

KL - Learning Management System

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[1] import numpy as np
import pandas as pd

[2] a1=[10,15,17,26]
a2=[12,11,21,24]
ar1=np.array(a1)
ar2=np.array(a2)
sum_array=ar1+ar2
print(sum_array)

[22 26 38 50]

[3] print(3*sum_array)

[66 78 114 150]

[4] print(np.sum(sum_array))

136

[5] sum_array[sum_array!=26]

array([22, 38, 50])


[6] np.logical_and(sum_array>20,sum_array<50)

array([True, True, True, False])




[7] np.logical_or(sum_array>20,sum_array<50)

array([True, True, True, True])

Person 1



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```
[8] import numpy as np
import pandas as pd
a1=[1,3,5,7]
a2=[2,45,8,2]
ar1=np.array(a1)
ar2=np.array(a2)
print(ar1[1:])
print(ar1[:3])

[3 5 7]
[1 3 5]

[9] arr = np.array([1, 2, 3, 4, 5, 6, 7])
print(arr[1:5])
arr = np.array([[1, 2, 3, 4, 5], [6, 7, 8, 9, 10]])
print(arr[1, 1:4])
arr = np.array([[1, 2, 3, 4, 5], [6, 7, 8, 9, 10]])
print(arr[0:2, 2])
print(arr.shape)

[2 3 4 5]
[7 8 9]
[3 8]
(2, 5)


[10] test_score=np.array([[83,71,57,63],[54,68,81,45]])
passing_score=test_score>60
passing_score

array([[ True,  True, False,  True],
       [False,  True,  True, False]])

[11] np.array([[1,2,3],[4,5,6]])




array([[1, 2, 3],
       [4, 5, 6]])
```

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#Sum of 2-d Array and multiply with 3

import numpy as np

import pandas as pd

a1=np.array([[1,32,5],[1,53,6],[2,52,5]])

a2=np.array([[63,6,4],[8,9,4],[7,4,7]])

sum=a1+a2

sum

print(sum)

mlt=sum*3

mlt

#Slicing of 2 D Array

import numpy as np

import pandas as pd

a1=np.array([[1,32,5],[1,53,6],[2,52,5]])

a2=np.array([[63,6,4],[8,9,4],[7,4,7]])

print(a1[1,1:3])

print(a1[0,1:4])

[[64 38 9]

[9 62 10]

[9 56 12]]

[53 6]

[32 5]

[13]

ar1=np.array([[1,2,3],[4,5,6]])

ar2=np.array([[1,2,3],[4,5,6]])

sum_array=ar1+ar2

print(sum_array)

[[2 4 6]

[8 10 12]]

[14]


#logical and

np.logical_and(sum_array>20,sum_array<50)

array([[False, False, False],




[False, False, False]])

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```
[15] #logical or
np.logical_or(sum_array>20,sum_array<50)

array([[ True,  True,  True],
       [ True,  True,  True]])

[16] #logical not
np.logical_not(sum_array>20,sum_array<50)

array([[ True,  True,  True],
       [ True,  True,  True]])

[17] #slicing
print(sum_array[1,1:4])


[10 12]

[18] #boolean
print(10 > 9)
print(10 == 9)
print(10 < 9)

True
False
False




[19] a=np.array([[73,94,44,76,62,10,86,74],
               [86,4,9,87,31,11,33,31],
               [77,40,72,54,20,87,91,51],
               [84,87,34,29,78,26,10,93],
               [38,20,77,27,89,51,71,84],
               [70,11,33,55,66,92,97,26],
               [44,44,69,14,20,83,61,27],
               [42,23,33,41,8,4,93,8]])
a.reshape(4,4,4)
```

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```
a=np.array([[73,94,44,76,62,10,86,74],
            [86,4,9,87,31,11,33,31],
            [77,40,72,54,20,87,91,51],
            [84,87,34,29,78,26,10,93],
            [38,20,77,27,89,51,71,84],
            [70,11,33,55,66,92,97,26],
            [44,44,69,14,20,83,61,27],
            [42,23,33,41,8,4,93,8]])
a.reshape(4,4,4)

array([[[73, 94, 44, 76],
        [62, 10, 86, 74],
        [86,  4,  9, 87],
        [31, 11, 33, 31]],

       [[77, 40, 72, 54],
        [20, 87, 91, 51],
        [84, 87, 34, 29],
        [78, 26, 10, 93]],

       [[38, 20, 77, 27],
        [89, 51, 71, 84],
        [70, 11, 33, 55],
        [66, 92, 97, 26]],

       [[44, 44, 69, 14],
        [20, 83, 61, 27],
        [42, 23, 33, 41],
        [ 8,  4, 93,  8]])


[20] np.arange(1,10,2)

array([1, 3, 5, 7, 9])

[21] a=np.array([[0,1],[2,3]])
np.resize(a,(2,3))




array([[0, 1, 2],
       [3, 0, 1]])
```

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```
[22] x = np.arange(8).reshape(2, 2, 2)
      np.hsplit(x, 2)

      [array([[[0, 1]],
              [[4, 5]]]), array([[[2, 3]],
              [[6, 7]]])]

[23] arr = np.arange(12).reshape((3, 4))
      condition = np.mod(arr, 3)==0
      np.extract(condition, arr)

      array([0, 3, 6, 9])

#specify values of each columns
df=pd.DataFrame(
    {"a":[4,5,6],
     "b":[7,8,9],
     "c":[10,11,12]},
    index=[1,2,3]
)
df
```

	a	b	c
1	4	7	10
2	5	8	11
3	6	9	12

```
[25] #specify values of each rows
      df=pd.DataFrame(
          [[4,7,10],
           [5,8,11],
           [6,9,12],],
```


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#specify values of each rows
df=pd.DataFrame(
[[4,7,10],
[5,8,11],
[6,9,12],],
index=[1,2,3],
columns=['a','b','c']
)
df


	a	b	c
1	4	7	10
2	5	8	11
3	6	9	12

[26] df=pd.DataFrame(
{"a":[4,5,6],
"b":[7,8,9],
"c":[10,11,12]},
index=pd.MultiIndex.from_tuples(
[('d',1),('d',2),('e',3)],
names=['n','v']
))
df

	n	v	a	b	c
d	1	4	7	10	
	2	5	8	11	
e	3	6	9	12	




[27] from google.colab import files

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```
[27] from google.colab import files

uploaded = files.upload()

Choose Files ds-lab1-cvs.csv
• ds-lab1-cvs.csv(application/vnd ms-excel) - 38026 bytes, last modified: 1/26/2021 - 100% done
Saving ds-lab1-cvs.csv to ds-lab1-cvs.csv


import numpy as np
import pandas as pd
import statistics

[29] Dataset=pd.read_csv('ds-lab1-cvs.csv')
Dataset
```

	gender	NationalITY	PlaceofBirth	StageID	GradeID	SectionID	Topic	Semester	Relation	raisedhands	VisITedResources	AnnouncementsView	Discussi
0	M	KW	KuwalT	lowerlevel	G-04	A	IT	F	Father	15	16	2	
1	M	KW	KuwalT	lowerlevel	G-04	A	IT	F	Father	20	20	3	
2	M	KW	KuwalT	lowerlevel	G-04	A	IT	F	Father	10	7	0	
3	M	KW	KuwalT	lowerlevel	G-04	A	IT	F	Father	30	25	5	
4	M	KW	KuwalT	lowerlevel	G-04	A	IT	F	Father	40	50	12	
...
475	F	Jordan	Jordan	MiddleSchool	G-08	A	Chemistry	S	Father	5	4	5	8
476	F	Jordan	Jordan	MiddleSchool	G-08	A	Geology	F	Father	50	77	14	28
477	F	Jordan	Jordan	MiddleSchool	G-08	A	Geology	S	Father	55	74	25	29
478	F	Jordan	Jordan	MiddleSchool	G-08	A	History	F	Father	30	17	14	57
479	F	Jordan	Jordan	MiddleSchool	G-08	A	History	S	Father	35	14	23	62




480 rows × 17 columns

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Dataset.describe

<bound method NDFrame.describe of gender NationalITY ... StudentAbsenceDays Class
0 M KW ... Under-7 M
1 M KW ... Under-7 M
2 M KW ... Above-7 L
3 M KW ... Above-7 L
4 M KW ... Above-7 M
... ..
475 F Jordan ... Above-7 L
476 F Jordan ... Under-7 M
477 F Jordan ... Under-7 M
478 F Jordan ... Above-7 L
479 F Jordan ... Above-7 L
[480 rows x 17 columns]>


[31] Dataset.mean

<bound method DataFrame.mean of gender NationalITY ... StudentAbsenceDays Class
0 M KW ... Under-7 M
1 M KW ... Under-7 M
2 M KW ... Above-7 L
3 M KW ... Above-7 L
4 M KW ... Above-7 M
... ..
475 F Jordan ... Above-7 L
476 F Jordan ... Under-7 M
477 F Jordan ... Under-7 M
478 F Jordan ... Above-7 L
479 F Jordan ... Above-7 L
[480 rows x 17 columns]>




[32] Dataset.median

<bound method DataFrame.median of gender NationalITY ... StudentAbsenceDays Class
0 M KW ... Under-7 M
1 M KW ... Under-7 M
2 M KW ... Above-7 L
3 M KW ... Above-7 L

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[32] Dataset.median

<bound method DataFrame.median of

	gender	NationalITy	...	StudentAbsenceDays	Class
0	M	KW	...	Under-7	M
1	M	KW	...	Under-7	M
2	M	KW	...	Above-7	L
3	M	KW	...	Above-7	L
4	M	KW	...	Above-7	M
...
475	F	Jordan	...	Above-7	L
476	F	Jordan	...	Under-7	M
477	F	Jordan	...	Under-7	M
478	F	Jordan	...	Above-7	L
479	F	Jordan	...	Above-7	L

[480 rows x 17 columns]>

[33] x=slice(3)


print(Dataset[x])

gender NationalITy ... StudentAbsenceDays Class

0	M	KW	...	Under-7	M
1	M	KW	...	Under-7	M
2	M	KW	...	Above-7	L




[3 rows x 17 columns]

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