Write a Python program that checks whether a given number is prime or not. A prime number is a natural number greater than 1 that has no positive divisors other than 1 and itself.

In [1]:
```
def is_prime(num):
    if num<1:
        return false
    for i in range(2,num):
        if num%i==0:
            return False
        return True

num=eval(input("Enter the number"))
if is_prime(num):
    print("Number is prime")
else:
    print("Number is not prime")
```

```
Enter the number29
Number is prime
```

Exercise 2: Product of Random Numbers Develop a Python program that generates two random numbers and asks the user to enter the product of these numbers. The program should then check if the user's answer is correct and display an appropriate message.

In [2]:
```
import random

num1=random.randint(1,10)
num2=random.randint(1,10)

print(f"Multiply {num1} and {num2}")

user_answer=int(input("Enter your product of numbers: "))

if user_answer==num1*num2:
    print("User answer is correct")
else:
    print("User answer is wrong")
```

```
Multiply 4 and 3
Enter your product of numbers: 21
User answer is wrong
```

Exercise 3: Squares of Even/Odd Numbers Create a Python script that prints the squares of all even or odd numbers within the range of 100 to 200. Choose either even or odd numbers and document your choice in the code.

In [3]:
```
import random
for i in range(100,200):
    if i%2==0:
        print(f"the square of {i} is:{i*i}")
```

```
the square of 100 is:10000
the square of 102 is:10404
the square of 104 is:10816
the square of 106 is:11236
the square of 108 is:11664
the square of 110 is:12100
the square of 112 is:12544
the square of 114 is:12996
the square of 116 is:13456
the square of 118 is:13924
the square of 120 is:14400
the square of 122 is:14884
the square of 124 is:15376
the square of 126 is:15876
the square of 128 is:16384
the square of 130 is:16900
the square of 132 is:17424
the square of 134 is:17956
the square of 136 is:18496
the square of 138 is:19044
the square of 140 is:19600
the square of 142 is:20164
the square of 144 is:20736
the square of 146 is:21316
the square of 148 is:21904
the square of 150 is:22500
the square of 152 is:23104
the square of 154 is:23716
the square of 156 is:24336
the square of 158 is:24964
the square of 160 is:25600
the square of 162 is:26244
the square of 164 is:26896
the square of 166 is:27556
the square of 168 is:28224
the square of 170 is:28900
the square of 172 is:29584
the square of 174 is:30276
the square of 176 is:30976
the square of 178 is:31684
the square of 180 is:32400
the square of 182 is:33124
the square of 184 is:33856
the square of 186 is:34596
the square of 188 is:35344
the square of 190 is:36100
the square of 192 is:36864
the square of 194 is:37636
the square of 196 is:38416
the square of 198 is:39204
```

Exercise 4: Word counter write a program to count the number of words in a given text. example: input_text = "This is a sample text. This text will be used to demonstrate the word counter."

In [4]:
```
str1="This is a sample text. This text will be used to demonstrate the word
l1=str1.split()
l2=[]
for i in l1:
    if i not in l2:
        print(i,l1.count(i))
        l2.append(i)
```

```
This 2
is 1
a 1
sample 1
text. 1
text 1
will 1
be 1
used 1
to 1
demonstrate 1
the 1
word 1
counter. 1
```

In [5]:
```
def is_Palindrome(str):
    for i in range(0, int(len(str)/2)):
        if str[i] != str[len(str)-i-1]:
            return False
    return True

str1 = "racecar"
ans = is_Palindrome(str1)
is_Palindrome(str1)
```

Out[5]:
```
True
```

In [ ]:
```

```