

## Assignment 1

Assignment Date	9 September 2022
Student Name	P.Selin Prabavathy
Student Roll Number	962719106031
Maximum Marks	2Marks

### 1.Split this string

Solution:

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

```
x=s.split()
```

```
print(x)
```



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

Solution:

```
planet="Earth";
```

```
diameter=12742;
```

```
print("The diameter of"+planet+"is",diameter,"kilometers");
```

The screenshot shows a Jupyter Notebook with a menu bar (File, Edit, View, Insert, Runtime, Tools, Help) and a toolbar with icons for code, text, search, and a RAM/Disk indicator. The notebook content includes:

- A task instruction: "2. Use .format() to print the following string. Output should be: The diameter of Earth is 12742 kilometers."
- Code cell [3]: 

```
planet = "Earth"
diameter = 12742
```
- Code cell [4]: 

```
planet="Earth";
diameter=12742;
print("The diameter of"+planet+"is",diameter,"kilometers");
```

The output of cell [4] is: `The diameter ofEarthis 12742 kilometers`

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

Solution:

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

The screenshot shows a Jupyter Notebook with a menu bar (File, Edit, View, Insert, Runtime, Tools, Help) and a toolbar with icons for code, text, search, and a RAM/Disk indicator. The notebook content includes:

- A task instruction: "3. In this nest dictionary grab the word "hello"
- Code cell [5]: 

```
d = { 'k1': [1,2,3, { 'tricky': ['oh', 'man', 'inception', { 'target': [1,2,3, 'hello'] } ] } ] }
```
- Code cell [6]: 

```
print(d['k1'][3]["tricky"][3]
['target'][3])
```

The output of cell [6] is: `hello`

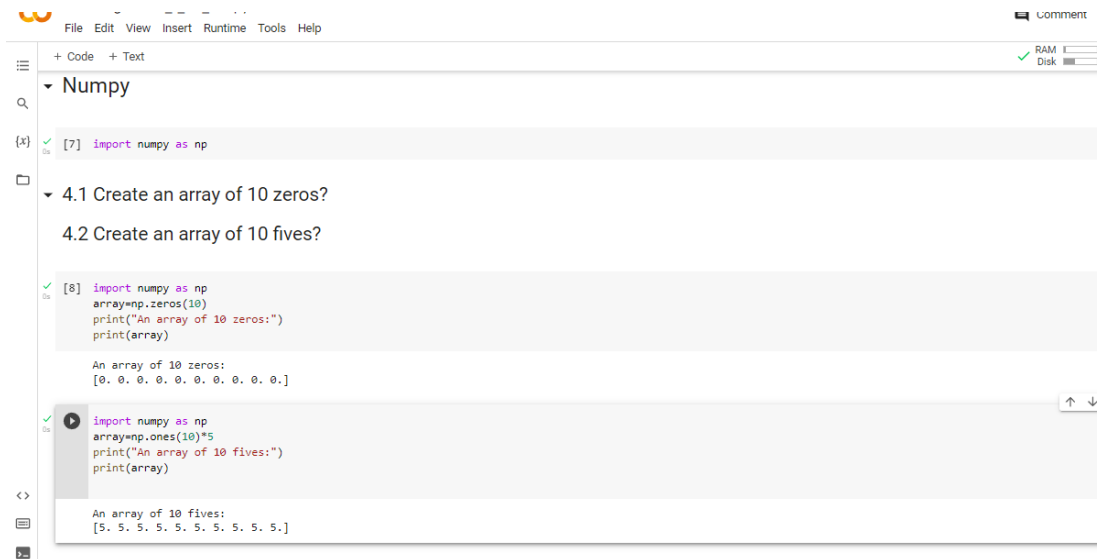
4. Create an array of 10 zeros?

Create an array of 10fives?

Solution:

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

```
print("An array of 10 fives:")
print(array)
```

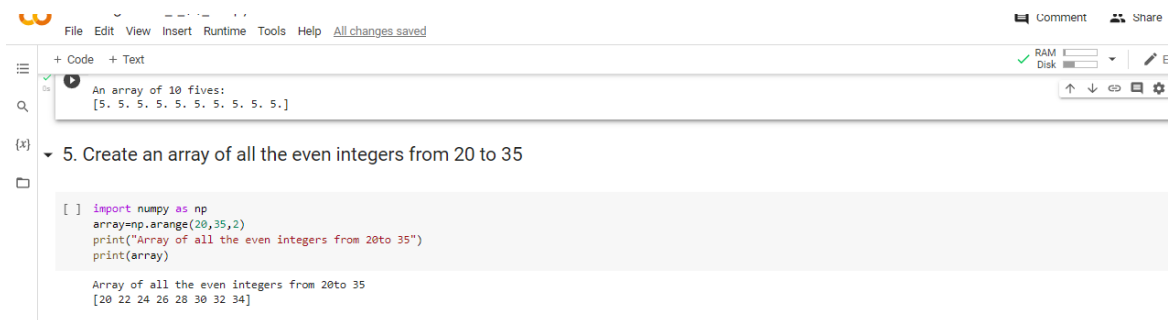


The screenshot shows a Jupyter Notebook interface. The top menu bar includes File, Edit, View, Insert, Runtime, Tools, and Help. On the right, there are buttons for Comment, RAM, and Disk. The left sidebar shows a file explorer with a folder named 'Numpy'. The main area displays two code cells. The first cell, labeled '[7]', contains the code: `import numpy as np`. The second cell, labeled '[8]', contains the code: `import numpy as np`, `array=np.zeros(10)`, `print("An array of 10 zeros:")`, and `print(array)`. Below the code, the output shows: `An array of 10 zeros:` and `[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]`. The third cell, labeled '[9]', contains the code: `import numpy as np`, `array=np.ones(10)*5`, `print("An array of 10 fives:")`, and `print(array)`. Below the code, the output shows: `An array of 10 fives:` and `[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 20to 35")
print(array)
```



The screenshot shows a Jupyter Notebook interface. The top menu bar includes File, Edit, View, Insert, Runtime, Tools, and Help. On the right, there are buttons for Comment, Share, RAM, and Disk. The left sidebar shows a file explorer with a folder named '5. Create an array of all the even integers from 20 to 35'. The main area displays a code cell labeled '[ ]' containing the code: `import numpy as np`, `array=np.arange(20,35,2)`, `print("Array of all the even integers from 20to 35")`, and `print(array)`. Below the code, the output shows: `Array of all the even integers from 20to 35` and `[20 22 24 26 28 30 32 34]`.

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

Solution:

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

```
print(x)
```



The screenshot shows a Jupyter Notebook interface. The top bar includes a menu (File, Edit, View, Insert, Runtime, Tools, Help) and a status bar (All changes saved). The left sidebar has icons for file explorer, search, and variables. The main area displays a code cell with the following code: `array=np.arange(20,35,2)`, `print("Array of all the even integers from 20to 35")`, and `print(array)`. Below the code, the output is shown: "Array of all the even integers from 20to 35" and a 1D array `[20 22 24 26 28 30 32 34]`. A second cell is partially visible, titled "6. Create a 3x3 matrix with values ranging from 0 to 8".

```
+ Code + Text
```

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

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

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

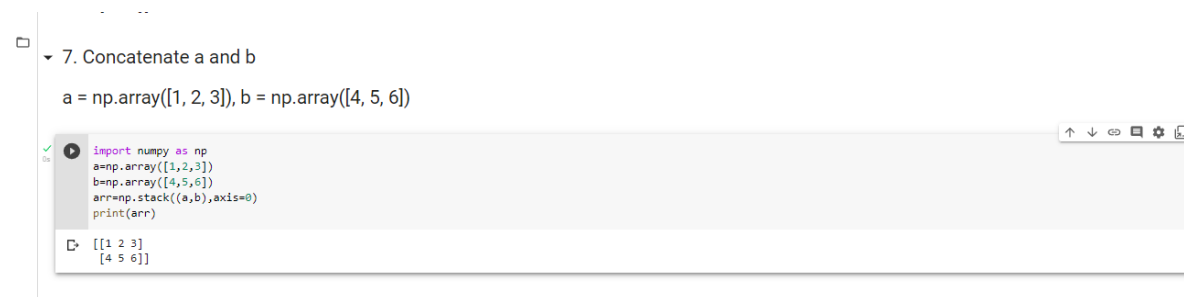
```
[ ] import numpy as np
    x=np.arange(0,9).reshape(3,3)
    print(x)
```

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

## 7.Concatenate a and b

Solution:

```
import numpy as np
a=np.array([1,2,3])
b=np.array([4,5,6])
arr=np.stack((a,b),axis=0)
print(arr)
```



The screenshot shows a Jupyter Notebook interface. The left sidebar has a file explorer icon. The main area displays a code cell titled "7. Concatenate a and b" with the following code: `a = np.array([1, 2, 3])`, `b = np.array([4, 5, 6])`, `import numpy as np`, `a=np.array([1,2,3])`, `b=np.array([4,5,6])`, `arr=np.stack((a,b),axis=0)`, and `print(arr)`. Below the code, the output is shown: a 2x3 array `[[1 2 3] [4 5 6]]`.

7. Concatenate a and b

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

```
import numpy as np
a=np.array([1,2,3])
b=np.array([4,5,6])
arr=np.stack((a,b),axis=0)
print(arr)
```

```
[[1 2 3]
 [4 5 6]]
```

## 8.create a dataframe with 3rows and 2columnns

Solution:

```
import pandas as pd
```

```
data=[['tom',10], ['nick',15], ['juli',14]]
```

```
df=pd.DataFrame(data,columns=['Name','Age'])
df
```



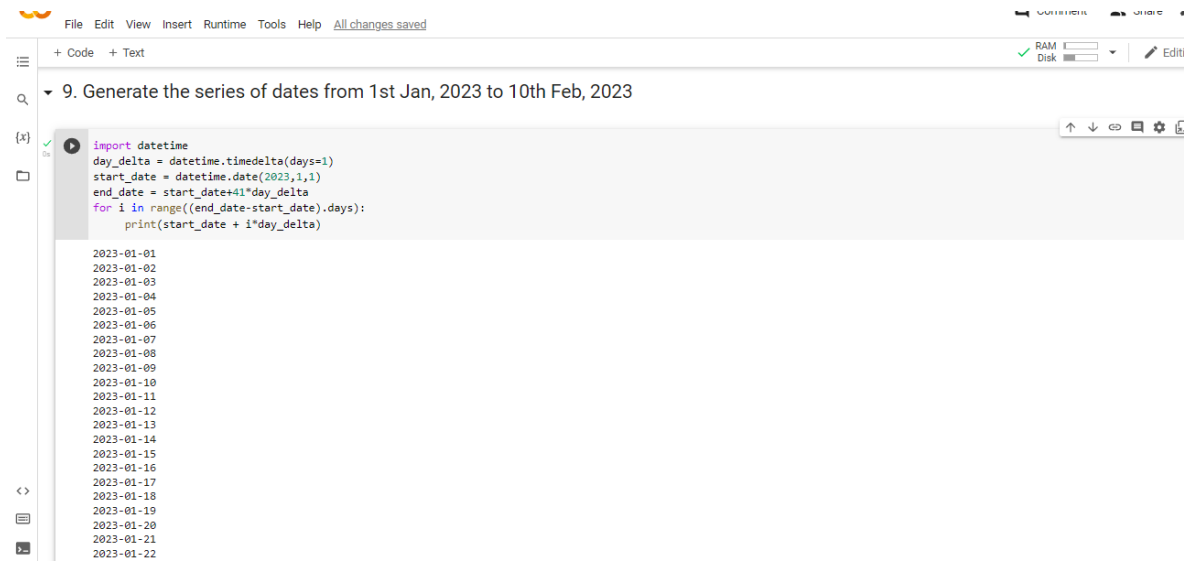
The screenshot shows a Jupyter Notebook interface. The top menu bar includes File, Edit, View, Insert, Runtime, Tools, Help, and Saving... Below the menu, there are tabs for '+ Code' and '+ Text'. The main code area contains two cells. The first cell has the code `[[1 2 3], [4 5 6]]`. The second cell has the code `import pandas as pd` followed by `data=[['tom',10],['nick',15],['juli',14]]` and `df=pd.DataFrame(data,columns=['Name','Age'])`. Below the code, a preview of the DataFrame is shown as a table with columns 'Name' and 'Age'.

	Name	Age
0	tom	10
1	nick	15
2	juli	14

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

Solution:

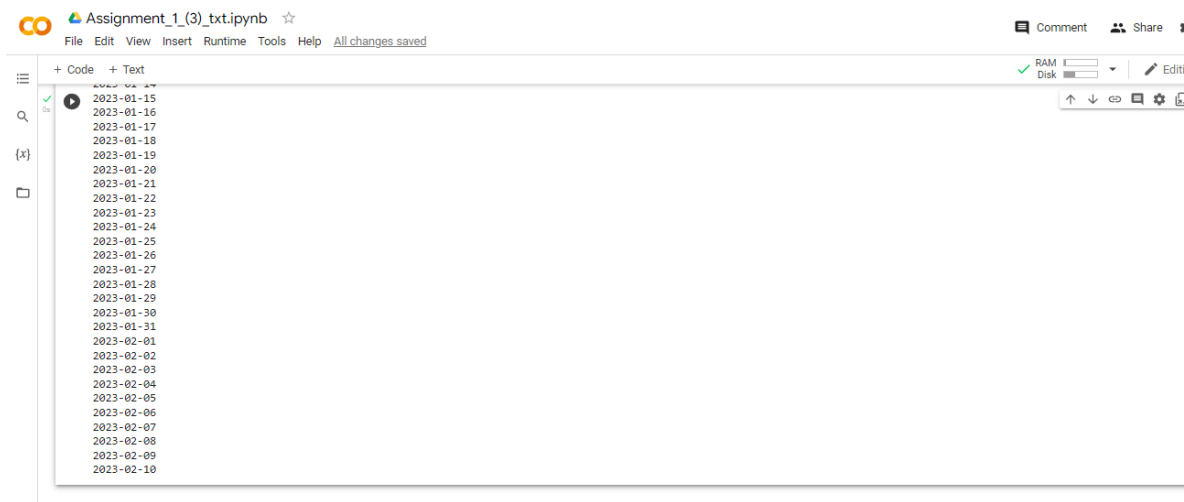
```
import datetime
day_delta = datetime.timedelta(days=1)
start_date = datetime.date(2023,1,1)
end_date = start_date+41*day_delta
for i in range((end_date-start_date).days):
    print(start_date + i*day_delta)
```



The screenshot shows a Jupyter Notebook window with a menu bar (File, Edit, View, Insert, Runtime, Tools, Help) and a status bar indicating "All changes saved". The notebook is titled "9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023". The code cell contains the following Python code:

```
import datetime
day_delta = datetime.timedelta(days=1)
start_date = datetime.date(2023,1,1)
end_date = start_date+41*day_delta
for i in range((end_date-start_date).days):
    print(start_date + i*day_delta)
```

The output of the code is a list of dates from 2023-01-01 to 2023-01-22, printed one per line.



The screenshot shows a Jupyter Notebook window with a menu bar (File, Edit, View, Insert, Runtime, Tools, Help) and a status bar indicating "All changes saved". The notebook is titled "Assignment\_1(3)\_txt.ipynb". The code cell contains the following Python code:

```
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
```

The output of the code is a list of dates from 2023-01-15 to 2023-02-10, printed one per line.

## 10. Create 2D list to DataFrame

Solution:

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

File Edit View Insert Runtime Tools Help

+ Code + Text

2023-02-09  
2023-02-10

10. Create 2D list to DataFrame

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

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

df=pd.DataFrame(lists,columns=['Number','Letter','Number'])  
print(df)

	Number	Letter	Number
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24

+ Code + Text

RAM  
Disk