Artificial Intelligence

Homework Assignment 1.

1. Consider the table shown below. Make 3 lists(dep, sno, gpa).   (1 pt each)
    a)   Make 3 lists with python internal libraries
    b)   Make 3 lists with numpy array
    c)   Make 3 lists with pandas series

dep	cs	cs	dt	dcd	dt	as	as	ice	ice	ice
sno	0001	0002	0003	0004	0005	0006	0007	0008	0009	0010
gpa	2.10	3.50	4.50	2.70	3.00	3.15	4.00	0.00	3.25	3.70

2. Consider the table shown in Q1.   (1 pt each)
    a)   print **mean** of gpa with python internal libraries upto second decimal point.
    b)   print **mean** and **median** of gpa with numpy upto second decimal point.
    c)   print **mean** and **median** of gpa with pandas upto second decimal point.

3. Define the function for calculating the median value of python list with python internal libraries and print median value of gpa. (Only with built-in function.)   (1 pt)

4. Using pandas.DataFrame, sort all data by gpa and print row with the 3rd highest gpa.   (1 pt)

5. Print mean, max, min of gpa by group of dep.   (1 pt)

6. Print mean of gpa of **each dep by year** as shown below using the pivot[1]. Use the data below.   (1 pt)

```
{ 'dep' : ["cs", "cs", "dt", "dt", "dt", "as", "as", "cs", "dt", "as"],
  'sno' : ["0001", "0002", "0003", "0004", "0005", "0006", "0007", "0008", "0009", "0010"],
  'gpa' : [2.10, 3.50, 4.50, 2.70, 3.00, 3.20, 4.00, 0.00, 3.20, 3.70],
  'year' : [2018, 2018, 2019, 2019, 2020, 2020, 2020, 2020, 2021, 2021]}
```

	gpa			
year	2018	2019	2020	2021
dep				
as	NaN	NaN	3.6	3.7
cs	2.8	NaN	0.0	NaN
dt	NaN	3.6	3.0	3.2

Submitting your assignment :
- Due date: Zip your file and upload it at https://tahiti.mju.ac.kr/moodle/ by 24:00 Monday March 22nd, 2021.
- Your homework cover page must be of the form provided by the courseware.
- You must zip the homework cover page and your jupyter notebook assignment file(*.ipynb).
- Both of your file names must be of the form "hw1_StudentId_StudentName.ipynb", i.e., hw1_60063539_이일호.ipynb
- You must protect your homework from others. Any form of academic dishonesty will not be tolerated. If you get caught, you will receive -10 points for this homework!
- This assignment is 10 points total and we will not accept any late homeworks!

[1] 구글링 해서 찾아보고 적용할 것!