```
if True:
    print("Hello")
```

```
Hello
```

```
if True:
print("Hello")
```

```
  Cell In[2], line 2
    print("Hello")
    ^
IndentationError: expected an indented block after 'if' statement on
line 1
```

```
if True:
    print('hello')
```

```
hello
```

```
if False:
    print('bye')
```

```
if False:
    print("How r u")
```

```
if True:
    print("Data Science")
```

```
Data Science
```

```
if False:
    print("Data Science")
print("bye for now")
```

```
bye for now
```

```
if True:
    print("Data Science")
print("bye for now")
```

```
Data Science
bye for now
```

```
if True:
    print("Data Science")
else:
    print("bye for now")
```

```
Data Science
```

```
if False:
    print("Data Science")
print("bye for now")
```

```
bye for now
```

```
if False:
    print("Data Science")
else:
    print("bye for now")
```

```
bye for now
```

Write a python code to check wheater the number is even or odd

(Lets do one program as if divided by 2 then remainder is 0 then it is even number if remainder is not 0 then it is odd number)

```
x=4    #to print only even number
r=x%2
if r==0:
    print("even number")
```

```
even number
```

```
x=5
r=x%2
if r==0:
    print("even number")
```

```
x=6
r=x%2
if r==0:
    print("even number")
if r==1:
    print("odd number")
```

```
even number
```

```
##if we observe the code its too many line cuz many of the coder
always they wanted to reduce the code length which is very good
practise. instead of 2 if we can use if-- else
```

```
x=6
r=x%2
if r==0:
    print("even number")
else:
    print("odd number")
```

```
even number
```

```
x=6
r=x%2
if r==0:
    print("even number")
else:
    print("odd number")
```

```
even number
```

```
x=6
r=x%2
if r==0:
    print("even number")
print("odd number")
```

```
even number
odd number
```

```
x=4
r=x%2
if r==0:
    print("even number")
else:
    print("odd number")
```

```
even number
```

```
x=5
r=x%2
if r==0: print("even number")
else:  print('odd number')
```

```
odd number
```

```
x = 10
r = x % 2

if r == 0:
    print('Even number')
if r == 1:
    print('odd number')
```

```
Even number
```

```
x = 9
r = x % 2

if r == 0:
    print('Even number')
```

```
if r != 0:
    print('odd number')
```

```
odd number
```

nested if (if we have 2 condition so we need to implement with nested if)

```
x=3
r=x%2
if r==0:
    print("even number")
    if x>5:
        print("greater number")
else:
    print("odd number")
```

```
odd number
```

```
x=6
r=x%2
if r==0:
    print("even number")
    if x>5:
        print("greater number")
    else:
        print("smaller number")
else:
    print("odd number")
```

```
even number
greater number
```

```
x=4
r=x%2
if r==0:
    print("even number")
    if x>5:
        print("greater number")
else:
    print("odd number")
```

```
even number
```

```
x=12
r=x%2
if r==0:
    print("even number")
    if x>5:
        print("greater number")
```

```
else:
    print("odd number")
```

```
even number
greater number
```

```
x=13
r=x%2
if r==0:
    print("even number")
    if x>5:
        print("greater number")
else:
    print("odd number")
```

```
odd number
```

```
x=4
r=x%2
if r==0:
    print("even number")
    if x>5:
        print("greater number")
    else:
        print("smaller number")
else:
    print("odd number")
```

```
even number
smaller number
```

```
x=6
r=x%2
if r==0:
    print("even number")
    if x>5:
        print("greater number")
    else:
        print("smaller number")
else:
    print("odd number")
```

```
even number
greater number
```

IF-ELIF-ElSE

```
# when you use if it will check all condition but if we mention elif
then it wont check all condition
# when we use if condition it will check all every block of code
better debug in pycharm
```

```
# you can debug with value 1 & d for both if & elif

x=2
if x==1:
    print("One")
if x==2:
    print("Two")
if x==3:
    print("Three")
if x==4:
    print("Four")
```

```
Two
```

```
# elif it wont check till the block once you find the output it wont go to next line
# you can try with multiple parameter 1, 2 & 3 value in x

x=4
if x==1:
    print("One")
if x==2:
    print("Two")
if x==3:
    print("Three")
if x==4:
    print("Four")
```

```
Four
```

```
x=10
if x==1:
    print("One")
elif x==2:
    print("Two")
elif x==3:
    print("Three")
elif x==4:
    print("Four")
```

```
x=10
if x==1:
    print("One")
elif x==2:
    print("Two")
elif x==3:
    print("Three")
elif x==4:
    print("Four")
else:
    print("number not found")
```

```
number not found
```

```
#short hand if
a=30
b=20
if a>b: print("a is greater than b")
```

```
a is greater than b
```

```
num=int(input("enter a number"))
if num>0:
    print("positive number")
elif num<0:
    print("negative number")
else:
    print("number is zero")
```

```
enter a number 20
```

```
positive number
```

```
num=int(input("enter a number"))
if num>0:
    print("positive number")
elif num<0:
    print("negative number")
else:
    print("number is zero")
```

```
enter a number -20
```

```
negative number
```

```
num=int(input("enter a number"))
if num>0:
    print("positive number")
elif num<0:
    print("negative number")
else:
    print("number is zero")
```

```
enter a number 0
```

```
number is zero
```

##geeks for geeks

16th july(LOOPS)

LOOPS -- in programing world some time we keep on repeating , may be you want to repeat 5 statement so one way is copy & paste multiple times or other way is

if you want to print the datascience 1000 times then what you will you cant copy for 1000 times,if you want to print 1000 times then you cant do manualy . that is the reason why we need to apply loop ->

2 type of loops -- While loop & For loop

##while loop

```
print('siri babe where r u')
print('siri babe where r u')
print('siri babe where r u')
print('siri babe where r u')
print('siri babe where r u')
```

```
siri babe where r u
siri babe where r u
siri babe where r u
siri babe where r u
siri babe where r u
```

```
i=1             #initializing
while i<=5:      #condition
    print('siri babe where r u')
    i=i+1          #increment
```

```
siri babe where r u
siri babe where r u
siri babe where r u
siri babe where r u
siri babe where r u
```

```
i=1             #initializing
while i<=5:      #condition
    print('siri babe where r u:',i)
    i=i+1          #increment
```

```
siri babe where r u: 1
siri babe where r u: 2
```

```
siri babe where r u: 3
siri babe where r u: 4
siri babe where r u: 5
```

```
i=1             #initializing
while i<=5:      #condition
    print(i,':siri babe where r u')
    i=i+1          #increment
```

```
1 :siri babe where r u
2 :siri babe where r u
3 :siri babe where r u
4 :siri babe where r u
5 :siri babe where r u
```

```
i=5             #initializing
while i>=1:      #condition
    print('siri babe where r u:',i)
    i=i-1          #decr ement
```

```
siri babe where r u: 5
siri babe where r u: 4
siri babe where r u: 3
siri babe where r u: 2
siri babe where r u: 1
```

```
i=1
while i<=5:
    print(' datascience', end= "")   #if we mention end then new line
will not create
    j=1
    while j<=4:
        print(' technology', end="")
        j=j+1
    i=i+1
    print()
```

```
 datascience technology technology technology technology
 datascience technology technology technology technology
 datascience technology technology technology technology
 datascience technology technology technology technology
 datascience technology technology technology technology
```

```
i=1
while i<=2:
    j=0
    while j<=2:
        print(i*j,end=' ')
        j += 1
    print()
    i += 1
```

```
0 1 2
0 2 4
```

```
i=1
while i<=4:
    j=0
    while j<=3:
        print(i*j,end=' ')
        j += 1
    print()
    i += 1
```

```
0 1 2 3
0 2 4 6
0 3 6 9
0 4 8 12
```

```
##FOR LOOP-normally while loop it work with iteration or certaion some condition but for loop it will work with sequence (list, string,int)
```

```
name='nit'
for j in name:
    print(j)
```

```
n
i
t
```

```
name1=[1,3.5,'hello']
for i in name1:
    print(i)
```

```
1
3.5
hello
```

```
for i in [2,3,7.8,'hello']:
    print(i)
```

```
2
3
7.8
hello
```

```
range(5)
```

```
range(0, 5)
```

```
for i in range(5):
    print(i)
```

```
0
1
2
3
4
```

```
for i in range(2,5):
    print(i)
```

```
2
3
4
```

```
for i in range(1,10,5):
    print(i)
```

```
1
6
```

##print the value which is divisible by 5

```
for i in range(1,51):
    if i%5==0:
        print(i)
```

```
5
10
15
20
25
30
35
40
45
50
```

```
for i in range(1,21):
    if i%2==0:
        print(i)
```

```
2
4
6
8
10
12
14
16
18
20
```

```python
for i in range(1,31):
    if i%3==0:
        print(i)
```

```
3
6
9
12
15
18
21
24
27
30
```

```python
for i in range(1,31):
    if i%3!=0:
        print(i)
```

```
1
2
4
5
7
8
10
11
13
14
16
17
19
20
22
23
25
26
28
29
```

```python
for i in range(1,51):
    if i%5!=0:
        print(i)
```

```
1
2
3
4
6
7
```

```
8
9
11
12
13
14
16
17
18
19
21
22
23
24
26
27
28
29
31
32
33
34
36
37
38
39
41
42
43
44
46
47
48
49
```

```
for i in range(1,11):
    print(i)
```

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

```
# LETS DISCUSS ABOUT 3 KEYWORDS -- BREAK || CONTINUE || PASS
# BREAK STATEMNT - if you apply break statment in a loop then it will
end the loop
# Pass = skips block of code( function, class etc)
# Continue= skips 1 step/iteration during loop
# Break= jumps out of the function/loop

for i in range(1,11):
    if i == 6:
        break
    print(i)
```

```
1
2
3
4
5
```

```
for i in range(1,11):
    if i == 6:
        continue
    print(i)
```

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

```
for i in range(1,11):
    if i == 6:
        pass
    print(i)
```

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

```
for i in range(1,10):
```

```
  Cell In[30], line 1
    for i in range(1,10):
                         ^
SyntaxError: incomplete input
```

```
for i in range(1,10):
    pass
```

```
for i in range(1,11):
    if i == 6:
        continue
    print('hello:',i)
```

```
hello: 1
hello: 2
hello: 3
hello: 4
hello: 5
hello: 7
hello: 8
hello: 9
hello: 10
```

```
for i in range(1,51):                    #print the numbers from 1 to
50 where multiples of 3 nd 5 shouldnt be there
    if i%3==0 or i%5 == 0:
        continue
    print(i)
print('end')
```

```
1
2
4
7
8
11
13
14
16
17
19
22
23
26
28
29
31
32
34
```

```
37
38
41
43
44
46
47
49
end
```

##i dont want to print the values which are even numbers that means print only odd numbers

```
for i in range(1,51):
    if(i%2==0):
        continue
    else:
        print(i)
print('bye')
```

```
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41
43
45
47
49
bye
```

##printing pattern in python

```
print('# # # #')
print('# # # #')
print('# # # #')
print('# # # #')
```

```
# # # #
# # # #
# # # #
# # # #
```

```
for i in range(1,5):
    i=i+1
    print('# # # #')
```

```
# # # #
# # # #
# # # #
# # # #
```

```
for i in range(1,5):
    if i<=5:
        print('# # # #')
```

```
# # # #
# # # #
# # # #
# # # #
```

```
for j in range(4):
    print('#')
```

```
#
#
#
#
```

```
for j in range(4):
    print('# # # #')
```

```
# # # #
# # # #
# # # #
# # # #
```

```
for j in range(4):
    print('#',end=" ")
```

```
# # # #
```

```
for j in range(4):
    print('#',end=" ")
```

```
for j in range(4):
    print('#',end=" ")

# # # # # # # #

for j in range(4):
    print('#',end=" ")

print()

for j in range(4):
    print('#',end=" ")

# # # #
# # # #

for j in range(4):
    print('#',end=" ")

print()

for j in range(4):
    print('#',end=" ")

print()

for j in range(4):
    print('#',end=" ")

print()

for j in range(4):
    print('#',end=" ")

# # # #
# # # #
# # # #
# # # #

for i in range(4):
    for j in range(4):
        print('#', end=" ")
    print()

# # # #
# # # #
# # # #
# # # #

for i in range(4):
    for j in range(i+1):
```

```
        print('#', end=" ")
    print()
```

```
#
# #
# # #
# # # #
```

```
for i in range(1,5):
    print("# "*i)
```

```
#
# #
# # #
# # # #
```

```
for i in range(1,5):
    for j in range(4):
        if i>j:
            print("#",end=" ")
    print()
```

```
#
# #
# # #
# # # #
```

```
list(range(5))
```

```
[0, 1, 2, 3, 4]
```

```
for i in range(4):
    for j in range(i):
        print('#', end=" ")
    print()
```

```
#
# #
# # #
```

```
for i in range(4):
    for j in range(i+1):
        print('#', end=" ")
    print()
```

```
#
# #
# # #
# # # #
```

```
for i in range(4):
    for j in range(4-i):
        print('#', end=" ")
    print()
```

```
# # # #
# # #
# #
#
```

```
for i in range(1,5):
    print("# "*(5-i))
```

```
# # # #
# # #
# #
#
```

17th july

##For else

```
nums=[12,15,18,21,26,30,40]
for num in nums:
    if num%5==0:
        print(num)
```

```
15
30
40
```

```
nums=[12,14,18,21,25,30,35]
for num in nums:
    if num%5==0:
        print(num)
```

```
25
30
35
```

```
nums=[12,14,18,21,25,20]
for num in nums:
    if num%5==0:
        print(num)
```

```
25
20
```

```
nums=[12,14,18,21,20,25]
for num in nums:
    if num%5==0:
```

```
        print(num)
        break
```

```
20
```

```
nums=[10,14,18,21,5,10]
for num in nums:
    if num % 5 ==0:
        print(num)
        break        #it will print only 1 number then it break
```

```
10
```

```
nums=[7,14,18,21,23,27]  #here there is no number which is divisible
by 5 we got output as blank
for num in nums:
    if num %5==0:
        print(num)
        break
```

```
nums=[7,14,18,21,23,27,29]   #here there is no number which is
divisible by 5 we hot output as bank
for num in nums:
    if num % 5 ==0:
        print(num)
        break
    else:
        print('Number not found')  #every iteration its checking
condition
```

```
Number not found
Number not found
Number not found
Number not found
Number not found
Number not found
Number not found
```

```
nums=[7,14]
for num in nums:
    if num % 5 == 0:
        print(num)
        break
    else:
        print('Number Not Found')
```

```
Number Not Found
Number Not Found
```

```
nums = [7,14,18,21,23,27] #hear there is no number which is divisible
by 5 we got output as blank
```

```
for num in nums:
    if num % 5 == 0:
        print(num)
        break
else:
        print('Number Not Found') # hear else we dont write in if
block but we can write in for block only
```

```
Number Not Found
```

```
nums = [10,14,18,21,20,27] #hear there is no number which is divisible
by 5 we got output as blank

for num in nums:
    if num % 5 == 0:
        print(num)
        break
else:
    print('Not Found')
```

```
10
```

```
nums = [10,14,18,21,20,27,30] #hear there is no number which is
divisible by 5 we got output as blank

for num in nums:
    if num % 5 == 0:
        print(num)
        #break
else:
        print('Not Found')
```

```
10
20
30
Not Found
```

```
nums = [10,14,18,21,20,27] #hear there is no number which is divisible
by 5 we got output as blank
for num in nums:
    if num % 5 == 0:
        print(num)
        break
else:
        print('Not Found')
```

```
10
```

Prime number- how to check given number is prime number or not

```
num=14
for i in range(2,num):
    if num % i ==0:
        print('Not prime number')
        break
else:
    print('Prime Number')
```

```
Not prime number
```

```
num=13
for i in range(2,num):
    if num % i==0:
        print('Not prime number')
        break
else:
    print('Prime Number')
```

```
Prime Number
```