2004","1595.00",
"Quebec","Total prostitution","2005","1280.00",
"Quebec","Total prostitution","2006","1502.00",
"Quebec","Total prostitution","2007","1163.00",
"Quebec","Total prostitution","2008","652.00",
"Quebec","Total prostitution","2009","563.00",
"Quebec","Total prostitution","2010","384.00",
"Quebec","Total prostitution","2011","391.00",
"Quebec","Total prostitution","2012","332.00",
"Quebec","Total prostitution","2013","228.00",
"Quebec","Total prostitution","2014","123.00",
"Quebec","Total prostitution","2015","21.00",

Correct Output

A man wants to move to Newfoundland and Labrador in 2010, but he does not know how dangerous it is. How many total incidents have there been in Newfoundland in 2010?

No Output

Incorrect Output - Info Exists

A drug dealer wants to smuggle his shipment of Cannabis into Halifax, Nova Scotia in 2012. How many people have been caught for possession of Cocaine in Nova Scotia in 2012?

DATA REQUIRED NOT FOUND!

Incorrect Output - Info Exists

What is the total amount of first degree murders in Canada from 2000 - 2015?

"Canada","Murder, first degree","2000","295.00",
"Canada","Murder, first degree","2001","278.00",
"Canada","Murder, first degree","2002","310.00",
"Canada","Murder, first degree","2003","277.00",
"Canada","Murder, first degree","2004","330.00",
"Canada","Murder, first degree","2005","313.00",
"Canada","Murder, first degree","2006","286.00",
"Canada","Murder, first degree","2007","300.00",
"Canada","Murder, first degree","2008","293.00",

"Canada","Murder, first degree","2009","279.00",
"Canada","Murder, first degree","2010","250.00",
"Canada","Murder, first degree","2011","263.00",
"Canada","Murder, first degree","2012","243.00",
"Canada","Murder, first degree","2013","209.00",
"Canada","Murder, first degree","2014","230.00",
"Canada","Murder, first degree","2015","272.00",

Correct Output

What is the total amount of people that perform second degree murders in Canada from 1998 - 2015?

"Canada","Murder, second degree","1998","214.00",
"Canada","Murder, second degree","1999","199.00",
"Canada","Murder, second degree","2000","193.00",
"Canada","Murder, second degree","2001","226.00",
"Canada","Murder, second degree","2002","211.00",
"Canada","Murder, second degree","2003","208.00",
"Canada","Murder, second degree","2004","219.00",
"Canada","Murder, second degree","2005","279.00",
"Canada","Murder, second degree","2006","272.00",
"Canada","Murder, second degree","2007","239.00",
"Canada","Murder, second degree","2008","262.00",
"Canada","Murder, second degree","2009","261.00",
"Canada","Murder, second degree","2010","239.00",
"Canada","Murder, second degree","2011","266.00",
"Canada","Murder, second degree","2012","232.00",
"Canada","Murder, second degree","2013","258.00",
"Canada","Murder, second degree","2014","235.00",
"Canada","Murder, second degree","2015","254.00",

Correct Output

What is the percentage change of overall crime in Canada from 1998 - 2002?

"Canada","Total, all violations","1998","2688540.00",
"Canada","Total, all violations","1999","2576445.00",
"Canada","Total, all violations","2000","2570663.00",
"Canada","Total, all violations","2001","2602571.00",
"Canada","Total, all violations","2002","2606967.00",

Incorrect Output - This is data for total amount people that committed a crime within the range of 1998 - 2002.

What are total people charged for anal intercourse in Newfoundland and Labrador in 2010?

WARNING: DATA REQUIRED NOT FOUND!

Incorrect Output - This data exists

How many people are charged with a crime in Quebec from 1998 - 2015?

"Quebec","Total, all violations","1998","505388.00",
"Quebec","Total, all violations","1999","473753.00",
"Quebec","Total, all violations","2000","479610.00",
"Quebec","Total, all violations","2001","469784.00",
"Quebec","Total, all violations","2002","461676.00",
"Quebec","Total, all violations","2003","466845.00",
"Quebec","Total, all violations","2004","461780.00",
"Quebec","Total, all violations","2005","457162.00",
"Quebec","Total, all violations","2006","468037.00",
"Quebec","Total, all violations","2007","452899.00",
"Quebec","Total, all violations","2008","461175.00",
"Quebec","Total, all violations","2009","457412.00",
"Quebec","Total, all violations","2010","440303.00",
"Quebec","Total, all violations","2011","424040.00",
"Quebec","Total, all violations","2012","420295.00",
"Quebec","Total, all violations","2013","383203.00",
"Quebec","Total, all violations","2014","354417.00",
"Quebec","Total, all violations","2015","345122.00",

Correct Output

What are the total violations people have been charged with in Halifax, Nova Scotia in 2012?

No Output

Incorrect Output, information exists

How many people have been cause for trafficking crystal meth in Canada from 1998 - 2015?

WARNING: DATA REQUIRED NOT FOUND!

Incorrect Output, the Information exists

How many offenses for Other prostitution have been recorded in Canada in the years 2005 - 2007?

"Canada","Other prostitution","2005","5269.00",
"Canada","Other prostitution","2006","5125.00",
"Canada","Other prostitution","2007","4134.00",

Correct Output

A family is deciding whether or not they want to raise their kids in Prince Edward Island. They want to look at it's history of total mischief from 1998 - 2015. How many times has Total mischief been recorded from 1998 - 2015 in P.E.I?

"Prince Edward Island","Total mischief","1998","1414.00",
"Prince Edward Island","Total mischief","1999","1784.00",
"Prince Edward Island","Total mischief","2000","1706.00",
"Prince Edward Island","Total mischief","2001","1615.00",
"Prince Edward Island","Total mischief","2002","1836.00",
"Prince Edward Island","Total mischief","2003","2052.00",
"Prince Edward Island","Total mischief","2004","2096.00",
"Prince Edward Island","Total mischief","2005","2270.00",
"Prince Edward Island","Total mischief","2006","2197.00",
"Prince Edward Island","Total mischief","2007","2181.00",
"Prince Edward Island","Total mischief","2008","1920.00",
"Prince Edward Island","Total mischief","2009","1961.00",
"Prince Edward Island","Total mischief","2010","1821.00",
"Prince Edward Island","Total mischief","2011","2025.00",
"Prince Edward Island","Total mischief","2012","1823.00",
"Prince Edward Island","Total mischief","2013","1535.00",
"Prince Edward Island","Total mischief","2014","1339.00",
"Prince Edward Island","Total mischief","2015","1220.00",

Correct Output

How many violations in Canada have been committed per 100000 people from 1998 - 2015?

"Canada","Total, all violations","1998","2688540.00",
"Canada","Total, all violations","1999","2576445.00",
"Canada","Total, all violations","2000","2570663.00",
"Canada","Total, all violations","2001","2602571.00",
"Canada","Total, all violations","2002","2606967.00",
"Canada","Total, all violations","2003","2699428.00",
"Canada","Total, all violations","2004","2680221.00",
"Canada","Total, all violations","2005","2608741.00",
"Canada","Total, all violations","2006","2606887.00",
"Canada","Total, all violations","2007","2534730.00",
"Canada","Total, all violations","2008","2485043.00",
"Canada","Total, all violations","2009","2448654.00",
"Canada","Total, all violations","2010","2379130.00",
"Canada","Total, all violations","2011","2275917.00",
"Canada","Total, all violations","2012","2244458.00",
"Canada","Total, all violations","2013","2098776.00",
"Canada","Total, all violations","2014","2052925.00",
"Canada","Total, all violations","2015","2111021.00",

Incorrect Output - This shows the total amount of people charged for all crimes occurring in Canada.

How many records of theft of 5000 or under from a motor vehicle have there been from 1998 - 2015?

"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","1998","709.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","1999","886.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2000","1003.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2001","938.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2002","823.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2003","931.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2004","1143.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2005","902.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2006","702.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2007","705.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2008","956.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2009","843.00",

"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2010","952.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2011","1087.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2012","1161.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2013","1489.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2014","989.00",
"Prince Edward Island","Theft \$5,000 or under from a motor vehicle","2015","716.00",

Correct Output

What are the occurrences of shoplifting of large amounts of money in Prince Edward Island from 1998 - 2015?

"Prince Edward Island","Shoplifting over \$5,000","1998","5.00",
"Prince Edward Island","Shoplifting over \$5,000","1999","12.00",
"Prince Edward Island","Shoplifting over \$5,000","2000","3.00",
"Prince Edward Island","Shoplifting over \$5,000","2001","4.00",
"Prince Edward Island","Shoplifting over \$5,000","2002","1.00",
"Prince Edward Island","Shoplifting over \$5,000","2003","3.00",
"Prince Edward Island","Shoplifting over \$5,000","2004","1.00",
"Prince Edward Island","Shoplifting over \$5,000","2005","..",
"Prince Edward Island","Shoplifting over \$5,000","2006","4.00",
"Prince Edward Island","Shoplifting over \$5,000","2007","2.00",
"Prince Edward Island","Shoplifting over \$5,000","2008","3.00",
"Prince Edward Island","Shoplifting over \$5,000","2009","2.00",
"Prince Edward Island","Shoplifting over \$5,000","2010","3.00",
"Prince Edward Island","Shoplifting over \$5,000","2011","0.00",
"Prince Edward Island","Shoplifting over \$5,000","2012","2.00",
"Prince Edward Island","Shoplifting over \$5,000","2013","1.00",
"Prince Edward Island","Shoplifting over \$5,000","2014","2.00",
"Prince Edward Island","Shoplifting over \$5,000","2015","1.00",

Output is Correct

The small test is passed if the user enters incorrect input and the program repeats the question or prints "Incorrect Output".

Basically used to check if the code can break by using any different type of input whenever the program prompts the user for input.

Testing for the program:

Small Test 1:

1. First Input test

- input an integer
 - input a character not asked by the program
 - input character asked by program in different case
 - input correct character followed by an integer
 - input correct character followed by null character
 - input special characters such as @ or \$
 - Typing very long input to see if the program breaks
2. First Input test after hitting 'C'
 - Typing an integer not asked by the program
 - Typing a character
 - Typing the actual words of "Every Crime" or "Only"
 - Typing special characters such as @ or \$
 - Typing correct input followed by other characters
 - Typing many characters attempting to break the program
 3. Input test after hitting '1'
 - Typing an integer not asked by the program
 - Typing a character
 - Typing the actual words of "Every Location" or "Only"
 - Typing special characters such as @ or \$
 - Typing correct input followed by other characters
 - Typing many characters attempting to break the program
 4. Input test after hitting '1' again
 - Typing an integer not asked by the program
 - Typing a character
 - Typing the actual words of "Every Year" or "Specific Year" or "Range of Years" or Two different years"
 - Typing special characters such as @ or \$
 - Typing correct input followed by other characters
 - Typing many characters attempting to break the program

Small Test 1 Passed

Small Test 2:

1. Testing valid input after hitting "C" instead of hitting "1", hit "2"
 - Typing integers
 - Typing many characters attempting to break the program

- Typing special characters
- Typing "S" without entering any crimes
- Typing a single character

2. Testing after finishing entering crime. Instead of every location in Canada, Choose specific.

- Typing integers
- Typing many characters attempting to break the program
- Typing special characters
- Typing "S" without entering any locations
- Typing a single character
- Typed short form locations such as "P.E.I."

3. Testing year range instead of every, choosing specific

- Typing incorrect integers
- Typing many characters attempting to break the program
- Typing special characters
- Typing a single character
- Typing years outside the range

Small Test 2 Passed

Small Test 3

1. Testing the inputs for when the program is looking for years
(After typing 3 when the program asks to select the year range)
When typing the first year:

- Typing incorrect integers
- Typing many characters attempting to break the program
- Typing special characters
- Typing negative years (-1998)
- Typing a single character

2. When typing the second year:

- Typing incorrect integers
- Typing many characters attempting to break the program
- Typing special characters

- Typing a single character
- Typing negative years (-1998)

3. After selecting two years to use

When typing the first year:

- Typing integers
- Typing many characters attempting to break the program
- Typing special characters
- Typing negative years (-1998)
- Typing a single character

4. When typing the second year:

- Typing integers
- Typing many characters attempting to break the program
- Typing special characters
- Typing negative years (-1998)
- Typing a single character

Small Test 3 Passed

Small Test 4:

1. After typing "Q" to ask a question.

When typing whether you want a specific crime or all of them:

- Typing integers
- Typing many characters attempting to break the program
- Typing special characters
- Typing a single character

2. Testing after finishing entering crime. Instead of every location in Canada, choose specific:

- Typing integers
- Typing many characters attempting to break the program
- Typing special characters
- Typing "S" without entering any locations

- Typing a single character
- Typed short form locations such as "P.E.I."

3. Testing year range instead of every, choosing specific:

- Typing incorrect integers
- Typing many characters attempting to break the program
- Typing special characters
- Typing a single character
- Typing years outside the range

4. When selecting statistic to use in the question:

- Typing an integer not asked by the program
- Typing a character
- Typing the actual words of "Actual Incidents" or "Rate per 100,000 population" or "Percentage change in rate"
- Typing special characters such as @ or \$
- Typing correct input followed by other characters
- Typing many characters attempting to break the program

5. When selecting what to compare X ways:

- Typing an integer not asked by the program
- Typing a character
- Typing the actual words of "Crime" or "Location" or "Years" or "No comparison"
- Typing special characters such as @ or \$
- Typing correct input followed by other characters
- Typing many characters attempting to break the program

6. When choosing what to compare Y ways:

- Choose the same as X.
- Typing an integer not asked by the program
- Typing a character
- Typing the actual words of "Crime" or "Location" or "Years" or "No comparison"
- Typing special characters such as @ or \$
- Typing correct input followed by other characters
- Typing many characters attempting to break the program

7. When choosing min or max value:

- Typing an integer not asked by the program
- Typing a character

- Typing the actual words of “Maximum Value” or “Minimum Value”
- Typing special characters such as @ or \$
- Typing correct input followed by other characters
- Typing many characters attempting to break the program

Small Test 4 Passed

Small Test 5:

1. First Input test after hitting ‘Q’
 - Typing an integer not asked by the program
 - Typing a character
 - Typing the actual words of “Every Crime” or “Only”
 - Typing special characters such as @ or \$
 - Typing correct input followed by other characters
 - Typing many characters attempting to break the program
2. Input test after hitting ‘1’
 - Typing an integer not asked by the program
 - Typing a character
 - Typing the actual words of “Every Location” or “Only”
 - Typing special characters such as @ or \$
 - Typing correct input followed by other characters
 - Typing many characters attempting to break the program
3. Input test after hitting ‘1’ again
 - Typing an integer not asked by the program
 - Typing a character
 - Typing the actual words of “Every Year” or “Specific Year” or “Range of Years” or Two different years”
 - Typing special characters such as @ or \$
 - Typing correct input followed by other characters
 - Typing many characters attempting to break the program

Small Test 5 Complete

All of the input testing is complete.