Assignment -1

Python Programming

Assignment Date	17 September 2022
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Student Roll Number	E1195028
Maximum Marks	2 Marks

Question-1:

1. Split this string

Solution:

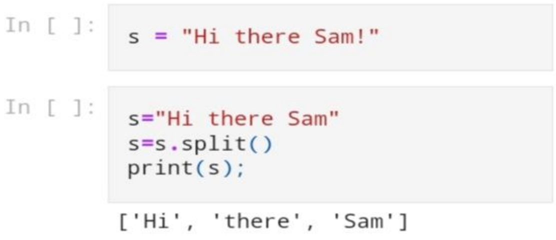
s.split()

s = "Hi there Sam!"

s="Hi there Sam"

s=s.split()

print(s);



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

In [ ]: s="Hi there Sam"
        s=s.split()
        print(s);

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

Question-2:

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

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

Solution :

planet = "Earth"

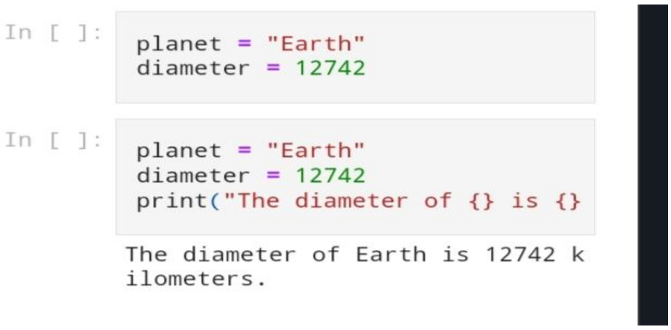
diameter = 12742

planet = "Earth"

diameter = 12742

print("The diameter of {} is {}

The diameter of Earth is 12742 kilometers

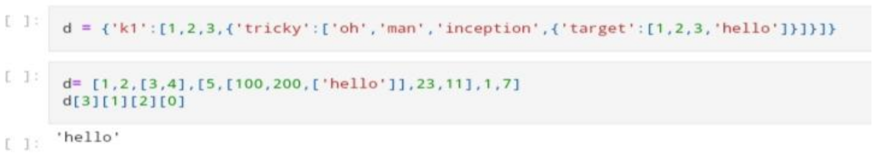


```
In [ ]:
planet = "Earth"
diameter = 12742

In [ ]:
planet = "Earth"
diameter = 12742
print("The diameter of {} is {}

The diameter of Earth is 12742 k
ilometers.
```

Question -3:

In this nest dictionary grab the word "hello"

Solution:
d={'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
d= [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
d[3][1][2][0]



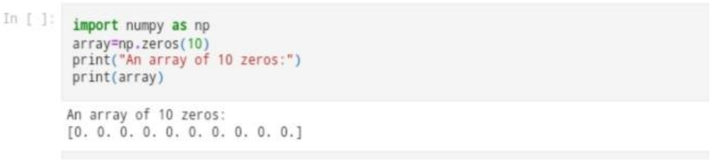
```
[ ]:  d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

[ ]:  d= [1,2,[3,4],[5,[100,200,['hello']],23,11],1,7]
      d[3][1][2][0]

[ ]:  'hello'
```

Question-4.

4.1 Create an array of 10 zeros?
4.2 Create an array of 10 fives?

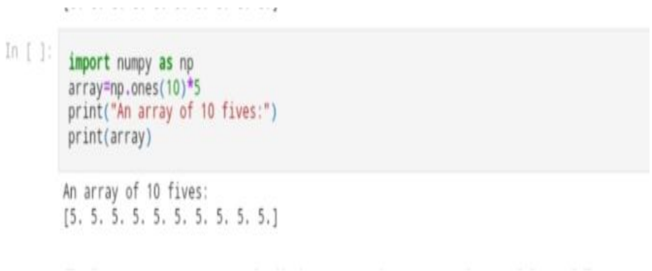
Solution:

4.1.
import numpy as np
array=np.zeros(10)
print("An array of 10 zeros:")
print(array)



```
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.]
```

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



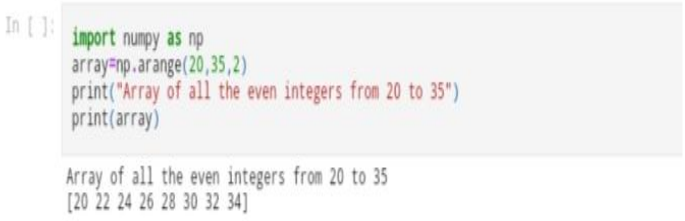
```
import numpy as np
array=np.ones(10)*5
print("An array of 10 fives:")
print(array)
```

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

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

Solution:

```
import numpy as np
array=np.arange(20,35,2)
print("Array of all the even integers from 20 to 35")
print(array)
```



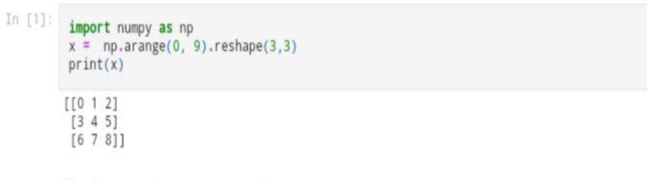
```
import numpy as np
array=np.arange(20,35,2)
print("Array of all the even integers from 20 to 35")
print(array)
```

```
Array of all the even integers from 20 to 35
[20 22 24 26 28 30 32 34]
```

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

Solution:

```
import numpy as np
x =  np.arange(0, 9).reshape(3,3)
print(x)
```



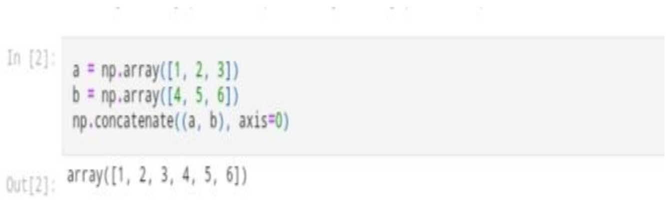
```
import numpy as np
x =  np.arange(0, 9).reshape(3,3)
print(x)
```

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

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

Solution:

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



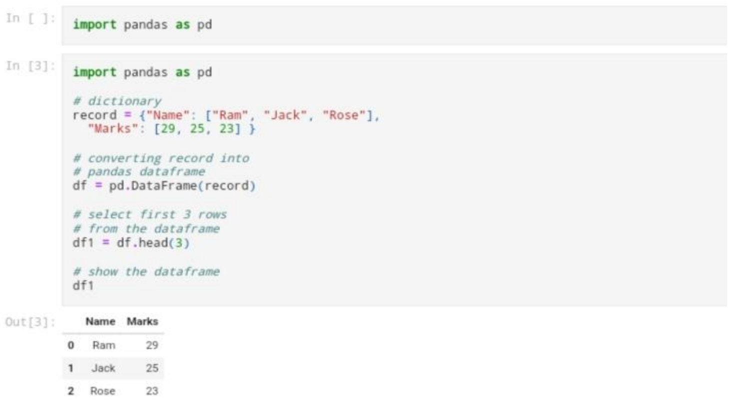
```
In [2]:  a = np.array([1, 2, 3])
         b = np.array([4, 5, 6])
         np.concatenate((a, b), axis=0)

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

Solution:

```
import pandas as pd
import pandas as pd

# dictionary
record = {"Name": ["Ram", "Jack", "Rose"],
  "Marks": [29, 25, 23] }

# converting record into
# pandas dataframe
df = pd.DataFrame(record)

# select first 3 rows
# from the dataframe
df1 = df.head(3)

# show the dataframe
df1
```



```
In [ ]: import pandas as pd
```

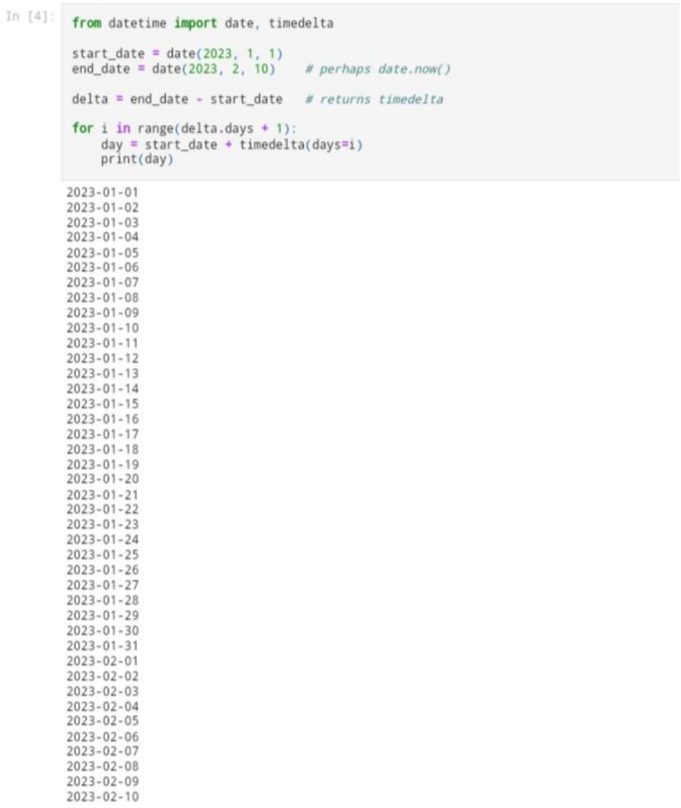
```
In [3]: import pandas as pd

        # dictionary
        record = {"Name": ["Ram", "Jack", "Rose"],
          "Marks": [29, 25, 23] }

        # converting record into
        # pandas dataframe
        df = pd.DataFrame(record)

        # select first 3 rows
        # from the dataframe
        df1 = df.head(3)

        # show the dataframe
        df1
```

```
Out[3]:    Name  Marks
        0  Ram      29
        1  Jack     25
        2  Rose     23
```

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

Solution:

```
from datetime import date, timedelta

start_date = date(2023, 1, 1)
end_date = date(2023, 2, 10)    # perhaps date.now()

delta = end_date - start_date   # returns timedelta

for i in range(delta.days + 1):
    day = start_date + timedelta(days=i)
```



```
In [4]: from datetime import date, timedelta

        start_date = date(2023, 1, 1)
        end_date = date(2023, 2, 10)    # perhaps date.now()

        delta = end_date - start_date   # returns timedelta

        for i in range(delta.days + 1):
            day = start_date + timedelta(days=i)
            print(day)
```

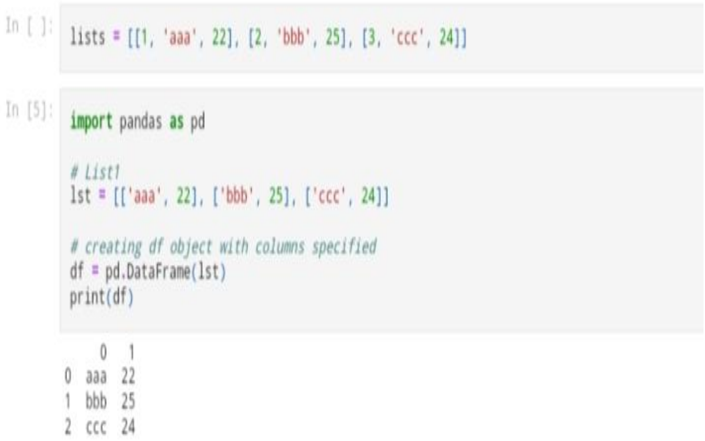
```
2023-01-01
2023-01-02
2023-01-03
2023-01-04
2023-01-05
2023-01-06
2023-01-07
2023-01-08
2023-01-09
2023-01-10
2023-01-11
2023-01-12
2023-01-13
2023-01-14
2023-01-15
2023-01-16
2023-01-17
2023-01-18
2023-01-19
2023-01-20
2023-01-21
2023-01-22
2023-01-23
2023-01-24
2023-01-25
2023-01-26
2023-01-27
2023-01-28
2023-01-29
2023-01-30
2023-01-31
2023-02-01
2023-02-02
2023-02-03
2023-02-04
2023-02-05
2023-02-06
2023-02-07
2023-02-08
2023-02-09
2023-02-10
```

10. Create 2D list to DataFrame

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

Solution:

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

# List1
lst = [['aaa', 22], ['bbb', 25], ['ccc', 24]]

# creating df object with columns specified
df = pd.DataFrame(lst)
print(df)
```



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

```
import pandas as pd

# List1
lst = [['aaa', 22], ['bbb', 25], ['ccc', 24]]

# creating df object with columns specified
df = pd.DataFrame(lst)
print(df)
```

```
     0   1
0  aaa  22
1  bbb  25
2  ccc  24
```