Name: Anbarasan
Student: 1508153

ISCG 8026 Introduction to Data Science R Programming Assignment- Part A

PART 1: Examples of calling the functions results:

```
> source("pollutantmean.R")
> pollutantmean("specdata", "sulfate", 1:10)
[1] 4.064128
> pollutantmean("specdata", "nitrate", 23)
[1] 1.280833
```

PART 2: Examples of calling the functions results:

```
> source("complete.R")
> complete("specdata", 1)
  id nobs
1  1  117
> complete("specdata", 30:25)
  id nobs
1 30  932
2 29  711
3 28  475
4 27  338
5 26  586
6 25  463
```

Part 3: Examples of calling the functions results:

```
> source("corr.R")
> source("complete.R")
> cr <- corr("specdata", 150)
> print(cr)
  [1] -0.018957541 -0.140512544 -0.043897372 -0.068159562 -0.123506666 -
0.075888144
  [7] -0.159673652 -0.086841940  0.763128837 -0.157828603 -0.156998919 -
0.044898818
 [13]  0.117249264  0.259057178  0.133274607  0.366201078  0.580751264
0.006863930
 [19]  0.726693888  0.057741676  0.115338086  0.465754012  0.515804375
0.412693537
 [25]  0.375631176  0.315725317  0.244560561  0.594426499  0.553514976
0.614340566
```

[31] 0.460513619 0.405022501 0.434789780 0.088421364 0.118136697 -0.091022820
[37] -0.033091304 0.440660466 -0.029683708 0.268525390 0.277220958 -0.049108453
[43] 0.322627410 0.091139374 -0.025750053 0.120521602 -0.061746831 0.041306963
[49] -0.146202136 -0.162485185 -0.097254393 0.089262856 0.568403991 0.711864008
[55] 0.268203237 0.190644585 0.227222983 0.229238882 0.005635506 0.018628108
[61] -0.064750174 0.096614297 0.002864405 0.107184775 0.128477284 -0.042533572
[67] -0.137041337 0.136609030 0.118975253 0.098073855 0.066928310 0.100212474
[73] -0.063984344 -0.066525489 -0.129245884 -0.111066409 -0.089441210 -0.114090325
[79] -0.106280702 -0.176855164 -0.116984680 0.019138583 0.100643502 -0.073858484
[85] 0.036665921 -0.107957809 0.296744105 0.347421569 0.146528765 0.362414577
[91] 0.093330832 0.198915192 0.164602262 0.180626975 0.176508543 0.139158631
[97] 0.231984399 0.227615918 0.275903634 0.299630040 0.248143145 0.298344178
[103] -0.056325366 -0.178114558 0.002032940 -0.022802183 -0.001202233 0.085217423
[109] -0.076409023 0.010021716 0.016411646 -0.038785934 -0.075297768 0.041917773
[115] 0.193324040 0.596929143 0.113596590 -0.143750037 -0.017703373 0.284905360
[121] 0.305506111 0.150031306 0.134895077 0.172850003 0.286076203 -0.106687748
[127] 0.244744168 0.337120085 0.424798956 0.095921881 0.022899033 0.143330735
[133] 0.087196218 0.408741028 0.425176879 0.361728434 -0.035090337 -0.082388453
[139] -0.094742313 -0.087573726 -0.060405837 -0.092398269 -0.183197353 0.124650112
[145] -0.053001162 -0.039911536 0.010158287 0.451828854 0.295793699 0.615268727
[151] -0.075214053 0.132207405 0.089547098 -0.019086127 -0.045552626 0.211599525
[157] -0.073972834 0.112668377 0.138387891 -0.003207550 -0.052643174 0.042168144
[163] -0.067460173 -0.030882797 0.017805647 0.026138073 -0.050287543 0.016535643

```
[169]  0.199919014  0.482158286  0.355110474  0.589606340  0.368038099 -
0.029094866
[175] -0.074495323  0.262101561 -0.005386993  0.258826380  0.144110820
0.101915017
[181]  0.023020993  0.074594252  0.256665139  0.162401158 -0.003454405
0.190141976
[187]  0.184581239  0.120596460 -0.176233152 -0.144699131  0.147074115
0.273520382
[193]  0.109557323 -0.092863394 -0.182752126 -0.008836513  0.356592359 -
0.089133895
[199] -0.017185129 -0.156323514 -0.042538204  0.010235676 -0.009912754 -
0.042910367
[205] -0.210567709 -0.155957816  0.046211272 -0.060808231  0.160865053
0.615095781
[211]  0.598343330  0.506535631  0.191834811 -0.024723462 -0.150627164 -
0.002500089
[217] -0.166201361  0.619349867  0.531380642  0.520115665  0.466673962
0.518820173
[223]  0.394191512  0.379446208 -0.123172036 -0.061565518 -0.180133963
0.253978075
[229]  0.139867175  0.316429404  0.268780500  0.279397143  0.267260662
0.287133842
```

PART 4: Example of calling the functions, results:

```
> source("pollutantvector.R")
> pollutantvector("specdata", "sulfate", 1:35, 0.5)
         Date sulfate nitrate ID
279  2003-10-06   7.210   0.651  1
285  2003-10-12   5.990   0.428  1
291  2003-10-18   4.680   1.040  1
297  2003-10-24   3.470   0.363  1
303  2003-10-30   2.420   0.507  1
315  2003-11-11   1.430   0.474  1
….
….
..
..
.
[ reached 'max' / getOption("max.print") -- omitted 11920 rows ]
```

PART 5: Example of calling the functions, results:

```
> source("calculator.R")
> calculator()
[1] "******Simple R Calculator - Select operation: ******"
[1] "1.Add"
[1] "2.Subtract"
```

```
[1] "3.Multiply"
[1] "4.Divide"
[1] "5.Factors"
[1] "6.Prime"
Enter choice [1/2/3/4/5/6]:4
Enter first number:20
Enter second number:4
[1] "20 / 4 = 5"

> source("calculator.R")
> calculator()
[1] "******Simple R Calculator - Select operation: ******"
[1] "1.Add"
[1] "2.Subtract"
[1] "3.Multiply"
[1] "4.Divide"
[1] "5.Factors"
[1] "6.Prime"
Enter choice [1/2/3/4/5/6]:4
Enter first number:20
Enter second number:4
[1] "20 / 4 = 5"

> calculator()
[1] "******Simple R Calculator - Select operation: ******"
[1] "1.Add"
[1] "2.Subtract"
[1] "3.Multiply"
[1] "4.Divide"
[1] "5.Factors"
[1] "6.Prime"
Enter choice [1/2/3/4/5/6]:5
Enter the number:120
[1] "The factors of 120 are:"
[1] 1
[1] 2
[1] 3
[1] 4
[1] 5
[1] 6
[1] 8
[1] 10
[1] 12
[1] 15
[1] 20
[1] 24
[1] 30
```

```
[1] 40
[1] 60
[1] 120
```