**Assignment -1**

Python Programming

| | |
|---|---|
| Assignment Date | 25 September 2022 |
| Student Name | M.Subasri |
| Student Roll Number | 822019104010 |
| Maximum Marks | 2 Marks |

**Question-1:**

1. Split this string

```
s = "Hi there Sam!"
```

Solution:

In [ ]:

```
String = "Hi there Sam!"
n=s.split()
print(n)
```

```
['Hi', 'there', 'Sam!']
```


**Question-2:**

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

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

Solution:

In [ ]:

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

```
The diameter of Earth is 12742 kilometers
```

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

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

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

In [ ]:
```
planet = "Earth"
diameter = 12742
star="The diameter of {p} is {k} kilometers"
print(star.format(p=planet,k=diameter))
```

```
The diameter of Earth is 12742 kilometers
```

**Question-3:**

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

Solution:

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

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

Out[ ]:
```
'hello'
```

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

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

Out[ ]:
```
'hello'
```

**Question-4:**

Numpy

In [ ]: **import** numpy **as** np

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

Solution:

```
In [ ]: import numpy as np
array=np.zeros(10)
print("An array of 10 zeros")
print(array)
```

```
An array of 10 zeros
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

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

```
An array of 10 fives
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

# Numpy

```
In [ ]: import numpy as np
```

## 4.1 Create an array of 10 zeros?

## 4.2 Create an array of 10 fives?

```
In [ ]: import numpy as np
array=np.zeros(10)
print("An array of 10 zeros")
print(array)
```

```
An array of 10 zeros
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

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

```
An array of 10 fives
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

**Question-5:**

Solution:

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

```
In [ ]: a=np.arange(20,35,2)
print(a)
```

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

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

```
In [ ]: a=np.arange(20,35,2)
        print(a)
```

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

**Question-6:**

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

Solution:

```
In [ ]: x=np.arange(0,9).reshape(3,3)
print(x)

[[0 1 2]
 [3 4 5]
 [6 7 8]]
```

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

```
In [ ]: x=np.arange(0,9).reshape(3,3)
        print(x)
```

```
[[0 1 2]
 [3 4 5]
 [6 7 8]]
```

**Question-7:**

7. Concatenate a and b

Solution:

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

```
In [ ]: import numpy as np
a=np.array([1,2,3])
b=np.array([4,5,6])
np.concatenate((a, b))
Out[ ]: array([1, 2, 3, 4, 5, 6])
```

## 7. Concatenate a and b

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

```
In [ ]: import numpy as np
        a=np.array([1,2,3])
        b=np.array([4,5,6])
        np.concatenate((a, b))

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

**Question-8:**

Pandas

8. Create a dataframe with 3 rows and 2 columns

Solution:

```
In [ ]: import pandas as pd
In [ ]:import pandas as pd
data=[['vamsi',10],['mahesh',20],['sai',30]]
a=pd.DataFrame(data,columns=['Name','Age',])
print(a)

 Name Age
0 vamsi 10
1 mahesh 20
2 sai 30
```

## Pandas

## 8. Create a dataframe with 3 rows and 2 columns

```
In [ ]: import pandas as pd

In [ ]: import pandas as pd
        data=[['vamsi',10],['mahesh',20],['sai',30]]
        a=pd.DataFrame(data,columns=['Name','Age',])
        print(a)

     Name  Age
0   vamsi   10
1  mahesh   20
2     sai   30
```

**Question-9:**

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

Solution:

```
In [ ]: from datetime import datetime,timedelta

def date_range(start,end):
```

```
 delta=end - start
 days= [start + timedelta(days=i) for i in range(delta.days + 1)]
return days
start_date=datetime(2023,1,1)
end_date=datetime(2023,2,10)
print(date_range(start_date, end_date))
```

```
[datetime.datetime(2023, 1, 1, 0, 0), datetime.datetime(2023, 1, 2, 0, 0),
datetime.datetime(2023, 1, 3, 0, 0), datetime.datetime(2023, 1, 4, 0, 0),
datetime.datetime(2023, 1, 5, 0, 0), datetime.datetime(2023, 1, 6, 0, 0),
datetime.datetime(2023, 1, 7, 0, 0), datetime.datetime(2023, 1, 8, 0, 0),
datetime.datetime(2023, 1, 9, 0, 0), datetime.datetime(2023, 1, 10, 0, 0),
datetime.datetime(2023, 1, 11, 0, 0), datetime.datetime(2023, 1, 12, 0, 0),
datetime.datetime(2023, 1, 13, 0, 0), datetime.datetime(2023, 1, 14, 0, 0),
datetime.datetime(2023, 1, 15, 0, 0), datetime.datetime(2023, 1, 16, 0, 0),
datetime.datetime(2023, 1, 17, 0, 0), datetime.datetime(2023, 1, 18, 0, 0),
datetime.datetime(2023, 1, 19, 0, 0), datetime.datetime(2023, 1, 20, 0, 0),
datetime.datetime(2023, 1, 21, 0, 0), datetime.datetime(2023, 1, 22, 0, 0),
datetime.datetime(2023, 1, 23, 0, 0), datetime.datetime(2023, 1, 24, 0, 0),
datetime.datetime(2023, 1, 25, 0, 0), datetime.datetime(2023, 1, 26, 0, 0),
datetime.datetime(2023, 1, 27, 0, 0), datetime.datetime(2023, 1, 28, 0, 0),
datetime.datetime(2023, 1, 29, 0, 0), datetime.datetime(2023, 1, 30, 0, 0),
datetime.datetime(2023, 1, 31, 0, 0), datetime.datetime(2023, 2, 1, 0, 0),
datetime.datetime(2023, 2, 2, 0, 0), datetime.datetime(2023, 2, 3, 0, 0),
datetime.datetime(2023, 2, 4, 0, 0), datetime.datetime(2023, 2, 5, 0, 0),
datetime.datetime(2023, 2, 6, 0, 0), datetime.datetime(2023, 2, 7, 0, 0),
datetime.datetime(2023, 2, 8, 0, 0), datetime.datetime(2023, 2, 9, 0, 0),
datetime.datetime(2023, 2, 10, 0, 0)]
```

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

In [ ]:

```
from datetime import datetime,timedelta

def date_range(start,end):
    delta=end - start
    days= [start + timedelta(days=i) for i in range(delta.days + 1)]
    return days
start_date=datetime(2023,1,1)
end_date=datetime(2023,2,10)
print(date_range(start_date, end_date))
```

```
[datetime.datetime(2023, 1, 1, 0, 0), datetime.datetime(2023, 1, 2, 0, 0), datetime.datetime(2023, 1, 3, 0, 0), datetime.datetime(2023, 1, 4, 0, 0), da
tetime.datetime(2023, 1, 5, 0, 0), datetime.datetime(2023, 1, 6, 0, 0), datetime.datetime(2023, 1, 7, 0, 0), datetime.datetime(2023, 1, 8, 0, 0), datet
ime.datetime(2023, 1, 9, 0, 0), datetime.datetime(2023, 1, 10, 0, 0), datetime.datetime(2023, 1, 11, 0, 0), datetime.datetime(2023, 1, 12, 0, 0), datet
ime.datetime(2023, 1, 13, 0, 0), datetime.datetime(2023, 1, 14, 0, 0), datetime.datetime(2023, 1, 15, 0, 0), datetime.datetime(2023, 1, 16, 0, 0), date
time.datetime(2023, 1, 17, 0, 0), datetime.datetime(2023, 1, 18, 0, 0), datetime.datetime(2023, 1, 19, 0, 0), datetime.datetime(2023, 1, 20, 0, 0), dat
etime.datetime(2023, 1, 21, 0, 0), datetime.datetime(2023, 1, 22, 0, 0), datetime.datetime(2023, 1, 23, 0, 0), datetime.datetime(2023, 1, 24, 0, 0), da
tetime.datetime(2023, 1, 25, 0, 0), datetime.datetime(2023, 1, 26, 0, 0), datetime.datetime(2023, 1, 27, 0, 0), datetime.datetime(2023, 1, 28, 0, 0), d
atetime.datetime(2023, 1, 29, 0, 0), datetime.datetime(2023, 1, 30, 0, 0), datetime.datetime(2023, 1, 31, 0, 0), datetime.datetime(2023, 2, 1, 0, 0), d
atetime.datetime(2023, 2, 2, 0, 0), datetime.datetime(2023, 2, 3, 0, 0), datetime.datetime(2023, 2, 4, 0, 0), datetime.datetime(2023, 2, 5, 0, 0), date
time.datetime(2023, 2, 6, 0, 0), datetime.datetime(2023, 2, 7, 0, 0), datetime.datetime(2023, 2, 8, 0, 0), datetime.datetime(2023, 2, 9, 0, 0), datetim
e.datetime(2023, 2, 10, 0, 0)]
```

**Question-10:**

10. Create 2D list to DataFrame

Solution:

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

In [ ]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```
In [ ]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df=pd.DataFrame(lists,columns=['Number','FName','Age'])
print(df)
```

```
 Number FName Age
0 1 aaa 22
1 2 bbb 25
2 3 ccc 24
```

In [ ]:

In [ ]: