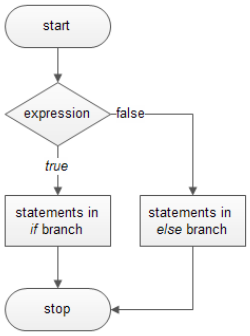
LOOPS

IF-ELIF-ELSE Statement

Used where there are different possible actions for different conditions.

Pseudocode:

```
if email is A or B or C:
    email is Important
elif email is D or E or ....:
    email is Promotions
else:
    email is Spam
```



Nested IF

If-elif-else within another if-elif-else

```
Eg.
# check if number is greater than or equal to zero
if x >= 0:
    # check if it is equal to zero or greater than zero
     if  x == 0:
        print('Number is zero')
     else:
        print('Number is positive')
else:
      print('Number is negative')
```

WHILE Loop:

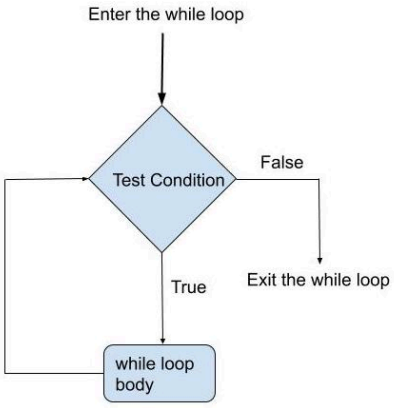
Used to repeat a section of code an unknown number of times until a specific condition is met.

Eg. how many times a given number can be divided by 2 before it is less than or equal to 1

Pseudocode:

Choose a number
Set initial count = 0
While the number > 1:
    Divide the number by 2
    Increase our count by 1
end

It repeats a statement or group of statements while a given condition is TRUE.

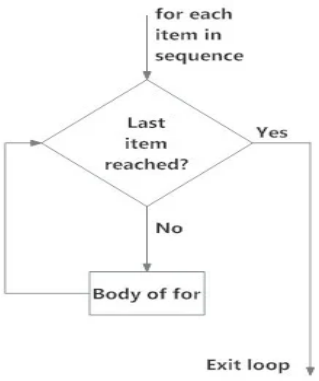
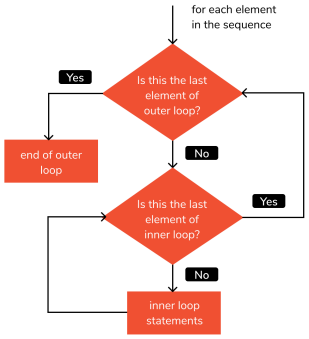



```
number = 5
count = 0
while number > 1:
    number = number / 2
    count += 1
print(count)
```

```
factors = []
num =1
while num<=100:
    if num % 10 == 0:
        factors.append(num)
    num += 1
print(factors)
```

FOR Loop

Used to repeat a specific block of code a known number of times
Different from WHILE Loop: number of times is not known beforehand in while loop
We know exactly how many times a loop will execute before the loop starts

For Loop	Nested For Loop
	

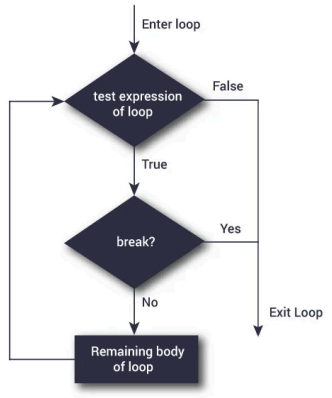
```
#Sum of numbers from 1-10
total = 0
for i in range(1,11):
        total = total + i
```

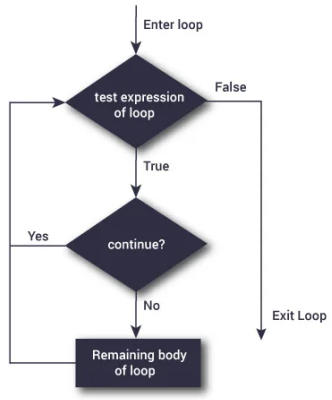
```
#If number divisible by 2 or 3
divisible = []
num = 1
for num in range(1,51):
        if num%2 == 0 or num%3 ==0:
                divisible.append(num)
        num += 1
print(divisible, num)
```

LOOP CONTROL STATEMENTS

To change the way a normal loop is functioning

Control Statement	Description	Code	

break	Terminates the loop and control shifts to the first statement outside it	#Get out of loop when 5 is present
		
		count = 0
		while count < 10:
		  count += 1
		  If count == 5:
		  break
		  print('inside loop', count)
		print('Outside while loop')
			

continue	Causes the loop to skip the remainder of its body and shifts to the next item in the sequence	#Print numbers 1-100 except multiples of 3
		
		multiples = []
		for i in range(1,101):
		  if (i%3 == 0):
		  continue
		  else:
		
		multiples.append(i)
		print(multiples)
			

pass	Used when the statement is required but we don't want any output. Generally used as a placeholder for functionality to be added later - do nothing	#Print TMLC on every 3rd count