# HOMEWORK 968-252 Data Science

### **Exploratory Data Analysis: General Information and Summary Statistics**

ชื่อ-นามสกุล	ธนวัฒน์ วิริยธรรมโสภณ รหัส	6530611033	สาขา
4	COMP		

## จงเขียนคำสั่ง Python ที่ให้ผลลัพธ์ได้เช่นเดียวกับคำสั่ง R ต่อไปนี้

1) mydata <- read.csv("~/Desktop/Sample/Data/DataScience.csv") > Find # 6530611033 Lab 2 ทำเป็น python import csv import numpy as np import pandas as pd file path = 'D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' with open(file\_path, mode='r', encoding='utf-8') as mydata: 10 print(mydata) 11 PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL **PORTS** Windows PowerShell Copyright (C) Microsoft Corporation. All rights reserved. Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows PS C:\Users\Admin\Downloads> & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.6 python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' <\_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'> PS C:\Users\Admin\Downloads>

2) dim(mydata) 12 13 #2 dim() in R df = pd.read csv(file path) 14 dimensions = df.shape 15 16 print(dimensions) 17 PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Windows PowerShell Copyright (C) Microsoft Corporation. All rights reserved. Install the latest PowerShell for new features and improvements! ht PS C:\Users\Admin\Downloads> & 'c:\Users\Admin\AppData\Local\Micros python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/../. <\_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mod (19158, 14)

names(mydata)

4) View(mydata)

```
22
23
       view = pd.read_csv(file_path)
24
       print(view)
 26
27
 28
      # df = pd.read_csv(file_path)
 29
       # summary = df.describe()
       # print(summary)
 30
 31
PROBLEMS OUTPUT DEBUG CONSOLE
                                       TERMINAL
                                                   PORTS
                                                                                                                     叔 Python Debug Console
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApp\Users\Admin\.vscode\extensions\ms-python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launc
\Users\Admin\Downloads\Untitled-2.py
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มa/data sci/DataScience.csv' mode='r' encoding='utf-8'>
               ee_id city city_development_index gender ...
8949 city_103 0.920 Male ...
        enrollee_id
                                                                               company_type last_new_job training_hours target
0
                                                                                          NaN
                                                                                                                             36
               29725
                        city_40
                                                       0.776
                                                                Male
                                                                                      Pvt Itd
                                                                                                           >4
                                                                                                                            47
                                                                                                                                    0.0
               11561
                       city_21
                                                       0.624
                                                                 NaN
                                                                                          NaN
                                                                                                       never
                                                                                                                            83
                                                                                                                                    0.0
3
               33241 city_115
                                                                                     Pvt Ltd
                                                       0.789
                                                                 NaN
                                                                                                       never
                                                                                                                             52
                                                                                                                                    1.0
                                                                       ... Funded Startup
4
                                                                                                            4
                      city_162
                                                                Male
                                                                                                                             8
                                                                                                                                    0.0
                 666
                                                       0.767
19153
                7386
                                                                                          NaN
                                                                                                                            42
                                                                                                                                    1.0
                       city_173
                                                       0.878
                                                                Male
                      city_103
city_103
                                                                                                                             52
19154
               31398
                                                       0.920
                                                                 Male
                                                                                          NaN
                                                                                                                                    1.0
19155
               24576
                                                       0.920
                                                                 Male
                                                                                      Pvt Ltd
                                                                                                                                    0.0
19156
                        city_65
                                                       0.802
                                                                                      Pvt Ltd
                                                                                                                            97
                                                                 Male
                                                                                                                                    0.0
19157
               23834
                        city_67
                                                       0.855
```

5) summary(mydata)

```
27
                  #5 summary() in R
                  df = pd.read_csv(file_path)
   28
                  summary = df.describe()
   30
                  print(summary)
   31
                  # #6 head() in R
   32
   33
                  # df = pd.read_csv(file_path)
                  # header = df.head()
   34
   35
                  # print(header)
   36
PROBLEMS
                            OUTPUT
                                                      DEBUG CONSOLE
                                                                                                TERMINAL
                                                                                                                             PORTS
                                                                                                                                      0.920
19155
                                     24576 city_103
                                                                                                                                                             Male
                                                                                                                                                                                                                 Pvt
19156
                                       5756
                                                           city_65
                                                                                                                                      0.802
                                                                                                                                                              Male
                                                                                                                                                                                                                 Pvt
19157
                                     23834
                                                            city_67
                                                                                                                                      0.855
                                                                                                                                                                NaN
                                                                                                                                                                              . . . .
 [19158 rows x 14 columns]
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\
\label{thm:local_local_potential} $$ \Users Admin\.vscode\extensions\ms-python.debugpy-2024.0.0-win32-x64\bundled and the support of the su
 \Users\Admin\Downloads\Untitled-2.py
< io.TextIOWrapper name='D:/ไว้ส่งงาน มa/data sci/DataScience.csv' mode='r' enc
                       enrollee_id city_development_index training_hours
                                                                                                                                                                                               target
count
                   19158.000000
                                                                                        19158.000000
                                                                                                                                      19158.000000 19158.000000
                                                                                                                                                                                          0.249348
                    16875.358179
mean
                                                                                                    0.828848
                                                                                                                                                65.366896
                       9616.292592
                                                                                                    0.123362
                                                                                                                                                60.058462
std
                                                                                                                                                                                          0.432647
                                                                                                                                                 1.000000
min
                              1.000000
                                                                                                    0.448000
                                                                                                                                                                                          0.000000
                                                                                                    0.740000
                                                                                                                                                                                          0.000000
25%
                       8554.250000
                                                                                                                                                23.000000
50%
                    16982.500000
                                                                                                    0.903000
                                                                                                                                               47.000000
                                                                                                                                                                                          0.000000
75%
                    25169.750000
                                                                                                    0.920000
                                                                                                                                               88.000000
                                                                                                                                                                                          0.000000
                     33380.000000
                                                                                                    0.949000
                                                                                                                                             336.000000
                                                                                                                                                                                          1.000000
PS C:\Users\Admin\Downloads
```

6) head(mydata)

```
#6 head() in R
 32
 33
       df = pd.read_csv(file_path)
 34
       header = df.head()
       print(header)
 36
 37
       # #7 head(n=20) in R
       # df = pd.read_csv(file_path)
 38
                                                                                                                 PROBLEMS OUTPUT DEBUG CONSOLE
                                      TERMINAL
                                                 PORTS
std
         9616.292592
                                        0.123362
                                                         60.058462
                                                                          0.432647
min
           1.000000
                                        0.448000
                                                         1.000000
                                                                          0.000000
         8554.250000
25%
                                       0.740000
                                                         23.000000
                                                                          0.000000
                                                                          0.000000
50%
        16982.500000
                                        0.903000
                                                         47.000000
75%
        25169.750000
                                        0.920000
                                                         88.000000
                                                                          0.000000
                                                                          1.000000
        33380.000000
                                        0.949000
                                                        336.000000
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\py \Users\Admin\.vscode\extensions\ms-python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/...\.\debugpy\launcher'
\Users\Admin\Downloads\Untitled-2.py
< io.TextIOWrapper name='D:/ไว้ส่งงาน มล/data sci/DataScience.csv' mode='r' encoding='utf-8'>
                     city city_development_index gender
   enrollee_id
                                                                        company_type last_new_job training_hours target
          8949 city_103
                                                 0.920
          29725 city_40
11561 city_21
                                                 0.776
                                                          Male
                                                                              Pvt Ltd
                                                                                                   >4
                                                                                                                    47
                                                                                                                           0.0
                                                0.624
                                                           NaN
                                                                                  NaN
                                                                                               never
                                                                                                                    83
                                                                                                                           0.0
                                                                              Pvt Ltd
          33241 city_115
                                                          NaN
                                                                                                                    52
                                                                                                                           1.0
                                                0.789
                                                                                               never
                                                                ... Funded Startup
            666
                 city_162
                                                         Male
                                                                                                                           0.0
                                                0.767
[5 rows x 14 columns]
PS C:\Users\Admin\Downloads:
```

7) head(mydata, n=20)

```
df = pd.read_csv(file_path)
 39
      header_count = df.head(n=20)
 40
      print(header_count)
 41
 42
 13
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
                                               PORTS
                                                                                                             ₹ Python Debug Consc
    enrollee id
                                                                        company_type last_new_job training_hours target
                      city city_development_index
                                                       gender
           8949 city_103
29725 city_40
11561 city_21
0
                                                0.920
                                                         Male
                                                                                  NaN
                                                                                                                        1.0
                                                                             Pvt Ltd
                                                                                                 >4
                                                                                                                        0.0
                                                0.776
                                                         Male
                                                                                                                 47
2
                                                          NaN
                                                                                                                        0.0
                                                0.624
                                                                                 NaN
                                                                                              never
                                                                                                                 83
                 city_115
                                                                                                                  52
           33241
                                                                             Pvt Ltd
                                                                                                                        1.0
                                                0.789
                                                           NaN
                                                                                              never
                 city_162
                                                                                                                  8
            666
                                                0.767
                                                         Male
                                                                      Funded Startup
                                                                                                                        0.0
                 city_176
city_160
           21651
                                                0.764
                                                          NaN
                                                                                 NaN
                                                                                                                 24
                                                                                                                        1.0
6
                                                0.920
                                                                     Funded Startup
                                                                                                                 24
           28806
                                                         Male
                                                                                                                        0.0
                                                                                                                 18
            402
                  city_46
                                                0.762
                                                         Male
                                                                             Pvt Ltd
                                                                                                 >4
                                                                                                                        1.0
                 city_103
city_103
          27107
                                                0.920
                                                         Male
                                                                             Pvt Ltd
                                                                                                                 46
                                                                                                                        1.0
            699
                                                0.920
                                                           NaN
                                                                             Pvt Ltd
                                                                                                                123
                                                                                                                        0.0
10
           29452
                  city_21
                                                0.624
                                                           NaN
                                                                                              never
                                                                                                                        1.0
                                                                . . .
11
           23853
                  city_103
                                                                             Pvt Ltd
                                                0.920
                                                         Male
                                                                . . .
12
           25619
                   city_61
                                                0.913
                                                          Male
                                                                                                                 23
                                                                                                                        0.0
                                                0.624
13
            5826
                   city_21
                                                          Male
                                                                                  NaN
                                                                                                                  24
                                                                                                                        0.0
                                                                                              never
14
            8722
                   city_21
                                                0.624
                                                          NaN
                                                                                  NaN
                                                                                                                  26
                                                                                                                        0.0
15
            6588
                 city_114
                                                0.926
                                                         Male
                                                                             Pvt Ltd
                                                                                                 >4
                                                                                                                  18
                                                                                                                        0.0
16
            4167
                 city_103
                                                0.920
                                                           NaN
                                                                             Pvt Ltd
                                                                                                                 106
                                                                                                                        0.0
17
            5764
                  city_21
                                                0.624
                                                                             Pvt Ltd
                                                                                                                        0.0
```

8) tail(mydata)

```
47
                   # # 9 tail(n=20) in R
                  # df = pd.read_csv(file_path)
  49
                  # tail_count = df.tail(n=20)
                  # print(tail_count)
  50
PROBLEMS OUTPUT DEBUG CONSOLE
                                                                                                 TERMINAL
                                                                                                                              PORTS
                                                                                                                                                                                                                                                                                                Rython Debug Cor
                               4167 city_103
16
                                                                                                                               0 920
                                                                                                                                                           NaN
                                                                                                                                                                                                             Pvt Itd
                                                                                                                                                                                                                                                        never
                                                                                                                                                                                                                                                                                                          106
                                                                                                                                                                                                                                                                                                                              0.0
                                                                                                                                                            NaN
17
                               5764
                                                   city_21
                                                                                                                               0.624
                                                                                                                                                                                                             Pvt Ltd
                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                              0.0
                                                                                                                                                                                                             Pvt Ltd
 18
                               2156
                                                   city_21
                                                                                                                               0.624
                                                                                                                                                            NaN
                                                                                                                                                                                                                                                                                                            23
                                                                                                                                                                                                                                                                                                                              1.0
                                                                                                                                                                                                                                                         never
 19
                             11399
                                                   city_13
                                                                                                                               0.827 Female
                                                                                                                                                                                                                        NaN
                                                                                                                                                                                                                                                                                                         132
                                                                                                                                                                                                                                                                                                                              1.0
 [20 rows x 14 columns]
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\Windows
 \label{thm:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local
 \Users\Admin\Downloads\Untitled-2.py
 <_io.TextIOWrapper name='D:/ไว้ส่งงาน มa/data sci/DataScience.csv' mode='r' encoding='utf-8'>
                                                                  city city_development_index gender ... company_type last_new_job training_hours target
                    enrollee_id
                                       7386 city_173
                                                                                                                                                                                                                     NaN
                                                                                                                                                                                                                                                                                                                           1.0
 19153
                                                                                                                                       0.878
                                                                                                                                                              Male
                                                                                                                                                                                                                                                                 1
                                                                                                                                                                                                                                                                                                         42
                                      31398 city_103
                                                                                                                                       0.920
                                                                                                                                                                                                                                                                                                         52
 19154
                                                                                                                                                              Male
                                                                                                                                                                                                                     NaN
                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                           1.0
                                                                                                                                                                                                         Pvt Ltd
Pvt Ltd
                                                                                                                                       0.920
                                                                                                                                                                                                                                                                 4
 19155
                                      24576 city_103
                                                                                                                                                              Male
                                                                                                                                                                                                                                                                                                         44
                                                                                                                                                                                                                                                                                                                           0.0
                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                         97
 19156
                                       5756
                                                          city_65
                                                                                                                                       0.802
                                                                                                                                                               Male
                                                                                                                                                                                                                                                                                                                           0.0
                                                                                                                                                                                                                     NaN
 19157
                                      23834
                                                          city_67
                                                                                                                                       0.855
                                                                                                                                                                 NaN
                                                                                                                                                                                                                                                                 1
                                                                                                                                                                                                                                                                                                       127
                                                                                                                                                                                                                                                                                                                           0.0
```

9) tail(mydata, n = 20)

```
df = pd.read_csv(file_path)
 48
       tail count = df.tail(n=20)
 49
       print(tail_count)
 50
 51
 52
 53
       # print(data)
 56
 57
      # df = pd.read_csv(file_path)
 58
PROBLEMS OUTPUT DEBUG CONSOLE
                                      TERMINAL
                                                   PORTS
                                                                                                                      ₽ Python Debug Console + >
                      city_40
city_103
city_21
city_44
                                                                  Male ... Early Stage Startup
19142
               13750
                                                       0.776
                                                                                                                                            0.0
               33047
                                                       0.920
                                                                  Male ...
                                                                                             Pvt Ltd
                                                                                                                   >4
                                                                                                                                     18
                                                                                                                                            0.0
19143
19144
               17191
                                                       0.624
                                                                   NaN ...
                                                                                                                never
                                                                                                                                     48
                                                                                             Pvt Ltd
                                                                                                                                    190
51
52
19145
                                                       0.725
                                                                   NaN
                                                                                                                never
                                                                                                                                            0.0
               13167 city_103
21319 city_21
9212 city_21
                                                                                             Pvt Itd
19146
                                                       0.920
                                                                  Male ...
                                                                                                                                            0.0
19147
                                                       0.624
                                                                  Male
                                                                                             Pvt Ltd
                                                                                                                                            1.0
19148
                                                       0.624
                                                                   NaN
                                                                                             Pvt Ltd
                                                                                                                                     40
               251 city_103
32313 city_160
11385 city_149
29754 city_103
                                                                                                                                     36
23
60
                                                       0.920
0.920
19149
                                                                  Male
                                                                                             Pvt Ltd
                                                                                                                                            1.0
                                                                                      Public Sector
19150
                                                               Female
                                                                                                                                            0.0
19151
                                                        0.689
                                                                  Male
                                                                                                                                     25
42
52
44
                                                               Female
Male
                                                                                     Funded Startup
19152
                                                       0.920
                                                                                                                                            0.0
                                                       0.878
                                                                                                                                            1.0
19153
                7386 city_173
                                                                                                  NaN
                                                       0.920
               31398 city_103
24576 city_103
                                                                  Male
19154
                                                                                                  NaN
                                                                                                                                            1.0
19155
                                                       0.920
                                                                  Male
                                                                                             Pvt Ltd
                                                                  Male
19156
                5756
                        city_65
                                                       0.802
                                                                                             Pvt Ltd
                                                                                                                                     97
                                                                                                                                            0.0
19157
               23834
                                                                                                                                    127
                                                                                                                                            0.0
                        city_67
                                                       0.855
                                                                   NaN
                                                                                                  NaN
[20 po
          v 1/ columnsl
```

10) mydata[1:10, ]

```
#10 mydata[1:10, ] in R
 53
       df = pd.read_csv(file_path)
 54
       data = df.iloc[0:10]
 55
       print(data)
 56
       # #11 mydata[1:10, 0:3] in R
 57
 58
       # df = pd.read_csv(file_path)
PROBLEMS
          OUTPUT
                    DEBUG CONSOLE
                                     TERMINAL
                                                PORTS
                                                                                                               Python Debug Co
[20 rows x 14 columns]
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\Windows.\Users\Admin\.vscode\extensions\ms-python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\la
\Users\Admin\Downloads\Untitled-2.py
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'>
   enrollee_id
                     city city_development_index gender ...
                                                                      company_type last_new_job training_hours target
          8949 city_103
0
                                                0.920
                                                        Male
                                                                                 NaN
                                                                                                                  36
                                                                                                                        1.0
          29725
                  city_40
                                                0.776
                                                         Male
                                                                             Pvt Ltd
                                                                                                 >4
                                                                                                                  47
                                                                                                                        0.0
          11561
                  city_21
                                                0.624
                                                         NaN
                                                                                 NaN
                                                                                                                 83
                                                                                                                        0.0
                                                                                             never
          33241 city_115
                                                0.789
                                                         NaN
                                                                             Pvt Ltd
                                                                                                                  52
                                                                                                                         1.0
                                                                                             never
4
           666
                 city_162
                                                0.767
                                                         Male
                                                                     Funded Startup
                                                                                                 4
                                                                                                                  8
                                                                                                                        0.0
          21651
                 city_176
                                                0.764
                                                         NaN
                                                                                NaN
                                                                                                  1
                                                                                                                  24
                                                                                                                         1.0
          28806
                 city_160
                                                0.920
                                                         Male
                                                                     Funded Startup
                                                                                                                  24
                                                                                                                        0.0
7
           402
                  city_46
                                                0.762
                                                         Male
                                                                             Pvt Ltd
                                                                                                                  18
                                                                                                                         1.0
          27107 city_103
                                                0.920
                                                         Male
                                                                             Pvt Ltd
                                                                                                                 46
                                                                                                                         1.0
9
            699
                 city_103
                                                0.920
                                                         NaN
                                                                             Pvt Ltd
                                                                                                 >4
                                                                                                                 123
                                                                                                                        0.0
[10 rows x 14 columns]
```

11) mydata[1:10, 1:3]

```
57
      # #11 mydata[1:10, 0:3] in R
      df = pd.read_csv(file_path)
59
      data = df.iloc[0:10, 0:3]
60
      print(data)
61
62
      # # 12 unique(mydata[c("gender")]) in R
      # df - nd nood cou/file r
PROBLEMS
          OUTPUT
                  DEBUG CONSOLE
                                  TERMINAL
           699 city_103
                                           0.920
                                                    NaN ...
                                                                     Pvt Ltd
                                                                                       >4
[10 rows x 14 columns]
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Loc
\Users\Admin\.vscode\extensions\ms-python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adap
\Users\Admin\Downloads\Untitled-2.py
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'>
   enrollee_id
                    city city_development_index
          8949 city_103
                                           0.920
0
         29725
                city_40
                                           0.776
1
2
         11561
                city_21
                                           0.624
         33241 city_115
3
                                           0.789
4
           666 city_162
                                           0.767
5
         21651 city_176
                                           0.764
6
         28806
                                           0.920
               city_160
7
          402
                 city_46
                                           0.762
               city_103
8
         27107
                                           0.920
               city 103
                                           0.920
           699
```

12) unique(mydata[c("gender")])

```
# # 12 unique(mydata[c("gender")]) in R
62
      df = pd.read_csv(file_path)
 64
      gender = df["gender"].unique()
65
      print(gender)
66
67
      # # 13 table(mydata$gender)
PROBLEMS
          OUTPUT
                  DEBUG CONSOLE
                                 TERMINAL
                                           PORTS
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS C:\Users\Admin\Downloads> & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe
python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '57079'
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'>
['Male' nan 'Female' 'Other']
PS C:\Users\Admin\Downloads>
```

13) table(mydata\$gender)

```
# # 13 table(mydata$gender)
      df = pd.read_csv(file_path)
68
      gender_count = df["gender"].value_counts()
      print(gender count)
 70
71
                   DEBUG CONSOLE
                                  TERMINAL
PROBLEMS
          OUTPUT
                                            PORTS
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS C:\Users\Admin\Downloads> & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10
python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '57079'
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'>
['Male' nan 'Female' 'Other']
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Loc
\Users\Admin\.vscode\extensions\ms-python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adap
\Users\Admin\Downloads\Untitled-2.py
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'>
gender
          13221
Male
Female
           1238
Other
            191
Name: count, dtype: int64
```

14) genderEducation <- table(mydata\$education\_level, mydata\$gender)

```
71
 72
      # # 14 genderEducation <- table(mydata$education_level, mydata$gender)</pre>
 73
      df = pd.read_csv(file_path)
      gender_count = pd.crosstab(df["education_level"], df["gender"])
 74
 75
      print(gender_count)
PROBLEMS OUTPUT
                   DEBUG CONSOLE
                                 TERMINAL
                                            PORTS
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS C:\Users\Admin\Downloads> & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe'
python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' '57105' '--' '
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'>
                 Female Male Other
gender
education level
                        8144
Graduate
                    773
                                 112
High School
                     67
                         1395
                                  33
Masters
                    339
                         2957
                                  27
Phd
                          280
                     47
                                   4
Primary School
                      1
                          203
                                   6
PS C:\Users\Admin\Downloads>
```

15) addmargins(genderEducation)

```
# #15 addmargins(genderEducation)
                      df = pd.read_csv(file_path)
                      gender_count = pd.crosstab(df["education_level"], df["gender"],margins= True)
   79
   80
                      print(gender_count)
   81
PROBLEMS
                                                                  DEBUG CONSOLE
                                                                                                                       TERMINAL
                                                                                                                                                                                                                                                                                                                                                               囟
                                    OUTPUT
                                                                                                                                                          PORTS
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS C:\Users\Admin\Downloads> & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe'
y thon. debugpy-2024.0.0-win 32-x 64 \land libs \land lebugpy \land launcher' '57105' '--' and lebugpy \launcher' '5710
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มa/data sci/DataScience.csv' mode='r' encoding='utf-8'>
                                                            Female Male Other
education_level
                                                                       773 8144
                                                                                                                    112
Graduate
High School
                                                                         67
                                                                                        1395
                                                                                                                        33
Masters
                                                                       339
                                                                                        2957
                                                                                                                        27
Phd
                                                                         47
                                                                                                                          4
                                                                                           280
Primary School
                                                                            4
                                                                                           203
                                                                                                                           6
PS C:\Users\Admin\Downloads>
```

16) prop.table(genderEducation)

```
81
      82
            #16 prop.table(genderEducation)
      83
            df = pd.read_csv(file_path)
            gender_count = pd.crosstab(df["education_level"], df["gender"])
      84
            prop_gender = gender_count.div(gender_count.sum().sum())
      85
      86
            print(prop_gender)
      있7
PROBLEMS
                OUTPUT
                         DEBUG CONSOLE
                                        TERMINAL
                                                  PORTS
     Windows PowerShell
     Copyright (C) Microsoft Corporation. All rights reserved.
8
      Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
     PS C:\Users\Admin\Downloads> & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3
r
os
     python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/../.\debugpy\launcher' '573
      <_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'>
                         Female
                                     Male
                                              Other 6 4 1
      education_level
      Graduate
                       0.053714 0.565909 0.007783
     High School
                       0.004656 0.096936 0.002293
                       0.023556
                                0.205476
     Masters
                                           0.001876
     Phd
                       0.003266 0.019457
                                          0.000278
      Primary School
                       0.000278 0.014106 0.000417
      PS C:\Users\Admin\Downloads>
```

17) testdata <- xtabs(~gender+education level+major discipline, data = mydata)

```
#17 17) testdata <- xtabs(~gender+education_level+major_discipline, data = mydata)</pre>
 88
 89
       df = pd.read_csv(file_path)
       testdata = pd.crosstab(index=[df["gender"], df["education_level"]], columns=df["major_discipline"])
 91
       print(testdata)
PROBLEMS
          OUTPUT DEBUG CONSOLE
                                     TERMINAL
                                                 PORTS
                                                                                                                 Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
 PS C:\Users\Admin\Downloads> \& `c:\Users\Admin\AppData\Local\Microsoft\Windows\Apps\python3.10.exe' `c:\Users python.debugpy-2024.0.0-win32-x64\bundled\libs\debugpy\adapter/../..\debugpy\launcher' `57144' '--' 'C:\Users python.debugpy\Adapter/../...
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'>
                           Arts Business Degree Humanities No Major Other STEM
major_discipline
gender education_level
Female Graduate
                             25
                                                 16
                                                              70
                                                                         14
                                                                                 28
                                                                                       620
        Masters
                             10
                                                              42
                                                                                       268
        Phd
                              1
                                                               6
                                                                                  0
                                                                                       40
Male
       Graduate
                            137
                                               169
                                                             283
                                                                         143
                                                                                176
                                                                                      7229
                             22
1
                                                                                 65
                                                                                      2654
       Masters
                                                 54
                                                             138
                                                                         20
                                                                                  6
                                                                          0
        Phd
                                                               8
                                                                                       262
Other
                                                               5
       Graduate
                                                  3
                                                                                        89
                              0
       Masters
                                                                                        24
        Phd
                              0
                                                  0
                                                                                         2
PS C:\Users\Admin\Downloads>
```

18) ftable(testdata)

```
# #18ftable(testdata)
 93
      df = pd.read_csv(file_path)
 94
 95
       ftable = testdata.stack()
       print(ftable)
 96
 97
                                    TERMINAL
PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                               PORTS
       Masters
                             0
                                               0
       Phd
                             0
                                               0
        education_level
gender
                          major_discipline
Female
        Graduate
                           Arts
                                                  25
                           Business Degree
                                                  16
                           Humanities
                                                  70
                           No Major
                                                  14
                           Other
                                                  28
                           STEM
                                                 620
                           Arts
                                                  10
        Masters
                           Business Degree
                                                   9
                           Humanities
                                                  42
                           No Major
                                                   2
                           Other
                                                   8
                           STEM
                                                 268
        Phd
                           Arts
                                                   1
                           Business Degree
                                                   0
                           Humanities
                                                   6
                           No Major
                                                   0
                           Other
                                                   0
                           STEM
                                                  40
Male
        Graduate
                           Arts
                                                 137
                           Business Degree
                                                 169
                           Humanities
                                                 283
                           No Major
                                                 143
                           Other
                                                 176
                           STEM
                                                7229
                                                  22
                           Arts
        Masters
                           Business Degree
                                                  54
```

<sup>19)</sup> install.packages("pastecs") library(pastecs) stat.desc(mydata)

20) stat.desc(mydata[,c("city development index","training hours")])

```
# #21 mean(mydata$training_hours)
df = pd.read_csv(file_path)
                                 mean = df['training_hours'].mean()
print("Mean = ", mean)
  110
  112
                               # #22 median(mydata$training_hours)
df = pd.read_csv(file_path)
median = df['training_hours'].median()
 113
114
 116
117
118
                                     print("Median = ",median)
                                 df = pd.read_csv(file_path)
                                  var = df['training_hours'].var()
print("Var = ",var)
 121
122
  123
                              df = pd.read_csv(file_path)
min = df['training_hours'].min()
print("Min = ",min)
  124
  125
  126
      PROBLEMS OUTPUT DEBUG CONSOLE
0
47.0
336
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\into \debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/../..\debugpy\adapter/...\debugpy\adapter/../..\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\adapter/...\debugpy\
```

21) mean(mydata\$training\_hours)

```
# #21 mean(mydata$training_hours)
df = pd.read_csv(file_path)
           mean = df['training_hours'].mean()
print("Mean = ", mean)
111
112
113
            # #22 median(mydata$training_hours)
           df = pd.read_csv(file_path)
median = df['training_hours'].median()
print[("Median = ",median)]
114
115
117
          df = pd.read_csv(file_path)
var = df['training_hours'].var()
print("Var = ",var)
119
120
121
          # #24 min(mydata$training_hours)
df = pd.read_csv(file_path)
123
124
126
          print("Min = ",min)
127
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
47.0
336
336
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\Downloads\Untitled-2.py'
<_io.TextIO\Wrapper name='D:/ให้ส่งงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'>
Mean = 65.36689633573442
Median = 47.0
Var = 3607.0188487579544
Min = 1
```

22) median(mydata\$training\_hours)

```
# #21 mean(mydata$training_hours)
df = pd.read_csv(file_path)
mean = df['training_hours'].mean()
  112
 113
                            df = pd.read_csv(file_path)
 115
                             median = df['training_hours'].median()
                              print("Median = ",median)
 117
  118
  119
                             df = pd.read_csv(file_path)
 120
                            var = df['training_hours'].var()
print("Var = ",var)
 121
 122
  123
                           df = pd.read_csv(file_path)
 124
 125
                           min = df['training_hours'].min()
 126
                         print("Min = ",min)
      ROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
  47.0
 336
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\App\Pata\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\App\Pata\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\App\Pata\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\Pata\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\Microsoft\WindowsApps\Pata\Local\WindowsApps\Pata\L
ibs\debugpy\adapter/../..\debugpy\launcher' '57236' '--' 'C:\Users\Admin\pownloads'; & 'c:\Users\Admin\AppData\Local
ibs\debugpy\adapter/../..\debugpy\launcher' '57236' '--' 'C:\Users\Admin\pownloads\Untitled-2.py
<_io.TextIOWrapper name='D:/ไว้สงงาน มล/data sci/DataScience.csv' mode='r' encoding='utf-8'>
Mean = 65.36689633573442
Median = 47.0
Var = 3607.0188487579544
```

#### 23) var(mydata\$training\_hours)

```
# #21 mean(mydata$training_hours
df = pd.read_csv(file_path)
          mean = df['training_hours'].mean()
print("Mean = ", mean)
111
112
          df = pd.read_csv(file_path)
median = df['training_hours'].median()
print(("Median = ",median))
114
115
117
         # #23 var(mydata$training_hours)
df = pd.read_csv(file_path)
var = df['training_hours'].var()
118
119
120
          print("Var = ",var)
122
123
          # #24 min(mydata$training_hours)
124
          df = pd.read_csv(file_path)
         print("Min = ",min)
126
127
 PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
47.0
336
336
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\Downloads\Untitled-2.py'
<_io.TextIOWrapper name='D:/ไว้ส่งงาน มล/data sci/DataScience.csv' mode='r' encoding='utf-8'>
Mean = 65.36689633573442
Median = 47.0
Var = 3607.0188487579544
Min = 1
```

#### 24) min(mydata\$training\_hours)

```
# #21 mean(mydata$training_hours
        df = pd.read_csv(file_path)
mean = df['training_hours'].mean()
print("Mean = ", mean)
110
111
113
        df = pd.read_csv(file_path)
median = df['training_hours'].median()
114
115
          print("Median = ",median)
116
117
        # #23 var(mydata$training_hours)
df = pd.read_csv(file_path)
118
119
          var = df['training_hours'].var()
121
          print("Var = ",var)
122
123
         df = pd.read_csv(file_path)
         min = df['training_hours'].min()
print("Min = ",min)
125
126
127
 PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
47.0
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.exe' 'c:\Users\Admin\Downloads\Untitled-2.py'
ibs\debugpy\admin\Downloads\ c:; cd c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local ibs\debugpy\admin\Downloads\ ('--' 'c:\Users\Admin\Downloads\Untitled-2.py <_io.TextIOWrapper name:\[']:\ไว้สังงาน มอ/data sci/DataScience.csv' mode='r' encoding='utf-8'> Mean = 65.36689633573442 Median = 47.0 Var = 3607.0188487579544
```

25) max(mydata\$training hours)

```
# #25 max(mydata$training_hours)
130
        df = pd.read_csv(file_path)
        max = df['training_hours'].max()
131
        print("Mean = ",max)
132
133
        # #26 range(mydata$training_hours)
134
        df = pd.read_csv(file_path)
135
        range = df['training_hours'].max()-df['training_hours'].max()
print("Range = ",range)
136
137
138
139
       df = pd.read_csv(file_path)
quantile = df['training_hours'].quantile()
print("Quantile = ",quantile)
140
141
142
143
144
       maxtable = df['training_hours'].max()
print("Maxtable = ",maxtable)
145
146
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
                                                         PORTS
47.0
336
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.
ibs\debugpy\adapter/../..\debugpy\launcher' '57236' '--' 'C:\Users\Admin\Downloads\Untitled-2.py
<_io.TextIOWrapper name='D:/ไว้สี่งงาน มล/data sci/DataScience.csv' mode='r' encoding='utf-8'>
Mean = 65.36689633573442
Median = 47.0
Var = 3607.0188487579544
Min = 1
Mean = 336
Range = 0
Quantile = 47.0
Maxtable = 336
```

26) range(mydata\$training\_hours)

```
# #25 max(mydata$training hours)
       df = pd.read_csv(file_path)
130
       max = df['training_hours'].max()
131
       print("Mean = ",max)
132
133
134
       # #26 range(mydata$training_hours)
       df = pd.read_csv(file_path)
135
       range = df['training_hours'].max()-df['training_hours'].max()
136
       print("Range = ",range)
137
138
       # #27 quantile(mydata$training hours)
139
       df = pd.read_csv(file_path)
140
       quantile = df['training_hours'].quantile()
print("Quantile = ",quantile)
141
142
143
144
       maxtable = df['training_hours'].max()
print("Maxtable = ",maxtable)
145
PROBLEMS OUTPUT DEBUG CONSOLE
                                         TERMINAL
                                                      PORTS
47.0
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.
ibs\debugpy\adapter/../..\debugpy\launcher' '57236' '--' 'C:\Users\Admin\Downloads\Untitled-2.py
<_io.TextIOWrapper name='D:/ใว้ส่งงาน มล/data sci/DataScience.csv' mode='r' encoding='utf-8'>
Mean = 65.36689633573442
Median = 47.0
Var = 3607.0188487579544
Min = 1
Mean = 336
Range = 0
Quantile = 47.0
Maxtable = 336
```

27) quantile(mydata\$training hours)

```
# #25 max(mvdata$training hours)
130
       df = pd.read csv(file path)
       max = df['training_hours'].max()
131
       print("Mean = ",max)
132
133
134
       # #26 range(mvdata$training hours)
       df = pd.read_csv(file_path)
135
       range = df['training_hours'].max()-df['training_hours'].max()
136
       print("Range = ",range)
137
138
139
       # #27 quantile(mydata$training_hours)
140
       df = pd.read_csv(file_path)
       quantile = df['training_hours'].quantile()
141
       print("Quantile = ",quantile)
142
143
144
       maxtable = df['training_hours'].max()
145
      print("Maxtable = ",maxtable)
146
                                      TERMINAL
PROBLEMS OUTPUT DEBUG CONSOLE
                                                  PORTS
47.0
336
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.
ibs\debugpy\adapter/../..\debugpy\launcher' '57236' '--' 'C:\Users\Admin\Downloads\Untitled-2.py
<_io.TextIOWrapper name='D:/lidworn na/data sci/DataScience.csv' mode='r' encoding='utf-8'>
Mean = 65.36689633573442

Median = 77.00
Median = 47.0
Var = 3607.0188487579544
Min = 1
Mean = 336
Range = 0
Quantile = 47.0
Maxtable = 336
```

#### 28) max(table(mydata\$gender))

```
129
        # #25 max(mydata$training hours)
130
      df = pd.read_csv(file_path)
       max = df['training_hours'].max()
        print("Mean = ",max)
133
134
       # #26 range(mydata$training_hours)
       df = pd.read_csv(file_path)
       range = df['training_hours'].max()-df['training_hours'].max()
137
        print("Range = ",range)
138
        # #27 quantile(mydata$training_hours)
140
       df = pd.read_csv(file_path)
       quantile = df['training_hours'].quantile()
print("Quantile = ",quantile)
141
142
143
144
       maxtable = df['training_hours'].max()
print("Maxtable = ",maxtable)
145
146
                                          TERMINAL
PROBLEMS OUTPUT DEBUG CONSOLE
                                                       PORTS
47.0
336
PS C:\Users\Admin\Downloads> c:; cd 'c:\Users\Admin\Downloads'; & 'c:\Users\Admin\AppData\Local\Microsoft\WindowsApps\python3.10.
ibs\debugpy\adapter/../..\debugpy\launcher' '57236' '--' 'C:\Users\Admin\Downloads\Untitled-2.py <_io.TextIOWrapper name='D:/ใช้สงงาน มล/data sci/DataScience.csv' mode='r' encoding='utf-8'>
Lo. Text Towrapper name= 1
Mean = 65.36689633573442
Median = 47.0
Var = 3607.0188487579544
Min = 1
Mean = 336
Range = 0
Quantile = 47.0
Maxtable = 336
```