Assignment 1

Basic Python

1. Split this string

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

[1]:

[2]:
```
s=s.split()
print(s);
```

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

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

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

[3]:
```
planet = "Earth"
diameter = 12742
```

[4]:
```
diameter = 12742
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"

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

[7]:
```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':
 ↪[1,2,3,'hello']}]}]}
print(d['k1'][3]["tricky"][3]['target'][3])
```

```
hello
```

Numpy

[8]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

[9]:
```
arr = np.zeros(10)
print(arr)
```

```
[0.  0.  0.  0.  0.  0.  0.  0.  0.  0.]
```

[10]:
```
arr1=np.ones(10)*5
print(arr1)
```

```
[5.  5.  5.  5.  5.  5.  5.  5.  5.  5.]
```

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

[11]:
```
array=(np.arange(20,36,2))
print(array)
```

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

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

[12]:
```
arr2=np.arange(0,9).reshape((3,3))
print(arr2)
```

```
[[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])

[13]:
```
a=np.array([1,2,3])
b=np.array([4,5,6])
ab=np.concatenate((a,b))
print(ab)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

[14]:
```
import pandas as pd
```

[15]:
```
data={"Domain":['AI','ML','DS'],"Intrest":['Yes','Yes','Yes']}
df=pd.DataFrame(data)
print(df)
```

```
  Domain Intrest
0     AI      Yes
1     ML      Yes
2     DS      Yes
```

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

[16]:
```
pd.date_range("01-01-2023","02-10-2023")
```

[16]:
```
DatetimeIndex(['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'],
              dtype='datetime64[ns]', freq='D')
```

10. Create 2D list to DataFrame

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

[17]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

[18]:
```
df=pd.DataFrame(lists,columns=['Number','Name','ID.NO'])
print(df)
```

```
   Number Name  ID.NO
0       1  aaa     22
1       2  bbb     25
2       3  ccc     24
```