ASSIGNMENT 1 (IBM)

September 19, 2022

1 Basic Python

1.1 1. Split this string

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

[14]:
```
s = "Hi there Sam!"
s.split()
```

[14]:
```
['Hi', 'there', 'Sam!']
```

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

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

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

[4]:
```
print("The diameter of {} is {} kilometers.".format(planet,diameter))
```

```
The diameter of Earth is 12742 kilometers.
```

1.3 3. In this nest dictionary grab the word “hello”

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

[15]:
```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':
 ↪[1,2,3,'hello']}]}]}
d['k1'][3]['tricky'][3]['target'][3]
```

[15]:
```
'hello'
```

2 Numpy

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

2.1 4.1 Create an array of 10 zeros?

2.2 4.2 Create an array of 10 fives?

[9]:
```
import numpy as np
array=np.zeros(10)
print(array)
```

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

[10]:
```
import numpy as np
array=np.ones(10)*5
print(array)
```

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

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

[1]:
```
import numpy as np
array=np.arange(20,35,2)
print(array)
```

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

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

[ ]:
```
import numpy as np
n =  np.arange(2, 11).reshape(3,3)
print(n)
```

2.5 7. Concatenate a and b

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

[11]:
```
import numpy as np

a = np.array([1, 2, 3])

b = np.array([4, 5, 6])

c = np.concatenate([a, b])

print(c)
```

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

3 Pandas

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

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

[13]:
```
import pandas as pd

d = pd.DataFrame()

print(d)
```

```
Empty DataFrame
Columns: []
Index: []
```

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

[1]:
```
import pandas as pd
pd.date_range("01-01-2023","10-02-2023")
```

[1]:
```
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',
               …
               '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
               '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
               '2023-10-01', '2023-10-02'],
              dtype='datetime64[ns]', length=275, freq='D')
```

3.3 10. Create 2D list to DataFrame

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

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

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

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