

Example

Questions:

What will be the output of the code given below?

```
number = 15
if number < 10:
    print("Less than 10")
elif number < 20:
    print("Less than 20")
elif number < 30:
    print("Less than 30")
else:
    print("Greater than 30")
```

Less than 20

Nested if Statement

Check whether the number is positive, negative or zero.

```
number = 20
if number >= 0:
    if number == 0:
        print("Zero")
    else:
        print("Positive")
    else:
        print("Negative")
→
```

```
number ← 20
number >= 0:   True
number == 0:   False

else:   True
print("Positive")
```

Output

Positive

Nested if Statement

Check whether the number is positive, negative or zero.

```
number = 0
if number >= 0:
    if number == 0:
        print("Zero")
    else:
        print("Positive")
else:
    print("Negative")
→
```

```
number ← 0
number >= 0   True
number == 0:   True
print("Zero")
```

Nested if Statement

Check whether the number is positive, negative or zero.

```
number = -5
if number >= 0:
    if number == 0:
        print("Zero")
    else:
        print("Positive")
else:
    print("Negative")
→
```

```
number ← -5
number >= 0   False

else:   True
print("Negative")
```

Output

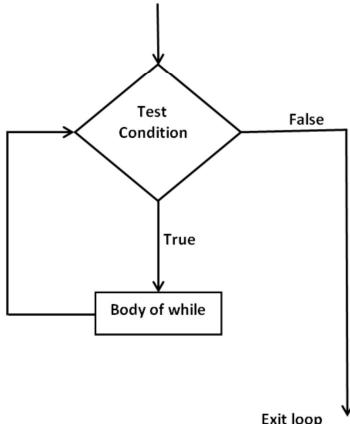
Zero

Output

Negative

While Loop

- While loop is used to iterate over a block of code as long as the test condition is true.
- Generally used when the number of times the loop is executed is not specified explicitly in advance.



```
while Test_Condition:  
    Body of while
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))  
a=[]  
while(n>0):  
    rem=n%2  
    a.append(rem)  
    n=n//2  
a.reverse()  
print("Binary Equivalent is: ",a)
```

while loop

Convert decimal to binary

while loop

Convert decimal to binary

```
→n=int(input("Enter a number: "))  
a=[]  
while(n>0):  
    rem=n%2  
    a.append(rem)  
    n=n//2  
a.reverse()  
print("Binary Equivalent is: ",a)
```

Enter a number: 10
→ n ← 10

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))  
→a=[]  
while(n>0):  
    rem=n%2  
    a.append(rem)  
    n=n//2  
a.reverse()  
print("Binary Equivalent is: ",a)
```

Enter a number: 10

↪ n ← 10

a = [] empty list

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))  
a=[]  
→while(n>0):  
    rem=n%2  
    a.append(rem)  
    n=n//2  
a.reverse()  
print("Binary Equivalent is: ",a)
```

Enter a number: 10

↪ n ← 10

a = [] empty list

n=10 > 0: True

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))  
a=[]  
while(n>0):  
→    rem=n%2  
    a.append(rem)  
    n=n//2  
a.reverse()  
print("Binary Equivalent is: ",a)
```

Enter a number: 10

↪ n ← 10

a = [] empty list

n=10 > 0: True

rem = 10%2 = 0

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))  
a=[]  
while(n>0):  
→    rem=n%2  
    a.append(rem)  
    n=n//2  
a.reverse()  
print("Binary Equivalent is: ",a)
```

Enter a number: 10

↪ n ← 10

a = []

n=10 > 0: True

rem = 10%2 = 0

a.append(rem)

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
    a.append(rem)
→   n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0]
n=10 > 0:  True
    rem = 10%2 = 0
    a.append(rem)
    n=n//2 = 5
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
→while(n>0):
    rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0]
n=5 > 0:  True
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
→   rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0]
n=5 > 0:  True
    rem = 5%2 = 1
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
→   a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0]
n=5 > 0:  True
    rem = 5%2 = 1
    a.append(rem)
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
    a.append(rem)
→   n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1]
n=5 > 0:  True
    rem = 5%2 = 1
    a.append(rem)
    n=n//2 = 2
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
→while(n>0):
    rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1]
n=2 > 0:  True
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
→   rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1]
n=2 > 0:  True
    rem = 2%2 = 0
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
→   a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1]
n=2 > 0:  True
    rem = 2%2 = 0
    a.append(rem)
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
    a.append(rem)
→   n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1,0]
n=2 > 0:  True
    rem = 2%2 = 0
    a.append(rem)
    n=n//2 = 1
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
→while(n>0):
    rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n  10
a = [0,1,0]
n=1 > 0:  True
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
→   rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1,0]
n=1 > 0:  True
    rem = 1%2 = 1
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
→   a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1,0]
n=1 > 0:  True
    rem = 1%2 = 1
    a.append(rem)
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1,0,1]
n=1 > 0:   True
    rem = 1%2 = 1
    a.append(rem)
    n=n//2 = 0
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
→while(n>0):
    rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1,0,1]
n=0 > 0:   False
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
    a.append(rem)
    n=n//2
→a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1,0,1]
n=0 > 0:   False
a.reverse()
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
→while(n>0):
    rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [0,1,0,1]
n=0 > 0:   False
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
→print("Binary Equivalent is: ",a)
```

```
Enter a number: 10
↪      n ← 10
a = [1,0,1,0]
n=0 > 0:   False
a.reverse()
print("Binary
↪   Equivalent is:", a)
```

while loop

Convert decimal to binary

```
n=int(input("Enter a number: "))
a=[]
while(n>0):
    rem=n%2
    a.append(rem)
    n=n//2
a.reverse()
print("Binary Equivalent is: ",a)
```

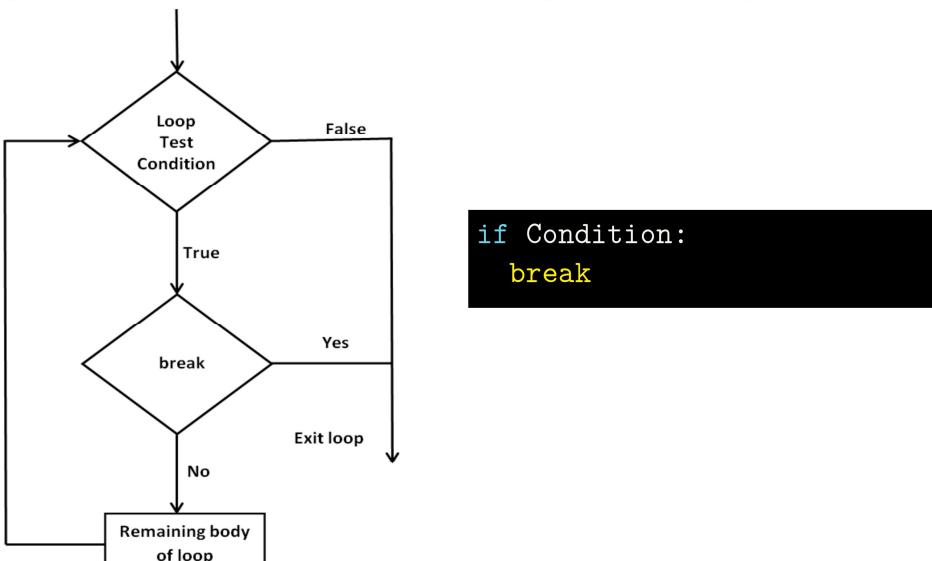
```
Enter a number: 10
          ↳      n ← 10
a = [1,0,1,0]
n=0 > 0:  False

a.reverse()
print("Binary
          ↳   Equivalent is:", a)
```

```
Binary equivalent is: [1,0,1,0]
```

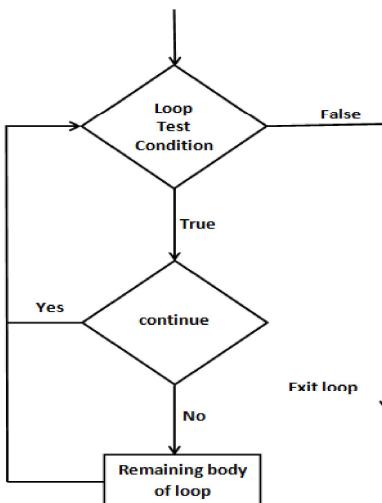
break statement

The break statement terminates the loop containing it. Control of the program flows to the statement immediately after the body of the loop.



continue statement

The continue statement is used to skip the rest of the code inside a loop for the current iteration only. Loop does not terminate but continues on with the next iteration.



```
if Condition:
    continue
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count, " ", end="")
print("\nProgram Over")
```

Example

Working of break and continue statement

```
→count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 0
while True:
    → count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

Example

Working of break and continue statement

```
count = 0
while True:
    → count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 0
while True:    (always True)
count = count + 1
```

Example

Working of break and continue statement

```
count = 0
→while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 0
while True:    (always True)
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    → if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 1
while True:    (always True)
count = count + 1
count > 5:  False
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
→ if count == 3:
    continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 1
while True:  (always True)
count = count + 1
count > 5:  False
count == 3:  False
```

Example

Working of break and continue statement

```
count = 0
→while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
    print("\nProgram Over")
```

```
count = 1
while True:  (always True)
```

Output

```
1
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
→ print(count," ",end="")
print("\nProgram Over")
```

```
count = 1
while True:  (always True)
count = count + 1
count > 5:  False
count == 3:  False
print(count," ",end="")
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
→ if count > 5:
    break
    if count == 3:
        continue
    print(count," ",end="")
    print("\nProgram Over")
```

```
count = 1
while True:  (always True)
count = count + 1
```

Output

```
1
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
→ if count > 5:
    break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 2
while True:  (always True)
count = count + 1
count > 5:  False
```

Output

```
1
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
→ if count == 3:
    continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 2
while True:  (always True)
count = count + 1
count > 5:  False
count == 3:  False
```

Output

```
1
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
→ print(count," ",end="")
    print("\nProgram Over")
```

```
count = 2
while True:  (always True)
count = count + 1
count > 5:  False
count == 3:  False
print(count," ",end="")
print("\nProgram Over")
```

Output

```
1
```

Example

Working of break and continue statement

```
count = 0
→while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
    print("\nProgram Over")
```

```
count = 2
while True:  (always True)
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count, " ", end="")
print("\nProgram Over")
```

```
count = 2
while True:  (always True)
    count = count + 1
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count, " ", end="")
print("\nProgram Over")
```

```
count = 3
while True:  (always True)
    count = count + 1
    count > 5: False
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count, " ", end="")
    print("\nProgram Over")
```

```
count = 3
while True:  (always True)
    count = count + 1
    count > 5: False
    count == 3: True
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count, " ", end="")
    print("\nProgram Over")
```

```
count = 3
while True:  (always True)
    count = count + 1
    count > 5: False
    count == 3: False
    continue (skip remaining
              statements)
    print("\nProgram Over")
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
→while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 3
while True: (always True)
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
while True:
→  count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 3
while True: (always True)
count = count + 1
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
→  if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 4
while True: (always True)
count = count + 1
count > 5: False
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 4
while True: (always True)
count = count + 1
count > 5: False
count == 3: False
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
→ print(count," ",end="")
print("\nProgram Over")
```

```
count = 4
while True:  (always True)
count = count + 1
count > 5:  False
count == 3:  False
print(count," ",end="")
print("\nProgram Over")
```

Output

```
1 2
```

Example

Working of break and continue statement

```
count = 0
→while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 4
while True:  (always True)
```

Output

```
1 2 4
```

Example

Working of break and continue statement

```
count = 0
while True:
    → count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
    print("\nProgram Over")
```

```
count = 4
while True:  (always True)
count = count + 1
```

Output

```
1 2 4
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
→ if count > 5:
    break
    if count == 3:
        continue
    print(count," ",end="")
    print("\nProgram Over")
```

```
count = 5
while True:  (always True)
count = count + 1
count > 5:  False
```

Output

```
1 2 4
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
→ if count == 3:
    continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 5
while True:  (always True)
count = count + 1
count > 5:  False
count == 3:  False
```

Output

```
1 2 4
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
→ print(count," ",end="")
print("\nProgram Over")
```

```
count = 5
while True:  (always True)
count = count + 1
count > 5:  False
count == 3:  False
print(count," ",end="")
```

Output

```
1 2 4
```

Example

Working of break and continue statement

```
count = 0
→while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
    print("\nProgram Over")
```

```
count = 5
while True:  (always True)
```

Output

```
1 2 4 5
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
→ if count > 5:
    break
    if count == 3:
        continue
    print(count," ",end="")
    print("\nProgram Over")
```

```
count = 5
while True:  (always True)
count = count + 1
```

Output

```
1 2 4 5
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
→ if count > 5:
    break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 6
while True:  (always True)
count = count + 1
count > 5:  True
```

Output

```
1 2 4 5
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
→     break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 6
while True:  (always True)
count = count + 1
count > 5:  True
break  (terminate loop)
```

Output

```
1 2 4 5
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
→print("\nProgram Over")
```

```
count = 6
while True:  (always True)
count = count + 1
count > 5:  True
break  (terminate loop)

print("\nProgram Over")
```

Output

```
1 2 4 5
```

Example

Working of break and continue statement

```
count = 0
while True:
    count += 1
    if count > 5:
        break
    if count == 3:
        continue
    print(count," ",end="")
print("\nProgram Over")
```

```
count = 6
while True:  (always True)
count = count + 1
count > 5:  True
break  (terminate loop)

print("\nProgram Over")
```

Output

```
1 2 4 5
Program Over
```