ADS – Assignment-1

1. Assign your Name to variable name and Age to variable age. Make a Python program that prints your name and age.

Ans:
```
name="Keerthan"
age=20
print("Name: ",name)
print("Age: ",age)
```

2. X="Datascience is used to extract meaningful insights."
   Split the string

Ans:
```
x="Datascience is used to derive meaningful insights"
txt=x.split()
print(txt)
```

3. Make a function that gives multiplication of two numbers

Ans:
```
def mul(a,b):
    m=a*b
    print(m)
a=4
b=5
mul(a,b)
```

4. Create a Dictionary of 5 States with their capitals. also print the keys and values.

Ans:
```
Dic ={"Karnataka":"Bangalore","Telangana":"Hyderabad","Tamil Nadu":"Chennai","Maharastra":"Pune","West Bengal":"Kolkata"}
```

```
print(Dic)
```

5. Create a list of 1000 numbers using range function

Ans:
```
x=list(range(1,1001))
print(x)
```

6. Create an identity matrix of dimension 4 by 4

Ans:
```
import numpy as np
arr=np.array([[[[1,0,0,0],[0,1,0,0],[0,0,1,0],[0,0,0,1]]]])
dimen=arr.ndim
print(arr)
print(dimen)
```

7. Create a 3x3 matrix with values ranging from 1 to 9

Ans:
```
mat=[[j +1+ (3*i) for j in range(3)]for i in range(3)]
print(mat)
```

8. Create 2 similar dimensional array and perform sum on them.

Ans:
```
arr1=[[4,3,2],[2,6,5]]
arr2=[[9,8,6],[2,5,8]]
sm=[[arr1[i][j] + arr2[i][j] for j in range(3)]for i in range(2)]
print(sm)
```

9. Generate the series of dates from 1st Feb, 2023 to 1st March, 2023 (both inclusive)

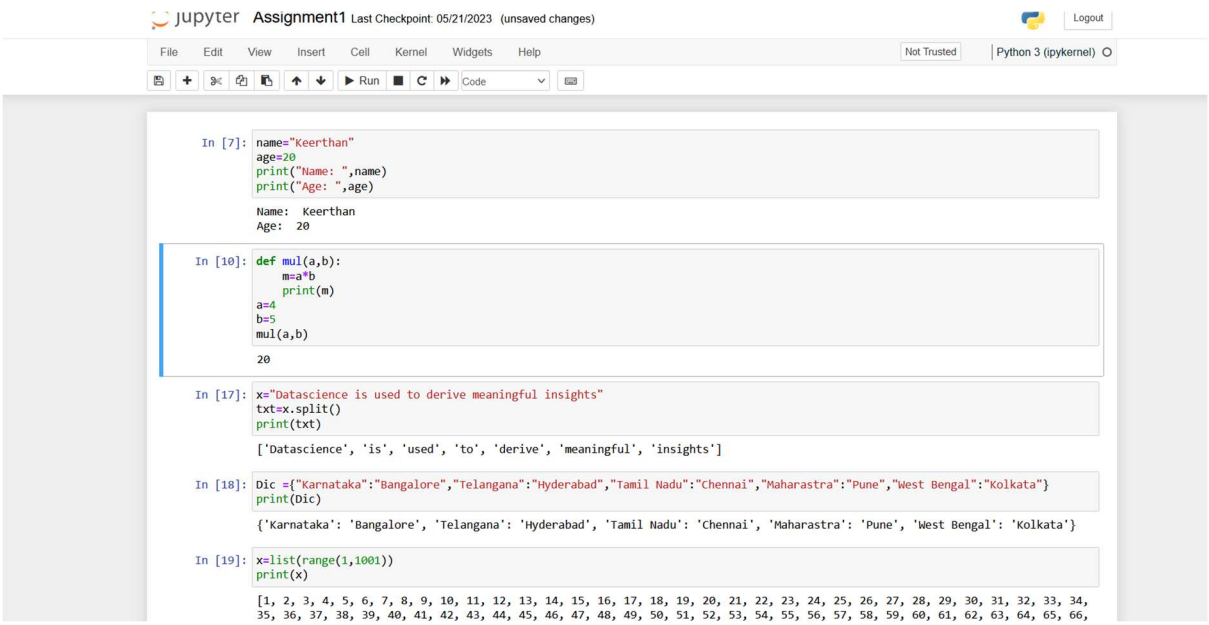
Ans:
```
from datetime import datetime, timedelta
```

```
start=datetime(2023,2,1)
end=datetime(2023,3,1)
dates=[]
 while start<=end:
        dates.append(start.strftime('%Y=%m-%d'))
        start +=timedelta(days=1)

print(dates)
```

10. Given a dictionary, convert it into corresponding dataframe and display it dictionary = {'Brand': ['Maruti', 'Renault', 'Hyndai'], 'Sales' : [250, 200, 240]}

Ans:
```
import pandas as pd
dic={'Brand':['Maruti','renault','Hyundai'],'Sales':[250,200,240]}
df=pd.DataFrame(dic)
print(df)
```



```
1, 992, 993, 994, 995, 996, 997, 998, 999, 1000]
```

In [24]:
```
import numpy as np
arr=np.array([[[[1,0,0,0],[0,1,0,0],[0,0,1,0],[0,0,0,1]]]])
dimen=arr.ndim
print(arr)
print(dimen)
```

```
[[[[1 0 0 0]
   [0 1 0 0]
   [0 0 1 0]
   [0 0 0 1]]]]
4
```

In [2]:
```
mat=[[j +1+ (3*i) for j in range(3)]for i in range(3)]
print(mat)
```

```
[[1, 2, 3], [4, 5, 6], [7, 8, 9]]
```

In [4]:
```
arr1=[[4,3,2],[2,6,5]]
arr2=[[9,8,6],[2,5,8]]

sm=[[arr1[i][j] + arr2[i][j] for j in range(3)]for i in range(2)]
print(sm)
```

```
[[13, 11, 8], [4, 11, 13]]
```

In [5]:
```
import pandas as pd
dic={'Brand':['Maruti','renault','Hyundai'],'Sales':[250,200,240]}
df=pd.DataFrame(dic)
print(df)
```

```
     Brand  Sales
0   Maruti    250
1  renault    200
```


```
[[13, 11, 8], [4, 11, 13]]
```

In [5]:
```
import pandas as pd
dic={'Brand':['Maruti','renault','Hyundai'],'Sales':[250,200,240]}
df=pd.DataFrame(dic)
print(df)
```


```
     Brand  Sales
0   Maruti    250
1  renault    200
2  Hyundai    240
```

In [6]:
```
from datetime import datetime, timedelta

start=datetime(2023,2,1)
end=datetime(2023,3,1)
dates=[]
while start<=end:
    dates.append(start.strftime('%Y=%m-%d'))
    start +=timedelta(days=1)

print(dates)
```

```
['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', '2023=02-11', '2023=02-12', '2023=02-13', '2023=02-14', '2023=02-15', '2023=02-16', '2023=02-17', '2023=02-18', '
2023=02-19', '2023=02-20', '2023=02-21', '2023=02-22', '2023=02-23', '2023=02-24', '2023=02-25', '2023=02-26', '2023=02-27', '2
023=02-28', '2023=03-01']
```