lec3_step1

November 30, 2022

[ ]:
```
## Python basics for novice data scientists, supported by Wagatsuma Lab@Kyutech
#
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#
# # @Time    : 2022-8-10
# # @Author  : Hiroaki Wagatsuma
# # @Site    : https://github.com/hirowgit/2A1_python_intermediate_course
# # @IDE     : Python 3.9.13 (main, Aug  7 2022, 01:33:23)  [Clang 13.1.6␣
 ↪(clang-1316.0.21.2.5)] on darwin
# # @File    : lec3_step1.py
```

[1]:
```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

[ ]:
```
allData = np.loadtxt('allData200.csv', delimiter=',', dtype='int64')
allData
```

[3]:
```
import pandas as pd
```

```
df = pd.read_csv('allData200.csv',delimiter=',', dtype='int64')
print(df)
```

```
     9   7   3   5  6   2  8   4  1  10
0    6   4  10   7  9   3  8   5  1   2
1    4   3   6   2  7   5  9  10  1   8
2    3   6   7   4  1   8  2   5  9  10
3    1  10   4   8  7   6  3   5  2   9
4    7   8   9   2  3   4  5  10  1   6
..  ..  ..  ..  .. ..  .. ..  .. ..  ..
194  6  10   3   7  8   9  4   5  2   1
195  8   1   5  10  6   4  2   7  9   3
196  3   4   1  10  5   9  6   2  7   8
197  6   7   3   2  5  10  1   8  9   4
198  9   8   5   3  4   1  2  10  7   6

[199 rows x 10 columns]
```

[7]:
```
df_tsv = pd.read_table('part2_Interface_definition_code_data_fullENG.csv',␣
↪index_col=0)
print(df_tsv)
```

```
Empty DataFrame
Columns: []
Index: [,1-1,Distribution_line_slot_configuration_data,,6,,6,[LINE.csv],
,No,Item,Type,Number of digits,Type,Number of digits,Remarks,
,1,Line_number,Number,2,Number,2,, ,2,Number_of_upper_slots,Number,2,Number,2,,
,3,Number_of_lower_slots,Number,2,Number,2,, ,,,,,,,, ,,,,,,,,
,1-2,Order_data,,40,,40,[ORDER.csv], ,No,Item,Type,Number of digits,Type,Number
of digits,Remarks, ,1,Center_code,Number,2,Number,2,,
,2,Company_code,Number,4,Number,4,, ,3,Division_code,Number,2,Number,2,,
,4,Store_code,Number,3,Number,3,, ,5,Carry-in_regulations,Number,1,Number,1,,
,6,Shipping_priority,Number,2,Number,2,,
,7,Delivery_time_limit,Number,4,Number,4,,
,8,Regular_special_sale,Number,1,Number,1,,
,9,Sorting_classification_code,Number,2,Number,2,,
,10,Product_code,Number,13,Number,13,, ,11,Shipping_packing,Number,1,Number,1,,
,12,Number_of_orders,Number,"4,1",Number,"4,1",,
,13,Total_Action_Step,Number,5,Number,5,, ,,,,,,,, ,,,,,,,,
,1-3,Productivity_data,,8,,8,[PRODUCTIVITY.csv], ,No,Item,Type,Number of
digits,Type,Number of digits,, ,1,Work_start_time,Number,4,Number,4,,
,2,Action_step,Number,4,Number,4,, ,,,,,,,, ,,,,,,,, ,,,,,,,, 2. Output
file,,,,,,,, ,2-1,Execution_result,,41,,41,[STATUS.csv], ,No,Item,Type,Number of
digits,Type,Number of digits,, ,1,Completion_code,Number,1,Number,1,,
,2,Error_message,letter,40,letter,40,, ,,,,,,,, ,,,,,,,,
,2-2,Execution_result,,64,,64,[SETTING.csv], ,No,Item,Type,Number of
digits,Type,Number of digits,Remarks, ,1,Sequencing_No,Number,2,Number,2,,
```

```
,2,Allocation_line_No,Number,2,Number,2,,
,3,Slot_allocation_No,Number,2,Number,2,, ,4,Center_code,Number,2,Number,2,,
,5,Company_code,Number,4,Number,4,, ,6,Division_code,Number,2,Number,2,,
,7,Store_code,Number,3,Number,3,, ,8,Carry-in_regulations,Number,1,Number,1,,
,9,Regular_special_sale,Number,1,Number,1,,
,10,Sorting_classification_code,Number,2,Number,2,,
,11,Slot_division,Number,1,Number,1,,
,12,Total_number_of_ActionSteps,Number,5,Number,5,,
,13,Total_number_of_balls,Number,5,Number,5,,
,14,Total_number_of_pieces,Number,5,Number,5,,
,15,Total_number_of_bags,Number,5,Number,5,,
,16,Total_halves,Number,5,Number,5,,
,17,Line_ActionStep_number,Number,7,Number,7,,
,18,Line_ActionStep_average_ratio,Number,3,Number,3,,
,19,Assumed_work_time,Number,7,Number,7,]
```

[8]:
```
df_tsv = pd.read_table('part2_Interface_definition_code_data_fullENG.csv')
print(df_tsv)
```

```
                                1. Input file,,,,,,,
0    ,1-1,Distribution_line_slot_configuration_data…
1    ,No,Item,Type,Number of digits,Type,Number of …
2                    ,1,Line_number,Number,2,Number,2,
3          ,2,Number_of_upper_slots,Number,2,Number,2,
4          ,3,Number_of_lower_slots,Number,2,Number,2,
5                                              ,,,,,,,
6                                              ,,,,,,,
7                  ,1-2,Order_data,,40,,40,[ORDER.csv]
8    ,No,Item,Type,Number of digits,Type,Number of …
9                    ,1,Center_code,Number,2,Number,2,
10                  ,2,Company_code,Number,4,Number,4,
11                 ,3,Division_code,Number,2,Number,2,
12                    ,4,Store_code,Number,3,Number,3,
13         ,5,Carry-in_regulations,Number,1,Number,1,
14            ,6,Shipping_priority,Number,2,Number,2,
15           ,7,Delivery_time_limit,Number,4,Number,4,
16          ,8,Regular_special_sale,Number,1,Number,1,
17   ,9,Sorting_classification_code,Number,2,Number,2,
18               ,10,Product_code,Number,13,Number,13,
19             ,11,Shipping_packing,Number,1,Number,1,
20     ,12,Number_of_orders,Number,"4,1",Number,"4,1",
21            ,13,Total_Action_Step,Number,5,Number,5,
22                                             ,,,,,,,
23                                             ,,,,,,,
24     ,1-3,Productivity_data,,8,,8,[PRODUCTIVITY.csv]
25   ,No,Item,Type,Number of digits,Type,Number of …
26               ,1,Work_start_time,Number,4,Number,4,
27                   ,2,Action_step,Number,4,Number,4,
```

```
                                          ,,,,,,,
                                          ,,,,,,,
                                          ,,,,,,,
                              2. Output file,,,,,,
        ,2-1,Execution_result,,41,,41,[STATUS.csv]
,No,Item,Type,Number of digits,Type,Number of …
             ,1,Completion_code,Number,1,Number,1,
             ,2,Error_message,letter,40,letter,40,
                                          ,,,,,,,
                                          ,,,,,,,
       ,2-2,Execution_result,,64,,64,[SETTING.csv]
,No,Item,Type,Number of digits,Type,Number of …
               ,1,Sequencing_No,Number,2,Number,2,
          ,2,Allocation_line_No,Number,2,Number,2,
          ,3,Slot_allocation_No,Number,2,Number,2,
                 ,4,Center_code,Number,2,Number,2,
                ,5,Company_code,Number,4,Number,4,
               ,6,Division_code,Number,2,Number,2,
                  ,7,Store_code,Number,3,Number,3,
        ,8,Carry-in_regulations,Number,1,Number,1,
        ,9,Regular_special_sale,Number,1,Number,1,
,10,Sorting_classification_code,Number,2,Numbe…
              ,11,Slot_division,Number,1,Number,1,
,12,Total_number_of_ActionSteps,Number,5,Numbe…
     ,13,Total_number_of_balls,Number,5,Number,5,
    ,14,Total_number_of_pieces,Number,5,Number,5,
      ,15,Total_number_of_bags,Number,5,Number,5,
               ,16,Total_halves,Number,5,Number,5,
    ,17,Line_ActionStep_number,Number,7,Number,7,
,18,Line_ActionStep_average_ratio,Number,3,Num…
          ,19,Assumed_work_time,Number,7,Number,7,
```

[6]:
```
df_tsv = pd.read_csv('part2_Interface_definition_code_data_fullENG.csv')
print(df_tsv)
```

```
    1. Input file Unnamed: 1                                  Unnamed: 2  \
0             NaN        1-1  Distribution_line_slot_configuration_data
1             NaN         No                                        Item
2             NaN          1                                 Line_number
3             NaN          2                       Number_of_upper_slots
4             NaN          3                       Number_of_lower_slots
5             NaN        NaN                                         NaN
6             NaN        NaN                                         NaN
7             NaN        1-2                                Order_data
8             NaN         No                                        Item
9             NaN          1                               Center_code
10            NaN          2                              Company_code
11            NaN          3                             Division_code
```

12	NaN	4	Store_code
13	NaN	5	Carry-in_regulations
14	NaN	6	Shipping_priority
15	NaN	7	Delivery_time_limit
16	NaN	8	Regular_special_sale
17	NaN	9	Sorting_classification_code
18	NaN	10	Product_code
19	NaN	11	Shipping_packing
20	NaN	12	Number_of_orders
21	NaN	13	Total_Action_Step
22	NaN	NaN	NaN
23	NaN	NaN	NaN
24	NaN	1-3	Productivity_data
25	NaN	No	Item
26	NaN	1	Work_start_time
27	NaN	2	Action_step
28	NaN	NaN	NaN
29	NaN	NaN	NaN
30	NaN	NaN	NaN
31	2. Output file	NaN	NaN
32	NaN	2-1	Execution_result
33	NaN	No	Item
34	NaN	1	Completion_code
35	NaN	2	Error_message
36	NaN	NaN	NaN
37	NaN	NaN	NaN
38	NaN	2-2	Execution_result
39	NaN	No	Item
40	NaN	1	Sequencing_No
41	NaN	2	Allocation_line_No
42	NaN	3	Slot_allocation_No
43	NaN	4	Center_code
44	NaN	5	Company_code
45	NaN	6	Division_code
46	NaN	7	Store_code
47	NaN	8	Carry-in_regulations
48	NaN	9	Regular_special_sale
49	NaN	10	Sorting_classification_code
50	NaN	11	Slot_division
51	NaN	12	Total_number_of_ActionSteps
52	NaN	13	Total_number_of_balls
53	NaN	14	Total_number_of_pieces
54	NaN	15	Total_number_of_bags
55	NaN	16	Total_halves
56	NaN	17	Line_ActionStep_number
57	NaN	18	Line_ActionStep_average_ratio
58	NaN	19	Assumed_work_time

	Unnamed: 3	Unnamed: 4	Unnamed: 5	Unnamed: 6	\
0	NaN	6	NaN	6	
1	Type	Number of digits	Type	Number of digits	
2	Number	2	Number	2	
3	Number	2	Number	2	
4	Number	2	Number	2	
5	NaN	NaN	NaN	NaN	
6	NaN	NaN	NaN	NaN	
7	NaN	40	NaN	40	
8	Type	Number of digits	Type	Number of digits	
9	Number	2	Number	2	
10	Number	4	Number	4	
11	Number	2	Number	2	
12	Number	3	Number	3	
13	Number	1	Number	1	
14	Number	2	Number	2	
15	Number	4	Number	4	
16	Number	1	Number	1	
17	Number	2	Number	2	
18	Number	13	Number	13	
19	Number	1	Number	1	
20	Number	4,1	Number	4,1	
21	Number	5	Number	5	
22	NaN	NaN	NaN	NaN	
23	NaN	NaN	NaN	NaN	
24	NaN	8	NaN	8	
25	Type	Number of digits	Type	Number of digits	
26	Number	4	Number	4	
27	Number	4	Number	4	
28	NaN	NaN	NaN	NaN	
29	NaN	NaN	NaN	NaN	
30	NaN	NaN	NaN	NaN	
31	NaN	NaN	NaN	NaN	
32	NaN	41	NaN	41	
33	Type	Number of digits	Type	Number of digits	
34	Number	1	Number	1	
35	letter	40	letter	40	
36	NaN	NaN	NaN	NaN	
37	NaN	NaN	NaN	NaN	
38	NaN	64	NaN	64	
39	Type	Number of digits	Type	Number of digits	
40	Number	2	Number	2	
41	Number	2	Number	2	
42	Number	2	Number	2	
43	Number	2	Number	2	
44	Number	4	Number	4	
45	Number	2	Number	2	
46	Number	3	Number	3	

47	Number	1	Number	1
48	Number	1	Number	1
49	Number	2	Number	2
50	Number	1	Number	1
51	Number	5	Number	5
52	Number	5	Number	5
53	Number	5	Number	5
54	Number	5	Number	5
55	Number	5	Number	5
56	Number	7	Number	7
57	Number	3	Number	3
58	Number	7	Number	7

	Unnamed: 7
0	[LINE.csv]
1	Remarks
2	NaN
3	NaN
4	NaN
5	NaN
6	NaN
7	[ORDER.csv]
8	Remarks
9	NaN
10	NaN
11	NaN
12	NaN
13	NaN
14	NaN
15	NaN
16	NaN
17	NaN
18	NaN
19	NaN
20	NaN
21	NaN
22	NaN
23	NaN
24	[PRODUCTIVITY.csv]
25	NaN
26	NaN
27	NaN
28	NaN
29	NaN
30	NaN
31	NaN
32	[STATUS.csv]
33	NaN

```
34                NaN
35                NaN
36                NaN
37                NaN
38       [SETTING.csv]
39             Remarks
40                NaN
41                NaN
42                NaN
43                NaN
44                NaN
45                NaN
46                NaN
47                NaN
48                NaN
49                NaN
50                NaN
51                NaN
52                NaN
53                NaN
54                NaN
55                NaN
56                NaN
57                NaN
58                NaN
```

[ ]: