

Code with Me

Meeting #12

code
with
me ♥

While Loops

WHILE LOOP:

- The second type of loop we will do is the while loop.
- The while loop executes a command as long as the condition is true.
- It is different from for loops since for loops have a specified range that they loop for and then stop.
- While loops only stop when the condition is not met anymore.

EXAMPLE OF THE WHILE LOOP:

- `i = 2`
- `while i<=5:`
 `print(i)`
 `i += 1`

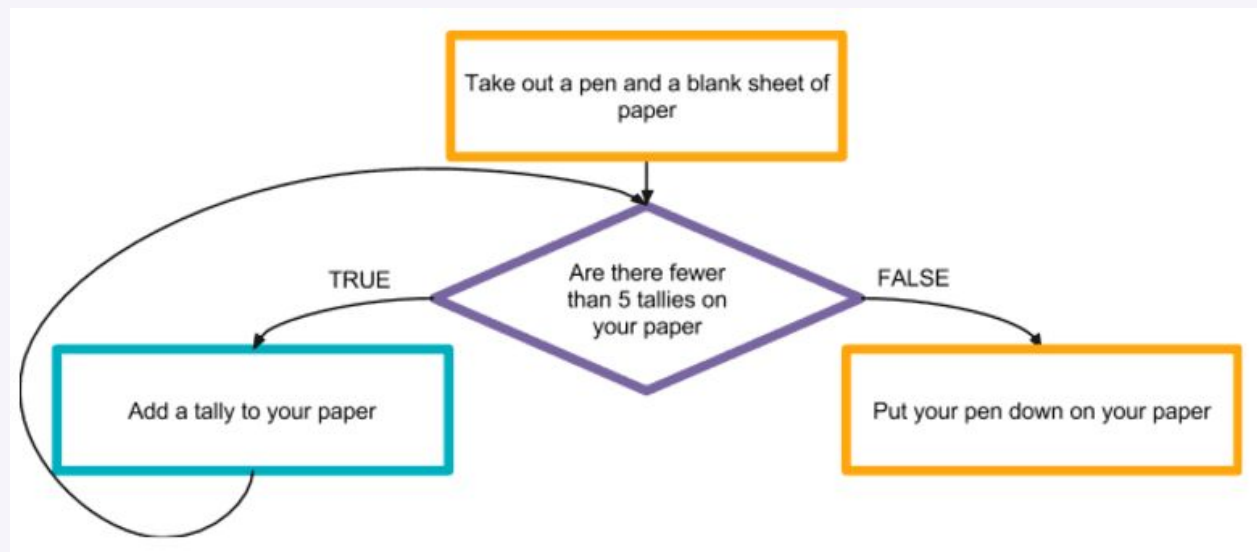
This program will keep printing i as long as i is less than or equal to 5.

- It will also add 1 to i each time it loops.
- So, when the value of i reaches 6, it will exit the loop and stop printing i.

SYNTAX:

- `while` ***condition***:
 Body of while
- The condition is usually similar to a condition you would put for an if statement.
 - I.e, you use the comparison operators and logical operators.
 - In this way, it is similar to the If statement.
 - The only difference is that it keeps looping until the condition is not met anymore, instead of going to the else statement or printing only once.

FLOWCHART:



INFINITE LOOPS:

- The while loop first checks the condition.
 - If the condition is true, it moves on to the body.
 - Then it goes back to the condition. If it is still true, it moves on to the body.
 - This continues until the condition is no longer true
- This is why it's so easy to get stuck in the loop! If you never change the value of your variable, then the condition will always be true.
 - You will then be stuck in what is called an infinite loop. It will never end!
- You can get stuck in an infinite for loop too, but that's more complicated to do (it probably won't happen by accident).
- To exit an infinite loop, press Ctrl + C on your keyboard.

ACTIVITY:

1. Print the first 20 numbers (1,2,3,4...20) using a while loop.

Need:

Number = 1

While loop, condition for numbers under or equal to 20

Print out the variable

Add 1 to the variable

2. Write a code to print the following pattern below:

(5 #'s per row)

(there are 4 rows

#####

#####

(you'll need to use multiplication * for the print function string)

"#####"

- Write a while loop to find the sum of all numbers until 20.

Answer: 210