In [ ]:

```
# i/p: 4
# o/p: even
        10 > ---> sqaure
        10 < ---> cube

# i/p:  7
# o/p:  odd
```

In [3]:

```
n = int(input())
if(n%2==0):
    print("Even")
    if(n>10):
        print(n**2)
    else:
        print(n**3)
else:
    print("Odd")
```

```
3
Odd
```

Loops

- for loop
    - for loop is used when we know the number of iterations
- while loop
    - while loop is used when we don't know the number of iterations

for loop syntax

for value in range(start,end,stepcount): statements

In [4]:

```
# printing numbers from 1 to 10
for i in range(1,10,1):
    print(i,end=' ')
```

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

In [5]:

```
for i in range(1,10):
    print(i,end=' ')
```

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

In [6]:

```python
for j in range(10):
    print(j,end=' ')
```

0 1 2 3 4 5 6 7 8 9

In [9]:

```python
# 2 4 6 8 10
for k1 in range(2,11,2):
    print(k1,end=' ')
```

2 4 6 8 10

In [11]:

```python
# 10 to 1
for k2 in range(10,0,-1):
    print(k2,end=' ')
```

10 9 8 7 6 5 4 3 2 1

In [12]:

```python
# 10 8 6 4 2
for j1 in range(10,0,-2):
    print(j1,end=' ')
```

10 8 6 4 2

In [14]:

```python
n = int(input())
for i in range(7,n+1):
    print(i,end=' ')
```

67
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57
58 59 60 61 62 63 64 65 66 67

In [17]:

```python
s,e,st=int(input()),int(input()),int(input())
for j in range(s,e,st):
    print(j,end=' ')
```

. . .

In [20]:

```python
# 1 to 10 numbers total=55
t = 0
for i in range(1,11):
    t=t+i
print(t)
```

55

In [21]:

```python
m,n=int(input()),int(input())
t1 = 0
for j in range(m,n+1):
    t1 = t1+j
print(t1)
```

1
100
5050

In [ ]:

```python
# 5 = 1*2*3*4*5     5*4*3*2*1
```

In [24]:

```python
n = int(input())
f = 1
for i in range(1,n+1):
    f = f*i
print(f)
```

5
120

In [26]:

```python
# factors
num = int(input())
for i in range(1,num+1):
    if(num%i==0):
        print(i,end=' ')
```

10
1 2 5 10

In [31]:

```python
# i/p: 7
# o/p: prime number
n = int(input())
f_count = 0
for i in range(1,n+1):
    if(n%i==0):
        f_count=f_count+1
print("factors count= ",f_count)
if(f_count==2):
    print("Prime Number")
else:
    print("Not a prime number")

```

...

In [35]:

```python
## perfect number
## 6 = 1 2 3 6 = 1+2+3=6
## 28 = 1 2 4 7 14 28 = 1+2+4+7+14=28
num = int(input())
f_sum = 0
for j in range(1,num):
    if(num%j==0):
        f_sum=f_sum+j
print("factors sum= ",f_sum)
if(f_sum==num):
    print("Perfect Number")
else:
    print("Not perfect number")
```

```
28
factors sum=  28
Perfect Number
```

Syntax for while loop

initialization while(condition): statements increment/decrement

In [36]:

```python
i = 1
while(i<=10):
    print(i,end=' ')
    i=i+1
```

```
1 2 3 4 5 6 7 8 9 10
```

In [1]:

```python
i=2
while(i<=10):
    print(i,end=' ')
    i=i+2
```

2 4 6 8 10

In [3]:

```python
k = 10
while(k>=1):
    print(k,end=' ')
    k=k-1
```

10 9 8 7 6 5 4 3 2 1

In [1]:

```python
i=1
t=0
while(i<=10):
    t=t+i
    i=i+1
print(t)
```

55

In [2]:

```python
# i/p: 238
# o/p: 832
n = int(input())# 374
rev = 0
while(n>0): # T
    r = n%10 # 374%10=4 37%10=7 3%10=3 0%10=0
    rev = rev*10+r # 0*10+4=4 4*10+7=47 47*10+3=473
    n = n//10  # 374//10=37 37//10=3   3//10=0
print(rev)
```

374
473

In [3]:

```python
121 - 121
```

Out[3]:

37

In [4]:

```python
# i/p: 38295
# o/p:  5 9 3
n = int(input())
while(n>0):
    r = n%10
    if(r%2!=0):
        print(r,end=' ')
    n = n//10
```

```
892734983
3 9 3 7 9
```

In [ ]:

```python
# i/p: 34672
# o/p:   sum = 12
        product = 48
```

In [5]:

```python
n=int(input())
p=1
s=0
while(n>0):
    r=n%10
    if(r%2==0):
        s=s+r
        p=p*r
    n=n//10
print("sum = ",s)
print("product = ",p)
```

```
675876
sum =  20
product =  288
```

In [ ]:

```python
## input:-   (1-100)--> 47--- userid
            enter the password :-
            same --> Login successful

            not same :- incorrect password

# input: 130
# o/p:  Invalid userid
```

In [8]:

```python
userid = int(input('Enter userid: '))
if(userid>=1 and userid<=100):
    pwd=input('Enter any password: ')
    if(pwd=="apssdc@123"):
        print("Login Successful")
    else:
        print("Incorrect password")
else:
    print("Invalid Userid")
```

```
Enter userid: 190
Invalid Userid
```

In [ ]:

```python

```

In [ ]:

```python

```