In [3]:

```python
n = int(input())
f_count=0
for i in range(1,n+1):
    if(n%i==0):
        f_count+=1
if(f_count==2):
    print("Prime Number")
else:
    print("Not a Prime Number")
```

```
9
Not a Prime Number
```

In [10]:

```python
# Perfect Number
# 6 = 1 2 3 = 1+2+3=6
n1 = int(input())
f_sum=0
for j in range(1,n1):
    if(n1%j==0):
        f_sum+=j
print("Factors sum= ",f_sum)
if(f_sum==n1):
    print("Perfect Number")
else:
    print("Not A Perfect Number")
```

...

In [17]:

```python
s=int(input())
e=int(input())
e_s=e_c=0
print("Even Numbers are : ")
for k in range(s,e+1):
    if(k%2==0):
        print(k,end=' ')
        e_s=e_s+k
        e_c=e_c+1
print("\nEven Numbers Sum= ",e_s)
print("Even Numbers Count= ",e_c)

```

...

while loop syntax

initialization while(condition): statements updation(increment/decrement)

In [19]:

```
# 1 to 10 numbers
i=1
while(i<=10):
    print(i,end=' ')
    i=i+2
```

```
1 3 5 7 9
```

In [24]:

```
# 10 to 1 numbers
i=10
while(i>=1):
    print(i,end= ' ')
    i=i-3
```

```
10 7 4 1
```

In [2]:

```
# i/p: 328
# o/p: 823
num1 = int(input())
rev=0
while(num1>0):  # 34>0 3>0
    r=num1%10  # 345%10=5 34%10=4 3%10=3
    rev=rev*10+r  # 0*10+5=5  5*10+4=54 54*10+3=543
    num1=num1//10  # 345//10=34 34//10=3 3//10=0
print("Reverse = ",rev)
```

...

In [3]:

```
# i/p: 121
# o/p: Palindrom
num1 = int(input())
temp=num1
rev=0
while(num1>0):
    r=num1%10
    rev=rev*10+r
    num1=num1//10
if(temp==rev):
    print("palindrom")
else:
    print("not a palindrom")
```

```
121
palindrom
```

In [4]:

```
# with arguments with return value
a,b=int(input()),int(input())
def add1(a,b):
    return a+b
add1(a,b)
```

...

In [5]:

```
# with arguments without return value
a,b=int(input()),int(input())
def add2(a,b):
    print(a+b)
add2(a,b)
```

...

In [6]:

```
# without arguments with return value
v,m=2,5
def add3():
    return v+m
add3()
```

Out[6]:

```
7
```

In [7]:

```
def even_odd(n):
    if(n%2==0):
        print("even")
    else:
        print("Odd")
n=int(input())
even_odd(n)
```

...

In [11]:

```
def prime(num):
    f_c=0
    for i in range(1,num+1):
        if(num%i==0):
            f_c+=1
    if(f_c==2):
        return True
    else:
        return False
num=int(input())
prime(num)
```

```
5
```

Out[11]:

```
True
```

In [12]:

```
s1,e1=int(input()),int(input())
def prime_range(s1,e1):
    for j in range(s1,e1+1):
        if(prime(j)==True):
            print(j,end=' ')
prime_range(s1,e1)
```

```
1
100
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
```

In [14]:

```
def perfect(s):
    f_sum=0
    for i in range(1,s):
        if(s%i==0):
            f_sum+=i
    if(f_sum==s):
        return True
    else:
        return False
s=int(input())
perfect(s)
```

```
6
```

Out[14]:

```
True
```

In [17]:

```
def perfect_range(s1,e1):
    for j in range(s1,e1+1):
        if(perfect(j)==True):
            print(j,end=' ')
s1,e1=int(input()),int(input())
perfect_range(s1,e1)
```

```
1
1000
6 28 496
```

String

```
- Collection of characters
```

In [18]:

```
a = "welcome"
print(a)
```

```
welcome
```

In [19]:

```
a1 = input()
a1
```

```
welcome
```

Out[19]:

```
'welcome'
```

In [27]:

```
print(len(a1))
print(type(a1))
print(min(a1))
print(max(a1))
print(sorted(a1))
# print(sum(a1))
```

```
7
<class 'str'>
c
w
['c', 'e', 'e', 'l', 'm', 'o', 'w']
```

In [29]:

```
a1
```

Out[29]:

```
'welcome'
```

In [30]:

```
# wel
print(a1[0:3])
```

```
wel
```

In [32]:

```
# lco
print(a1[2:5])
```

```
lco
```

In [37]:

```
print(a1[3:])
print(a1[0::2])
print(a1[0::3])
print(a1[::-1])
```

...

In [38]:

```
print(dir(str),end=' ')
```

```
['__add__', '__class__', '__contains__', '__delattr__', '__dir__', '__doc__',
'__eq__', '__format__', '__ge__', '__getattribute__', '__getitem__', '__getnewa
rgs__', '__gt__', '__hash__', '__init__', '__init_subclass__', '__iter__', '__l
e__', '__len__', '__lt__', '__mod__', '__mul__', '__ne__', '__new__', '__reduce
__', '__reduce_ex__', '__repr__', '__rmod__', '__rmul__', '__setattr__', '__siz
eof__', '__str__', '__subclasshook__', 'capitalize', 'casefold', 'center', 'cou
nt', 'encode', 'endswith', 'expandtabs', 'find', 'format', 'format_map', 'inde
x', 'isalnum', 'isalpha', 'isascii', 'isdecimal', 'isdigit', 'isidentifier', 'i
slower', 'isnumeric', 'isprintable', 'isspace', 'istitle', 'isupper', 'join',
'ljust', 'lower', 'lstrip', 'maketrans', 'partition', 'removeprefix', 'removesu
ffix', 'replace', 'rfind', 'rindex', 'rjust', 'rpartition', 'rsplit', 'rstrip',
'split', 'splitlines', 'startswith', 'strip', 'swapcase', 'title', 'translate',
'upper', 'zfill']
```

In [40]:

```
# Capitalize()
d = "welcome to python programming"
d.capitalize()
```

Out[40]:

```
'Welcome to python programming'
```

In [42]:

```
# count()
d.count("o")
```

Out[42]:

```
4
```

In [44]:

```
# upper(),lower()
k1="PYTHON"
print(k1.lower())
k2="python"
print(k2.upper())
```

```
python
PYTHON
```

In [46]:

```
# index()
d1 = "python programming"
print(d1.index('o'))
print(d1.rindex('o'))
```

...

In [49]:

```
# find()
print(d1.find("o"))
print(d1.find("z"))
print(d1.rfind("o"))
```

...

In [51]:

```
# isupper(),islower()
k = "PYTHON"
k1="welcomeJDHFhd"
print(k.isupper())
print(k1.islower())
```

...

In [52]:

```
h = "ENGlish"
h.swapcase()
```

Out[52]:

```
'engLISH'
```

In [13]:

```python
# isalpha(),isalnum(),isdigit(),isspace()
b = "jupyter"
print(b.isalpha())
b11 = "34jjk8758"
print(b11.isalnum())
print(b11.isdigit())
n = " "
print(n.isspace())
```

...

In [33]:

```python
# startswith(),endswith()
f,l = "hi hello gd evng","apssdc"
print(f.startswith("hi"))
print(f.startswith("g"))
print(l.endswith("c"))
```

...

In [34]:

```python
# replace()
v1 = "day"
v1.replace("d","S")
```

Out[34]:

```
'Say'
```

In [14]:

```python
# title()
m = "good afternoon"
print(m.title())
print(m.istitle())
```

...

In [21]:

```python
# split()
v = "this is srk college located at vijayawada"
print(v.split())
```

...

In [45]:

```python
g = "py@t h@on"
print(g.split())
print(g.split("@"))
```

...

In [27]:

```python
# join()
print("#".join(g))
print("&".join(g))
```

```
p#y#@#t#h#@#o#n
p&y&@&t&h&@&o&n
```

In [42]:

```
# strip(),lstrip(),rstrip()
h1,h2,h3= "    lenovo     ","     hiii","hello   "
h1.strip()
```

Out[42]:

```
'lenovo'
```

In [40]:

```
h2.lstrip()
```

Out[40]:

```
'hiii'
```

In [41]:

```
h3.rstrip()
```

...

In [43]:

```
# center
fg = "vanitha"
fg.center(20)
```

...

In [44]:

```
# zfill()
fg.zfill(20)
```

...

In [53]:

```
# i/p: ApsSdC@123
# o/p: ASC
word="ApsSdC@123"
for i in word:
    if(i.isupper()):
        print(i,end='')
```

```
ASC
```

In [51]:

```
#### string iteration iterable
# var:value
#iterable contains more than value
student="siva sankar" # 11 chars
for ch in student:
    print(ch)
```

...

In [50]:

```
# index: to represent the values/chars present in str
for ix in range(len(student)):
    print(student[ix],end=" ")
```

```
s i v a   s a n k a r
```

In [ ]:

```
# i/p:  APssDC@3I4&)()
# O/P:  Uppercase Letters are : APDCI
        Lowercase Letters are : ss
        Digits are : 34
        Special Characters are : @&)()
```

In [58]:

```
w = input()
up=lw=dig=sp=""
for k in w:
    if(k.isdigit()):
        dig=dig+k
    elif(k.isupper()):
        up=up+k
    elif(k.islower()):
        lw=lw+k
    else:
        sp+=k
print("Uppercase Letters are : ",up)
print("\nLowercase Letters are : ",lw)
print("\nDigits are : ",dig)
print("\nSpecial Characters are : ",sp)
```

```
SDMFjhrfjw^#%#^%#^87342567834
Uppercase Letters are :  SDMF

Lowercase Letters are :  jhrfjw

Digits are :  87342567834

Special Characters are :  ^#%#^%#^
```

In [ ]:

```

```

In [ ]:

```

```