

ASSIGNMENT1

The screenshot shows a Jupyter Notebook titled "IBM Assignment" with a last checkpoint 5 minutes ago. The interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for file operations, running, and code execution. The notebook content is as follows:

Basic Python

1. Split this string

```
In [2]: s = "Hi there Sam!".split()
print(s)
['Hi', 'there', 'Sam!']
```

In []:

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

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

```
In [3]: planet = "Earth"
diameter = 12742
print(f'The diameter of {planet} is {diameter} kilometers.')
The diameter of Earth is 12742 kilometers.
```

In []:

The screenshot shows the same Jupyter Notebook interface, now displaying the third exercise and the beginning of the Numpy section. The notebook content is as follows:

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

```
In [20]:
```

```
-----
NameError                                Traceback (most recent call last)
Cell In [20], line 1
----> 1 print(d['k1'])

NameError: name 'd' is not defined
```

```
In [21]: d = {'k1': [1, 2, 3, {'tricky': ['oh', 'man', 'inception', {'target': [1, 2, 3, 'hello']}]}]}
print(d['k1'])
[1, 2, 3, {'tricky': ['oh', 'man', 'inception', {'target': [1, 2, 3, 'hello']}]}]
```

Numpy

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

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
In [4]: a=0
b=[a for i in range(10)]
print(b)
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
```

```
In [5]: a=5
b=[a for i in range(10)]
print(b)
[5, 5, 5, 5, 5, 5, 5, 5, 5, 5]
```

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

```
In [6]: s=[]
for i in range(20,36):
    if i%2==0:
        s.append(i)
print(s)
[20, 22, 24, 26, 28, 30, 32, 34]
```

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

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

```
In [9]: s=[]
for i in range(0,9):
    s.append(str(i))
    if len(s)==3:
        print(' '.join(s))
        s.clear()
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 [10]: import numpy as np
a=np.array([1,2,3])
b=np.array([4,5,6])
print(a+b)
[5 7 9]
```

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[5 7 9]

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
In [17]: import pandas as pd
data=[1,2,3]
b=pd.DataFrame(data,columns=['data'])
print(b)
```

```
   data
0     1
1     2
2     3
```

```
In [ ]:
```

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

```
In [19]: from datetime import timedelta, date

def daterange(date1, date2):
    for n in range(int((date2 - date1).days)+1):
        yield date1 + timedelta(n)
```

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

```
In [19]: from datetime import timedelta, date

def daterange(date1, date2):
    for n in range(int((date2 - date1).days)+1):
        yield date1 + timedelta(n)

start_dt = date(2023, 1, 1)
end_dt = date(2023, 2, 10)
for dt in daterange(start_dt, end_dt):
    print(dt.strftime("%Y-%m-%d"))
```

```
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
```

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2023-01-10
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]]
```

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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]]
```

```
In [18]: lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]  
a=pd.DataFrame(lists,columns=['no','alpha','digit'])  
print(a)
```

	no	alpha	digit
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24

```
In [ ]:
```

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