

TX00FL42-3001

WHILE LOOPS

MUATH OTHMAN



LET'S CHECK HOMEWORKS!



NEXT WEEK'S LECTURE



ASSISTANT TIME



LET'S TURN
OFF AI!



LEARNING OBJECTIVES

- Understand the concept of repetition using while loops
- Write Python programs using while loops
- Distinguish between fixed and user-controlled repetitions



REPETITION IS ONE OF THE BASIC PRINCIPLES OF PROGRAMMING

While
loops



For
loops

LET'S TAKE
EXAMPLE





EXAMPLE: VENDING MACHINE

Scenario: You want to buy chips costing 5 euros.



```
as long as amount_paid < 5  
  give coin
```

THIS IS NOT CODE!!!!!!

EXAMPLE: VENDING MACHINE

Scenario: You want to buy chips costing 5 euros.



```
while (condition):  
    block to be repeated
```

Python Syntax

The background is a solid light orange color. It features abstract, organic shapes in teal and a darker orange. One teal shape is in the top right corner, and another is in the bottom left corner. A darker orange shape is partially visible on the right side, overlapping the teal shape.

**LET'S WRITE VENDING
MACHINE CODE
TOGETHER**

USER-CONTROLLED REPETITION

```
command = input("Enter command: ")  
while command != "stop":  
    print("Executing command: " + command)  
    command = input("Enter command: ")  
print("Execution stopped.")
```

The background is a solid light orange color. In the top right corner, there is a teal shape that curves downwards and to the left, and an orange shape that curves downwards and to the right. In the bottom left corner, there is a teal shape that curves upwards and to the right, and an orange shape that curves upwards and to the left.

EXERCISE

FIXED REPETITIONS

```
● ● ●  
  
rounds = int(input("How many greetings: "))  
finished_rounds = 0  
while finished_rounds < rounds:  
    print("Good morning")  
    finished_rounds += 1
```

FIXED REPETITIONS

```
● ● ●  
  
rounds = int(input("How many greetings: "))  
finished_rounds = 0  
while finished_rounds < rounds:  
    print("Good morning")  
    finished_rounds += 1
```

Let's Debug

NESTED LOOPS



```
first = 1
while first <= 5:
    second = 1
    while second <= 5:
        print(f"{first} times {second} is {first*second}")
        second += 1
    first += 1
```

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EXERCISE

BREAK STATEMENT



```
command = input("Enter command: ")
while command != "stop":
    if command == "MAYDAY":
        break
    print("Executing command: " + command)
    command = input("Enter command: ")
print("Execution stopped.")
```

WHILE/ELSE STATEMENT

```
command = input("Enter command: ")
while command != "stop":
    if command == "MAYDAY":
        break
    print("Executing command: " + command)
    command = input("Enter command: ")
else:
    print("Goodbye.")
print("Execution stopped.")
```



```
number = 1  
while number < 5:  
    print(number)
```

What happens here?

EXERCISE