| | |
|---|---|
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# ASSIGNMENT -1

# Basic Python

## 1. Split this string

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

In [ ]:
```
s=s.split(" ")
s
```

Out[ ]:
```
['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 [ ]:
```
d['k1'][3]['tricky'][3]
```

Out[ ]:
```
{'target': [1, 2, 3, 'hello']}
```

# Numpy

In [2]:

```
import numpy as np
```

## 4.1 Create an array of 10 zeros?

## 4.2 Create an array of 10 fives?

In [ ]:
```
np.zeros(10,dtype=int)
```

Out[ ]:
```
array([0, 0, 0, 0, 0, 0, 0, 0, 0, 0])
```

In [ ]:
```
np.ones(10,dtype=int)*5
```

Out[ ]:
```
array([5, 5, 5, 5, 5, 5, 5, 5, 5, 5])
```

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

In [ ]:
```
evenIntegers = np.arange(20,36,2)
evenIntegers
```

Out[ ]:
```
array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

In [ ]:
```
values=np.random.randint(9,size=(3,3))
values
```

Out[ ]:
```
array([[4, 8, 2],
[1, 4, 0],
[8, 7, 0]])
```

## 7. Concatenate a and b

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

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

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

# Pandas

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

In [1]:
```
import pandas as pd
```

In [ ]:
```
s1 = pd.Series(np.random.rand(2))
s2 = pd.Series(np.random.rand(2))
s3 = pd.Series(np.random.rand(2))
df = pd.DataFrame([s1,s2,s3])
df
```

Out[ ]:

| | 0 | 1 |
|---|---|---|
| **0** | 0.238527 | 0.343665 |
| **1** | 0.306049 | 0.645804 |
| **2** | 0.908118 | 0.925606 |

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

In [3]:
```
date=pd.date_range(start='1st Jan,2023',end='10th Feb,2023')
dates = pd.Series(date)
dates
```

Out[3]:
```
0    2023-01-01
1    2023-01-02
2    2023-01-03
3    2023-01-04
4    2023-01-05
5    2023-01-06
6    2023-01-07
7    2023-01-08
8    2023-01-09
9    2023-01-10
10   2023-01-11
11   2023-01-12
12   2023-01-13
13   2023-01-14
14   2023-01-15
15   2023-01-16
16   2023-01-17
17   2023-01-18
18   2023-01-19
19   2023-01-20
20   2023-01-21
```

```
21   2023-01-22
22   2023-01-23
23   2023-01-24
24   2023-01-25
25   2023-01-26
26   2023-01-27
27   2023-01-28
28   2023-01-29
29   2023-01-30
30   2023-01-31
31   2023-02-01
32   2023-02-02
33   2023-02-03
34   2023-02-04
35   2023-02-05
36   2023-02-06
37   2023-02-07
38   2023-02-08
39   2023-02-09
40   2023-02-10
dtype: datetime64[ns]
```

# 10. Create 2D list to DataFrame

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

In [4]:

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

In [ ]:

```
df = pd.DataFrame(lists, columns =['name','number'])
print(df)
```

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