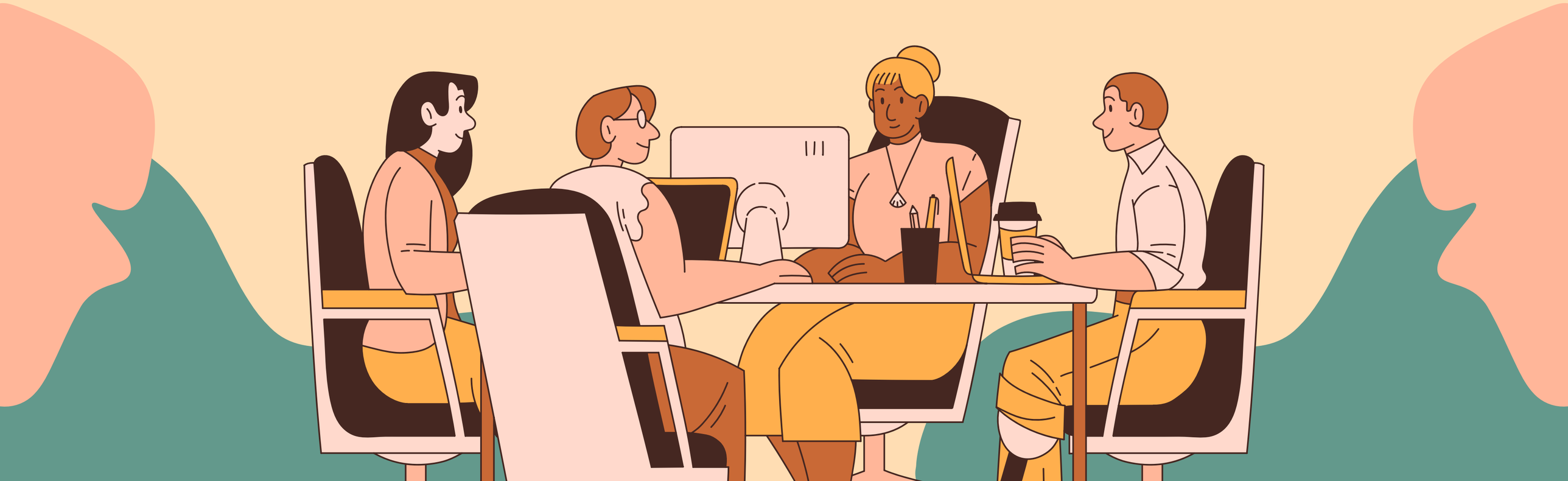
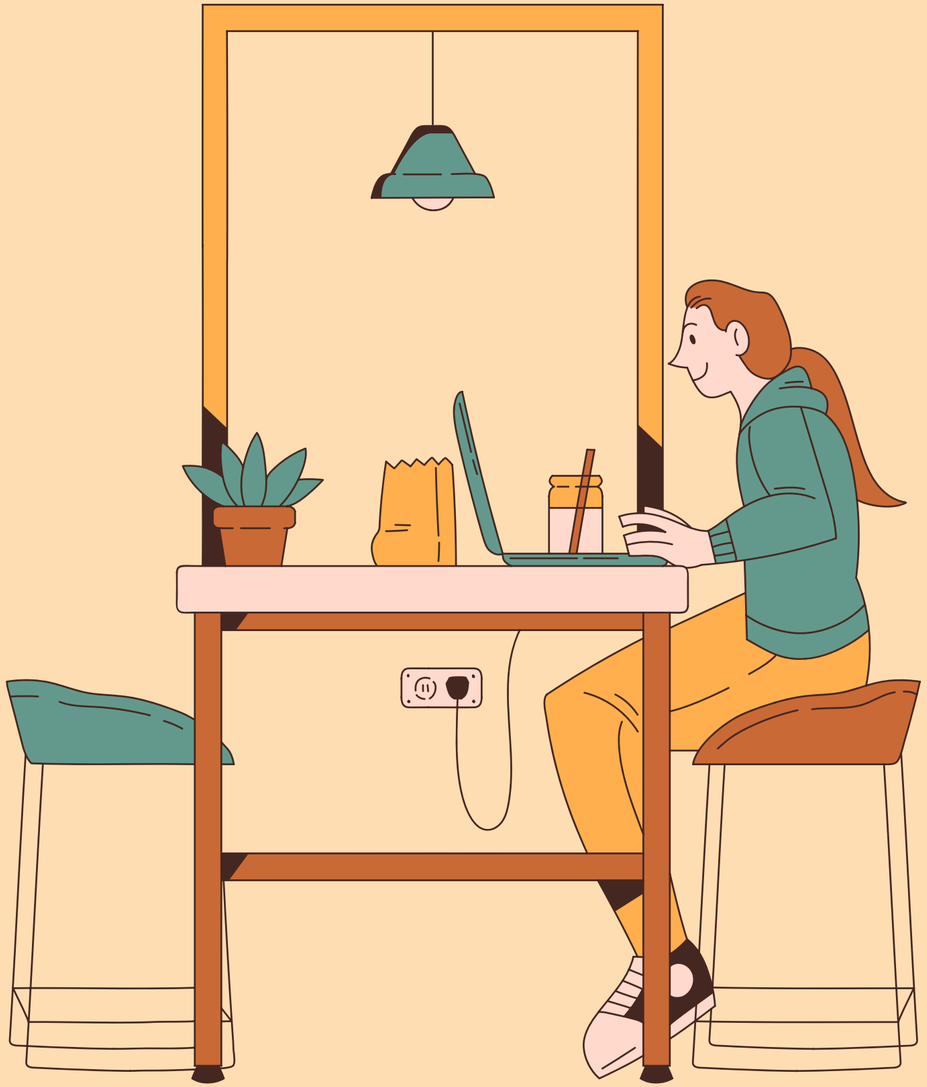
TX00FL42-3001

WHILE LOOPS

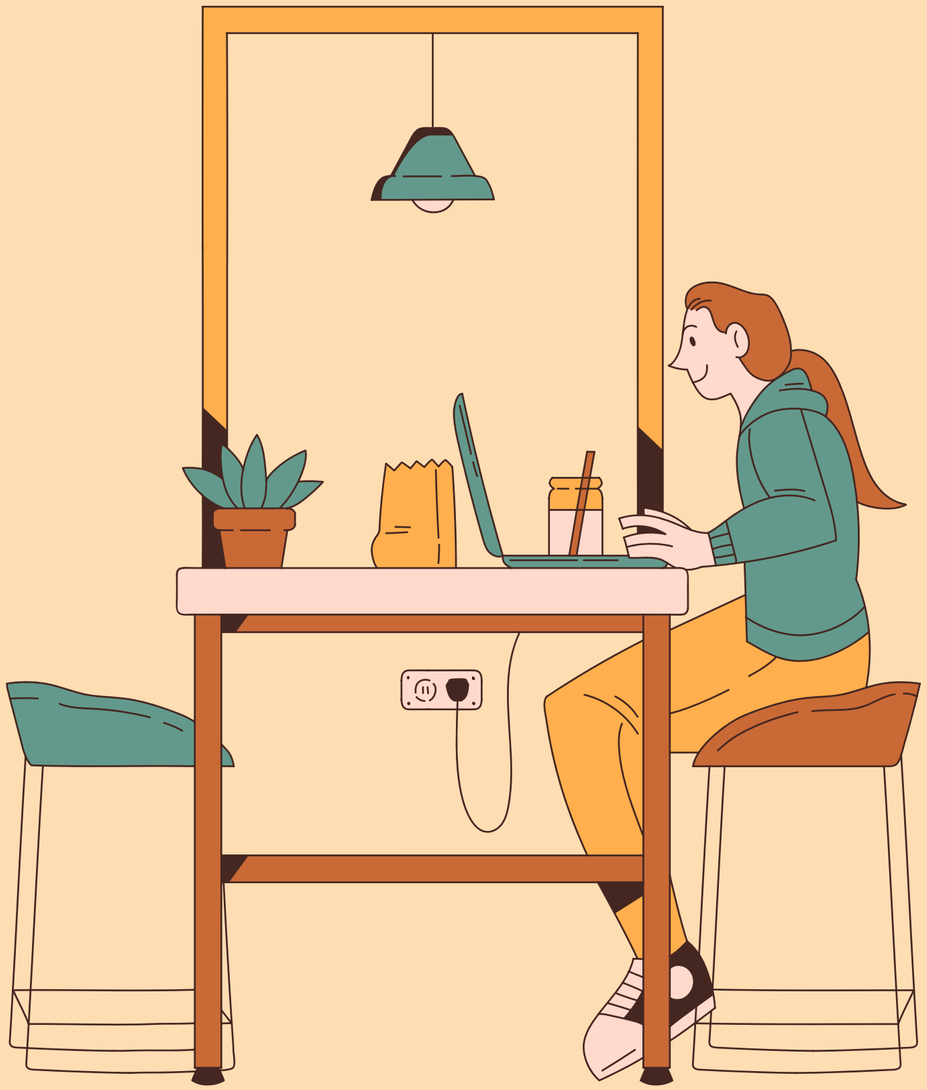
MUATH OTHMAN



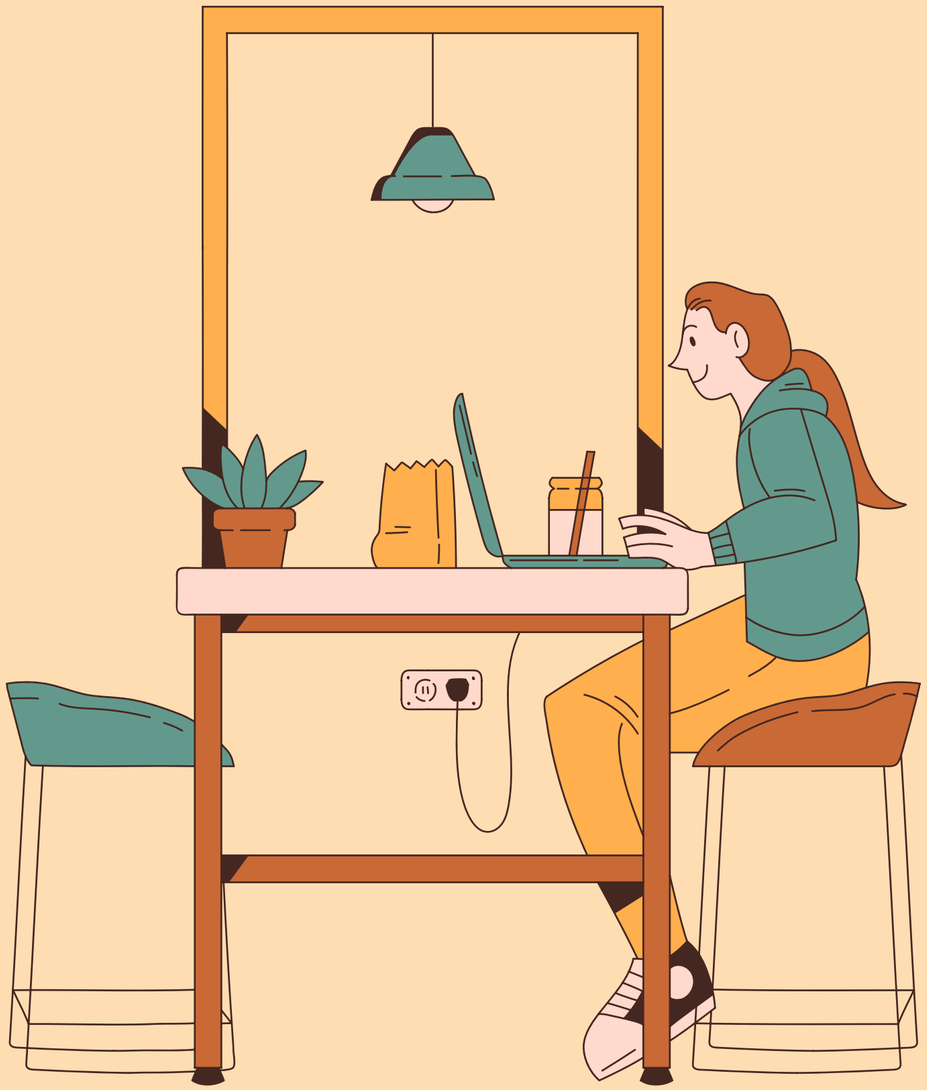
LET’S CHECK HOMEWORKS!



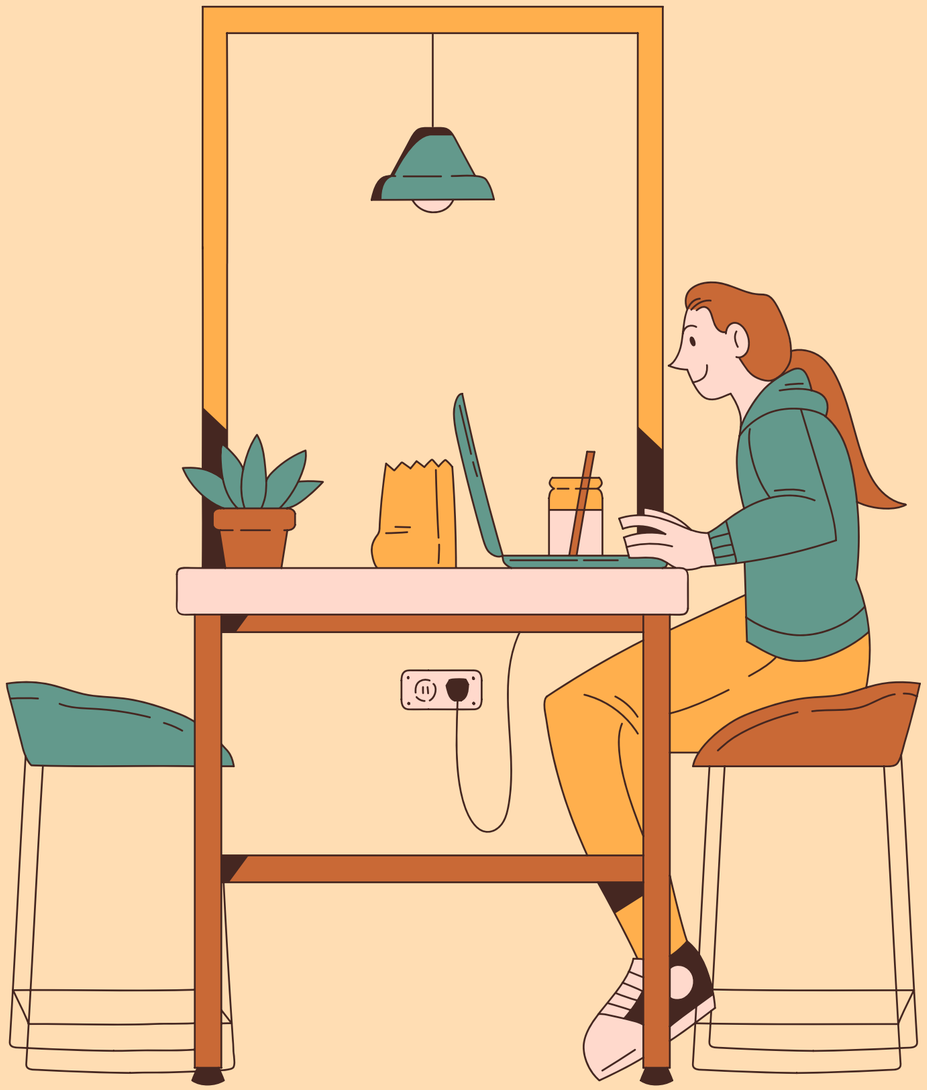
NEXT WEEK'S LECTURE



ASSISTANT TIME



LET’S TURN OFF AI!



LEARNING OBJECTIVES

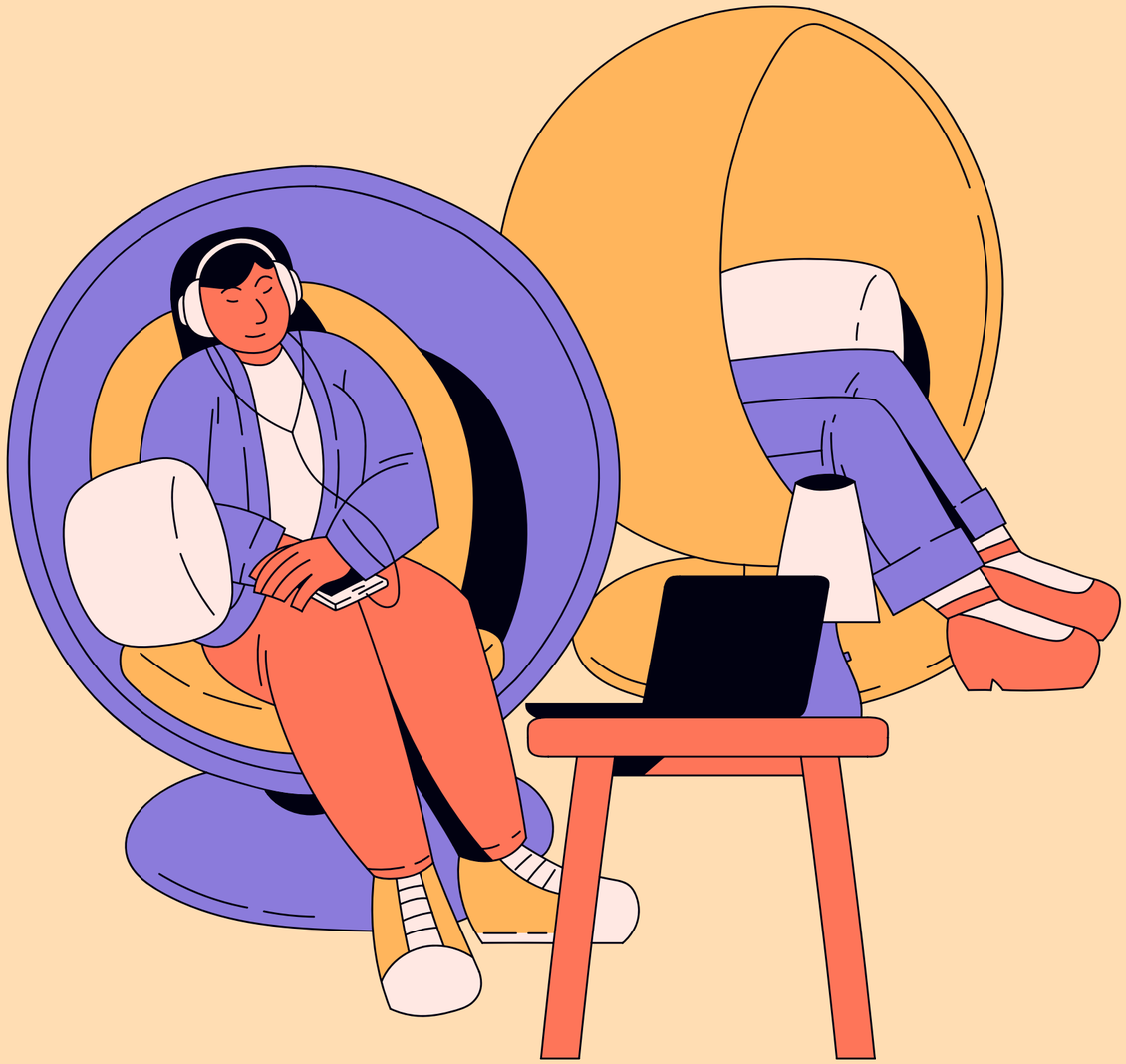
- Understand the concept of repetition using while loops
- Write Python programs using while loops
- Distinguish between fixed and user-controlled repetitions

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

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.")
```

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
```

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.")
```

What happens here?

EXERCISE