

1. Write a Python Program to Check if a Number is Positive, Negative or Zero?

Ans:

```
In [5]: 1 x = int(input('enter a number: '))
2 def check(x):
3     if x == 0:
4         print('The number is zero')
5     elif x > 0:
6         print('The number is positive')
7     else:
8         print('The number is negative')
9     check(x)

enter a number: -78
The number is negative
```

2. Write a Python Program to Check if a Number is Odd or Even?

Ans:

```
In [2]: 1 x = int(input('enter a number: '))
2 def oddoreven(x):
3     if x%2 == 0:
4         print('The number is even')
5     else:
6         print('The number is odd')
7     oddoreven(x)

enter a number: 45
The number is odd
```

3. Write a Python Program to Check Leap Year?

Ans:

```
In [9]: 1 x = int(input('Enter a year: '))
2 def leap_year(x):
3     if x%4 == 0:
4         print('It is a leap year!')
5     elif ((x%100 == 0) and (x%400 == 0)):
6         print('It is a leap year!!')
7     else:
8         print('It is not a leap year')
9     leap_year(x)

Enter a year: 2000
It is a leap year!
```

4. Write a Python Program to Check Prime Number?

Ans:

```
In [35]: 1 x = int(input('Enter a number: '))
2 def prime_num(x):
3     if x>1:
4         for i in range(2,x):
5             if x%i == 0:
6                 print(x, ' is not a prime number')
7                 break
8             else:
9                 print(x, ' is a prime number')
10    else:
11        print(x, ' is not a prime number')
12    prime_num(x)

Enter a number: 17
17 is a prime number
```

5. Write a Python Program to Print all Prime Numbers in an Interval of 1-10000?

Ans:

In [2]:

```
1 prime = []
2 def prime_num():
3     for x in range(1,10000):
4         flag = False
5         for y in range(2,x):
6             if x%y == 0:
7                 flag = True
8                 break
9         if (not flag):
10            prime.append(x)
11 prime_num()
12 print(prime)
```

```
[1, 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109, 113,
127, 131, 137, 139, 149, 151, 157, 163, 167, 173, 179, 181, 191, 193, 197, 199, 211, 223, 227, 229, 233, 239, 241, 251, 257,
263, 269, 271, 277, 281, 283, 293, 307, 311, 313, 317, 331, 337, 347, 349, 353, 359, 367, 373, 379, 383, 389, 397, 401, 409,
419, 421, 431, 433, 439, 443, 449, 457, 461, 463, 467, 479, 487, 491, 499, 503, 509, 521, 523, 541, 547, 557, 563, 569, 571,
577, 587, 593, 599, 601, 607, 613, 617, 619, 631, 641, 643, 647, 653, 659, 661, 673, 677, 683, 691, 701, 709, 719, 727, 733,
739, 743, 751, 757, 761, 769, 773, 787, 797, 809, 811, 821, 823, 827, 829, 839, 853, 857, 859, 863, 877, 881, 883, 887, 907,
911, 919, 929, 937, 941, 947, 953, 967, 971, 977, 983, 991, 997, 1009, 1013, 1019, 1021, 1031, 1033, 1039, 1049, 1051, 1061,
1063, 1069, 1087, 1091, 1093, 1097, 1103, 1109, 1117, 1123, 1129, 1151, 1153, 1163, 1171, 1181, 1187, 1193, 1201, 1213, 1217,
1223, 1229, 1231, 1237, 1249, 1259, 1277, 1279, 1283, 1289, 1291, 1297, 1301, 1303, 1307, 1319, 1321, 1327, 1361, 1367, 1373,
1381, 1399, 1409, 1423, 1427, 1429, 1433, 1439, 1447, 1451, 1453, 1459, 1471, 1481, 1483, 1487, 1489, 1493, 1499, 1511, 1523,
1531, 1543, 1549, 1553, 1559, 1567, 1571, 1579, 1583, 1597, 1601, 1607, 1609, 1613, 1619, 1621, 1627, 1637, 1657, 1663, 1667,
1669, 1693, 1697, 1699, 1709, 1721, 1723, 1733, 1741, 1747, 1753, 1759, 1777, 1783, 1787, 1789, 1801, 1811, 1823, 1831, 1847,
1861, 1867, 1871, 1873, 1877, 1879, 1889, 1901, 1907, 1913, 1931, 1933, 1949, 1951, 1973, 1979, 1987, 1993, 1997, 1999, 2003,
2011, 2017, 2027, 2029, 2039, 2053, 2063, 2069, 2081, 2083, 2087, 2089, 2099, 2111, 2113, 2129, 2131, 2137, 2141, 2143, 2153,
2161, 2179, 2203, 2207, 2213, 2221, 2237, 2239, 2243, 2251, 2267, 2269, 2273, 2281, 2287, 2293, 2297, 2309, 2311, 2333, 2339,
2341, 2347, 2351, 2357, 2371, 2377, 2381, 2383, 2389, 2393, 2399, 2411, 2417, 2423, 2437, 2441, 2447, 2459, 2467, 2473, 2477,
2501, 2521, 2531, 2539, 2543, 2549, 2551, 2557, 2579, 2591, 2593, 2609, 2617, 2621, 2633, 2647, 2657, 2659, 2663, 2671, 2677,
2683, 2687, 2689, 2693, 2699, 2707, 2711, 2713, 2719, 2729, 2731, 2741, 2749, 2753, 2767, 2777, 2789, 2791, 2797, 2801, 2803,
2819, 2833, 2837, 2843, 2851, 2857, 2861, 2879, 2887, 2897, 2903, 2909, 2917, 2927, 2939, 2953, 2957, 2963, 2969, 2971, 2999,
```