



# Python Looping Techniques



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# Agenda

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- 1. The infinite loop**
- 2. Loop with condition at the top**
- 3. Loop with condition in the middle**
- 4. Loop with condition at the bottom**

# The infinite loop

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**We can create an infinite loop using while statement. If the condition of while loop is always True, we get an infinite loop.**

```
# An example of infinite loop  
# press Ctrl + c to exit from the loop
```

```
while True:  
    num = int(input("Enter an integer: "))  
    print("The double of",num,"is",2 * num)
```

# Loop with condition at the top

**This is a normal while loop without break statements. The condition of the while loop is at the top and the loop terminates when this condition is False.**

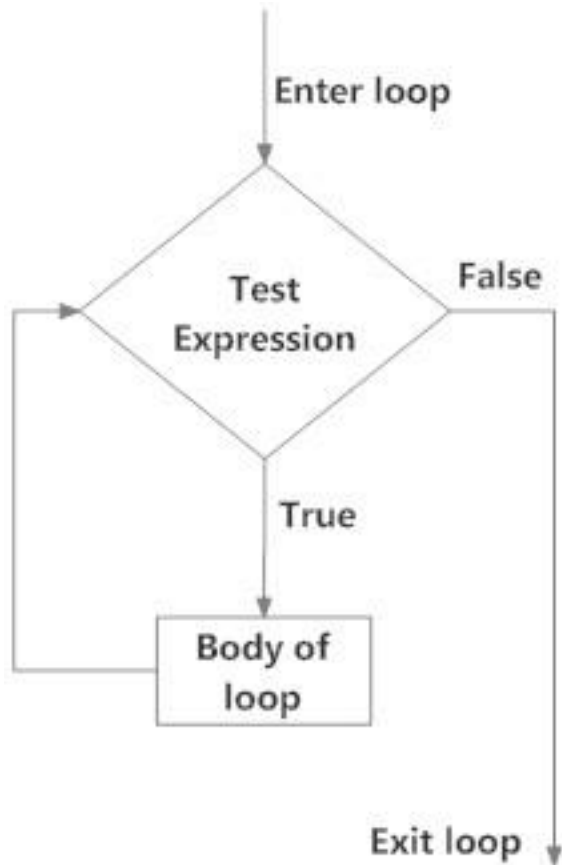


Fig: loop with condition at top

# Program to illustrate a loop with condition at the top

# Try different numbers

n = 10

# Uncomment to get user input

#n = int(input("Enter n: "))

# initialize sum and counter

sum = 0

i = 1

while i <= n:

sum = sum + i

i = i+1 # update counter

# print the sum

print("The sum is",sum)

# Loop with condition in the middle

This kind of loop can be implemented using an infinite loop along with a conditional break in between the body of the loop.

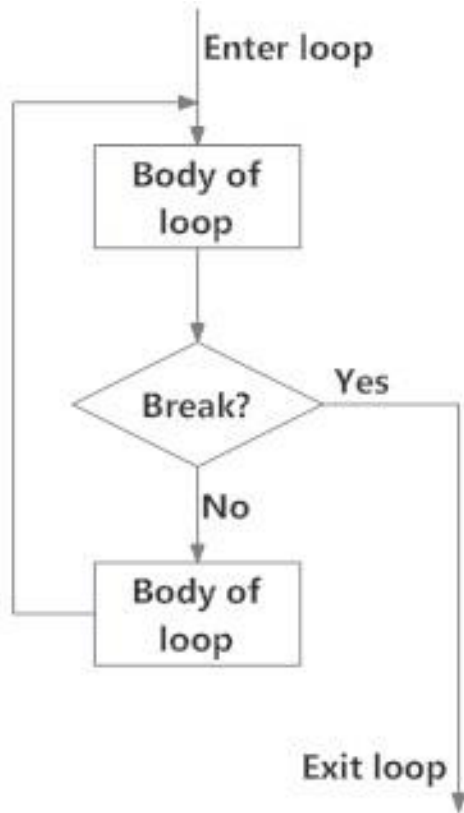


Fig: loop with condition in middle

```
vowels = "aeiouAEIOU"
```

```
# infinite loop
```

```
while True:
```

```
    v = input("Enter a vowel: ")
```

```
    # condition in the middle
```

```
    if v in vowels:
```

```
        break
```

```
    print("That is not a vowel. Try again!")
```

```
print("Thank you!")
```

# Loop with condition at the bottom

This kind of loop ensures that the body of the loop is executed at least once. It can be implemented using an infinite loop along with a conditional break at the end. This is similar to the do...while loop in C.

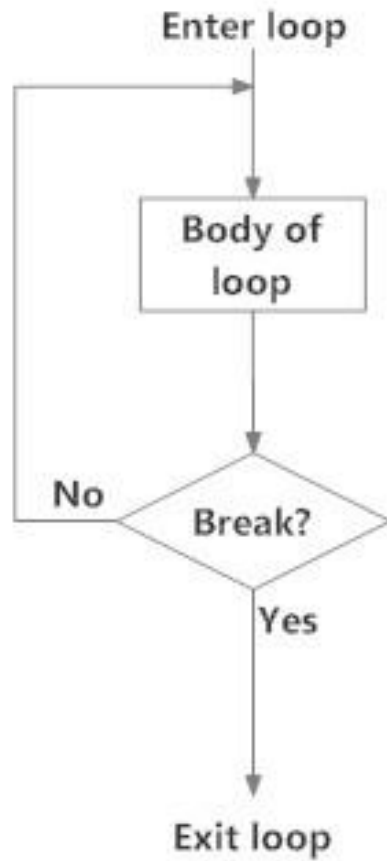


Fig: loop with condition at bottom

```
# import random module
import random
```

```
while True:
    input("Press enter to roll the dice")
```

```
# get a number between 1 to 6
num = random.randint(1,6)
print("You got",num)
option = input("Roll again?(y/n) ")
```

```
# condition
if option == 'n':
    break
```