VIT CHENNAI

NAME :- Rahul Kumar

REGISTRATION NO :- 20BEC1186

Smart Bridge Externship Applied Data Science : Assignment 1

Assignment 1

1. Assign your Name to variable name and Age to variable age. Make a Python program that prints your name and age.
2. X="Datascience is used to extract meaningful insights."
   Split the string
3. Make a function that gives multiplication of two numbers
4. Create a Dictionary of 5 States with their capitals. also print the keys and values.
5. Create a list of 1000 numbers using range function.
6. Create an identity matrix of dimension 4 by 4
7. Create a 3x3 matrix with values ranging from 1 to 9
8. Create 2 similar dimensional array and perform sum on them.
9. Generate the series of dates from 1st Feb, 2023 to 1st March, 2023 (both inclusive)
10. Given a dictionary, convert it into corresponding dataframe and display it
    dictionary = {'Brand': ['Maruti', 'Renault', 'Hyndai'], 'Sales' : [250, 200, 240]}

Assignment week - 1 of Applied Data Science

Submitted by - Rahul Kumar , Registration number - 20BEC1186

Mail ID - rahulkumar2020a@vitstudent.ac.in

Question 1:

In [1]:
```
def disp(name , age):
    print("My Name is :", name)
    print("My Age is :", age)
```

In [2]:
```
name = input()
age = int(input())
```

```
Rahul Kumar
23
```

In [3]:
```
disp(name ,age)
```

```
My Name is : Rahul Kumar
My Age is : 23
```

Question 2:

In [4]:
```
x = "Datascience is used to extract meaningful insights."
li = []
li = x.split(" ")
li
```

Out[4]:
```
['Datascience', 'is', 'used', 'to', 'extract', 'meaningful', 'insights.']
```

Question 3:

In [5]:
```
def multi(a,b):
    print(a*b)

n = int(input())
m = int(input())
multi(n,m)
```

```
23
89
2047
```

Question 4:

In [15]:
```
st_cp = {'chennai':'Tamil Nadu', 'Lucknow':'Uttar Pradesh', 'Mumbai': 'Maharashtra','Jaipur':'Rajasthan', 'patna':'Bihar'}
for i in st_cp:
    print("The Capital of State (value):",st_cp[i] +" is (key) :" ,i )
```

```
The Capital of State (value): Tamil Nadu is (key) : chennai
The Capital of State (value): Uttar Pradesh is (key) : Lucknow
The Capital of State (value): Maharashtra is (key) : Mumbai
The Capital of State (value): Rajasthan is (key) : Jaipur
The Capital of State (value): Bihar is (key) : patna
```

Question 5:

In [23]:
```
range_1 = range(2, 2002, 2)
list_1 = list(range_1)
print(list_1)
print("\n\n",len(list_1))
```

```
[2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 6
6, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122,
124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 17
4, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224,
226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 27
6, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326,
328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 37
8, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428,
430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 48
0, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530,
532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 58
2, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632,
634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 68
4, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734,
736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 78
6, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836,
838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 88
```

```
4, 1456, 1458, 1460, 1462, 1464, 1466, 1468, 1470, 1472, 1474, 1476, 1478, 1480, 1482, 1484, 1486, 1488, 1490, 1492, 1494, 149
6, 1498, 1500, 1502, 1504, 1506, 1508, 1510, 1512, 1514, 1516, 1518, 1520, 1522, 1524, 1526, 1528, 1530, 1532, 1534, 1536, 153
8, 1540, 1542, 1544, 1546, 1548, 1550, 1552, 1554, 1556, 1558, 1560, 1562, 1564, 1566, 1568, 1570, 1572, 1574, 1576, 1578, 158
0, 1582, 1584, 1586, 1588, 1590, 1592, 1594, 1596, 1598, 1600, 1602, 1604, 1606, 1608, 1610, 1612, 1614, 1616, 1618, 1620, 162
2, 1624, 1626, 1628, 1630, 1632, 1634, 1636, 1638, 1640, 1642, 1644, 1646, 1648, 1650, 1652, 1654, 1656, 1658, 1660, 1662, 166
4, 1666, 1668, 1670, 1672, 1674, 1676, 1678, 1680, 1682, 1684, 1686, 1688, 1690, 1692, 1694, 1696, 1698, 1700, 1702, 1704, 170
6, 1708, 1710, 1712, 1714, 1716, 1718, 1720, 1722, 1724, 1726, 1728, 1730, 1732, 1734, 1736, 1738, 1740, 1742, 1744, 1746, 174
8, 1750, 1752, 1754, 1756, 1758, 1760, 1762, 1764, 1766, 1768, 1770, 1772, 1774, 1776, 1778, 1780, 1782, 1784, 1786, 1788, 179
0, 1792, 1794, 1796, 1798, 1800, 1802, 1804, 1806, 1808, 1810, 1812, 1814, 1816, 1818, 1820, 1822, 1824, 1826, 1828, 1830, 183
2, 1834, 1836, 1838, 1840, 1842, 1844, 1846, 1848, 1850, 1852, 1854, 1856, 1858, 1860, 1862, 1864, 1866, 1868, 1870, 1872, 187
4, 1876, 1878, 1880, 1882, 1884, 1886, 1888, 1890, 1892, 1894, 1896, 1898, 1900, 1902, 1904, 1906, 1908, 1910, 1912, 1914, 191
6, 1918, 1920, 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938, 1940, 1942, 1944, 1946, 1948, 1950, 1952, 1954, 1956, 195
8, 1960, 1962, 1964, 1966, 1968, 1970, 1972, 1974, 1976, 1978, 1980, 1982, 1984, 1986, 1988, 1990, 1992, 1994, 1996, 1998, 200
0]
```

```
1000
```

Question 6:

In [33]:
```
import numpy as np
arr = np.zeros((4,4))
arr
```

Out[33]:
```
array([[0., 0., 0., 0.],
       [0., 0., 0., 0.],
       [0., 0., 0., 0.],
       [0., 0., 0., 0.]])
```

In [34]:
```
arr.ndim
```

Out[34]:
```
2
```

In [36]:
```
for i in range(len(arr)):
    for j in range(len(arr[i])):
        if(j==i):
            arr[i][j] = 1
print(arr)
```

```
[[1. 0. 0. 0.]
 [0. 1. 0. 0.]
 [0. 0. 1. 0.]
 [0. 0. 0. 1.]]
```

Question 7:

In [42]:
```
import numpy as np
matrix_arr = np.arange(1,10).reshape(3,3)
```

In [43]:
```
print(matrix_arr)
```

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

Question 8:

In [46]:
```
import numpy as np
a = np.arange(1,10).reshape(3,3)
b = np.arange(11,20).reshape(3,3)
print("Matrix a = \n",a)
print("\n Matrix b = \n",b)
```

```
Matrix a =
 [[1 2 3]
 [4 5 6]
 [7 8 9]]

 Matrix b =
 [[11 12 13]
 [14 15 16]
 [17 18 19]]
```

Question 9:

In [58]:
```
from datetime import date, timedelta

sdate = date(2023,2,1)   # start date
edate = date(2023,3,2)   # end date
```

In [63]:
```
import pandas as pd
pd.date_range(sdate,edate-timedelta(days=1),freq='d')
```

Out[63]:
```
DatetimeIndex(['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', '2023-02-28',
               '2023-03-01'],
              dtype='datetime64[ns]', freq='D')
```

Question 10:

In [60]:
```
import pandas as pd
dic = {'Brand': ['Maruti', 'Renault', 'Hyndai'], 'Sales' : [250, 200, 240]}
data = pd.DataFrame(dic)
data
```

Out[60]:

	Brand	Sales
0	Maruti	250
1	Renault	200
2	Hyndai	240

In [62]:
```
data.iloc[: , :]
```

Out[62]:

	Brand	Sales
0	Maruti	250
1	Renault	200
2	Hyndai	240