

Assignment -1

Python Programming

Assignment Date	19 September 2022
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Student Roll Number	CS19002
Maximum Marks	2 Marks

Basic Python

1. Split this string

```
In [ ]:  
s = "Hi there Sam!"
```

```
In [ ]:  
x = s.split()print(x)  
['Hi', 'there', 'Sam!']
```

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

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

```
In [ ]:  
planet = "Earth"  
diameter = 12742  
  
In [ ]:  
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"

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

Numpy

```
In [ ]:
```

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
In []:
```

In []:

```
arr = np.zeros(10)
print (arr)
```

```
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]In [ ]:
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

```
arr = np.ones(10)*5
print (arr)
```

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

In []:

```
arr = np.arange(20,35,2)
print(arr)
```

```
[20 22 24 26 28 30 32 34]
```

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

In []:

```
np.arange(0,9).reshape((3,3))
```

Out[]:

```
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])

In []:

```
from pandas.compat import np_version_under1p19
a = np.array([1,2,3])
b = np.array([4, 5, 6])
np_version_under1p19.concatenate((a,b), axis=0)
```

Out[]:

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [3]:

```
import pandas as pd
```

In [10]:

```
df = pd.DataFrame()
data1 = (1,2,3)
data = (10,20,30)
```

```
df = pd.DataFrame(data1,data, columns=['numbers'])df
```

```
Out[10]:
```

	numbers
10	1
20	2
30	3

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

```
In [15]:
```

```
pd.date_range(start='1/1/2023', end='10/02/2023')Out[15]:
```

```
DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',
                '2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',
                '2023-01-09', '2023-01-10',
                ...,
                '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
                '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
                '2023-10-01', '2023-10-02'],
              dtype='datetime64[ns]', length=275, freq='D')
```

10. Create 2D list to DataFrame

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

```
In [21]:
```

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

```
In [29]:
```

```
df = pd.DataFrame(lists, columns=['FName', 'LName', 'Age'],
dtype = int)
```

```
print(df)
```

	FName	LName	Age
	1	aaa	22
1	2	bbb	25
2	3	ccc	24

```
/usr/local/lib/python3.7/dist-packages/IPython/core/interactiveshell.py:3326: FutureWarni
ng: Could not cast to int64, falling back to object. This behavior is deprecated. In a fu
ture version, when a dtype is passed to 'DataFrame', either all columns will be cast to t
hat dtype, or a TypeError will be raised
exec(code_obj, self.user_global_ns, self.user_ns)
```

```
In [ ]:
```