for is similar to while loop in a sense that it also does something multiple times. But instead of doing something until a condition becomes false(like while loop), it loops over data types like list or strings The structure looks something like

for <loop variable> in <iterable>

<statement>

...

<iterable> could be a list / string variable or value (constant) <loop variable> in each iteration the loop variable contains to a different value present in the iterable

e.g

for i in [0,1,2]:

print(i)

print("done")

Let's go through the loop

* step 1: [0, 1, 2] is a list so it can be looped over(also called as iterable).
* step 2: i is set the value 0 automatically. Since 0 is the first item in the list.
* step 3: prints value i which is 0
* step 4: i is set to the vlaue 1 automatically. Since 1 is the next item in the list. Note that you don't manipulate the loop variable i directly
* step 5: prints value i which is 1
* step 6: i is set to the vlaue 2 automatically. Since 2 is the next item in the list. Note that you don't manipulate the loop variable i directly
* step 7: prints value i which is 2
* step 8: there are no more items in the list, so the loop terminates. Note there is no explicit boolean condition like while loop.
* step 9: print "done"

Note that i (loop variable) acts like magic because in each iteration, the value automatically points to subsequent items in the list(iterable)

Another example

for letter in "swetha":

print(letter)

Think about what the ouput will be.

count = 0

for letter in "swetha and vishnu":

if letter == "a":

count = count + 1

print(count)

How about this. What is the program trying to do. What will be the output?

from math import \*

for degree in [0, 30, 45, 60, 90]:

print(sin(radians(degree))