

Assignment-1

Python Programming

Assignment Date	27-09-2022
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Maximum Marks	2 Marks

Basic Python

1. Split this string

```
s = "Hi there Sakthi!"
s=s.split()
print(s);
['Hi', 'there', 'Sakthi!']
```

2. Use .format() to print the following string.

Output should be: The diameter of Earth is 12742 kilometers.

```
planet = "Earth"
diameter = 12742
print('The diameter of {} is {} kilometers.' . format(planet,diameter));
The diameter of Earth is 12742 kilometers.
```

3. In this nest dictionary grab the word "hello"

```
d =
{'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
print(d['k1'][3]['tricky'][3]['target'][3])
hello
```

Numpy

```
import numpy as np
array=np.zeros(10)
print("An array of 10 zeros:")
print(array)
array=np.ones(10)*5
print("An array of 10 fives:")
```

```
print(array)
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
An array of 10 fives:
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
import numpy as np
array=np.zeros(10)
print("An array of 10 zeros:")
print(array)
array=np.ones(10)
print("An array of 10 ones:")
print(array)
array=np.ones(10)*5
print("An array of 10 fives:")
print(array)
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
An array of 10 ones:
[1. 1. 1. 1. 1. 1. 1. 1. 1. 1.]
An array of 10 fives:
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

5. Create an array of all the even integers from 20 to 35

```
import numpy as np
array=np.arange(20,36)
print("Array of all the even integer from 20 to 30")
print (array)
```

6. Create a 3x3 matrix with values ranging from 0 to 8

```
np.arange(0,9).reshape((3,3))
array([[0, 1, 2],
       [3, 4, 5],
       [6, 7, 8]])
```

7. Concatenate a and b

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

```
import numpy as np
a=np.array([[1,2],[3,4]])
b=np.array([[5,6]])
np.concatenate((a,b),axis=0)
np.concatenate((a,b.T),axis=1)
np.concatenate((a,b),axis=None)
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
# initialize data of lists
data={'Name':['siva','sakthi','kutty'],'Age':[20,21,32]}
# create DataFrame
df=pd.DataFrame(data)
#print the output
df
```

	Name	Age
0	siva	20
1	sakthi	21
2	kutty	32

9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023

```
#importig pandas as pd
import pandas as pd
perl=pd.date_range(start='1-01-2023',end='1-02-2023')
for val in perl:
    print(val,)
2023-01-01 00:00:00
2023-01-02 00:00:00
```

10. Create 2D list to DataFrame

```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
import pandas as pd
a=[[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
print(type(a))
for b in a:
    for j in b:
        print(j)
        dt=zip(a)
        df=pd.DataFrame(dt,columns=["d"])
        print(type(df))
        print(df)
<class 'list'>
1
<class 'pandas.core.frame.DataFrame'>
d
0 [1, aaa, 22]
1 [2, bbb, 25]
2 [3, ccc, 24]
```

```

aaa
<class 'pandas.core.frame.DataFrame'>
      d
0  [1, aaa, 22]
1  [2, bbb, 25]
2  [3, ccc, 24]
22
<class 'pandas.core.frame.DataFrame'>
      d
0  [1, aaa, 22]
1  [2, bbb, 25]
2  [3, ccc, 24]
2
<class 'pandas.core.frame.DataFrame'>
      d
0  [1, aaa, 22]
1  [2, bbb, 25]
2  [3, ccc, 24]
bbb
<class 'pandas.core.frame.DataFrame'>
      d
0  [1, aaa, 22]
1  [2, bbb, 25]
2  [3, ccc, 24]
25
<class 'pandas.core.frame.DataFrame'>
      d
0  [1, aaa, 22]
1  [2, bbb, 25]
2  [3, ccc, 24]
3
<class 'pandas.core.frame.DataFrame'>
      d
0  [1, aaa, 22]
1  [2, bbb, 25]
2  [3, ccc, 24]
ccc
<class 'pandas.core.frame.DataFrame'>
      d
0  [1, aaa, 22]
1  [2, bbb, 25]
2  [3, ccc, 24]
24
<class 'pandas.core.frame.DataFrame'>
      d
0  [1, aaa, 22]
1  [2, bbb, 25]
2  [3, ccc, 24]

```