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UNLOCKING WHILE LOOPS IN PYTHON

8799141678

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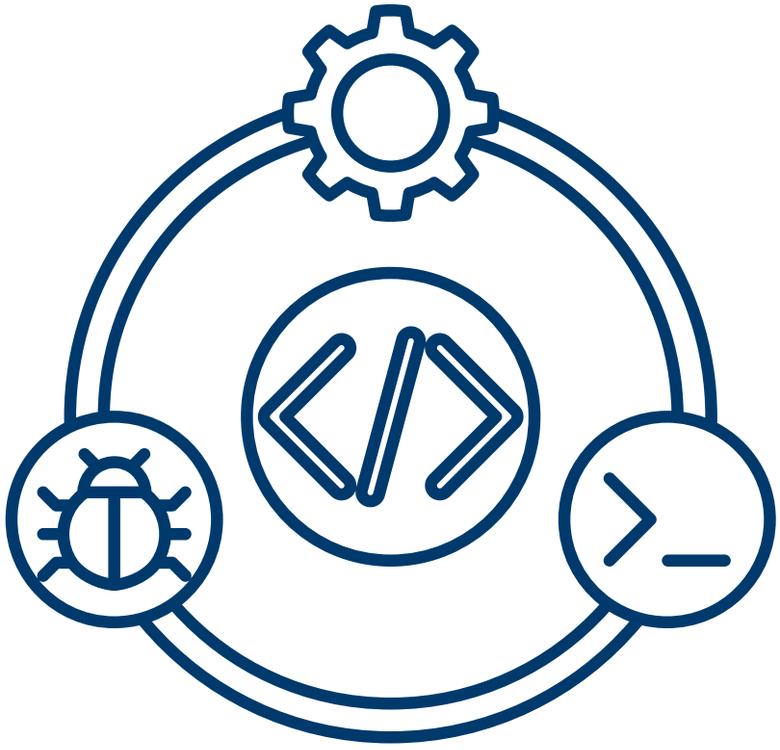
WHAT IS A WHILE LOOP?

A WHILE LOOP REPEATEDLY EXECUTES A BLOCK OF CODE AS LONG AS A SPECIFIED CONDITION IS TRUE. IT'S GREAT FOR SITUATIONS WHERE YOU DON'T KNOW HOW MANY TIMES YOU NEED TO ITERATE!



BASIC SYNTAX

HERE'S THE BASIC SYNTAX OF A WHILE LOOP:

```
while condition:
    # Code block to execute
```

EXAMPLE 1 - SIMPLE COUNTER

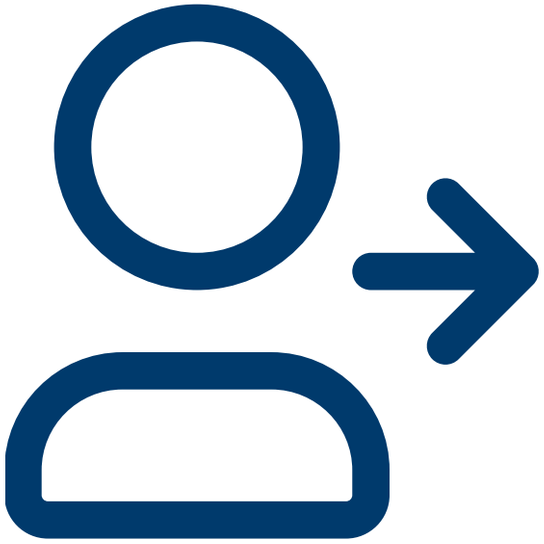
LET'S SEE A BASIC EXAMPLE OF A COUNTER:

```
count = 0
while count < 5:
    print(count)
    count += 1
Output:

Copy code
0
1
2
3
4
```

EXAMPLE 2 - USER INPUT

YOU CAN USE WHILE LOOPS TO TAKE USER INPUT UNTIL A CONDITION IS MET:



```
user_input = ""
while user_input.lower() != "exit":
    user_input = input("Type 'exit' to quit: ")
```

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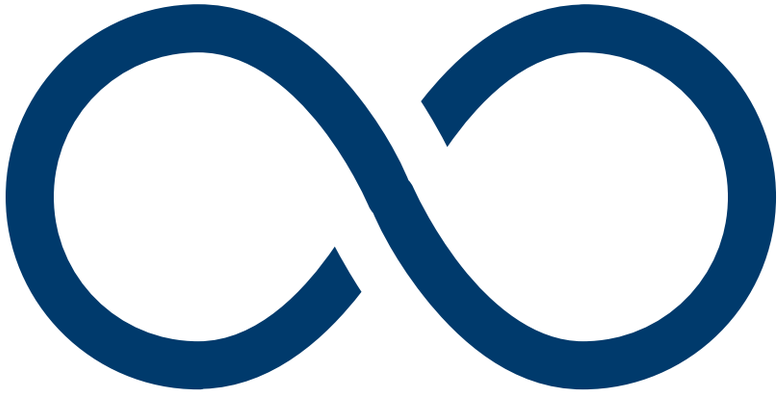
INFINITE LOOPS

BE CAREFUL! IF THE CONDITION NEVER BECOMES FALSE, YOU'LL CREATE AN INFINITE LOOP. ALWAYS ENSURE YOUR LOOP CAN EXIT.



```
# Example of an infinite loop (don't run this!)
while True:
    print("This will run forever!")
```

PRACTICAL EXAMPLE - GUESSING GAME

LET'S CREATE A SIMPLE GUESSING GAME!

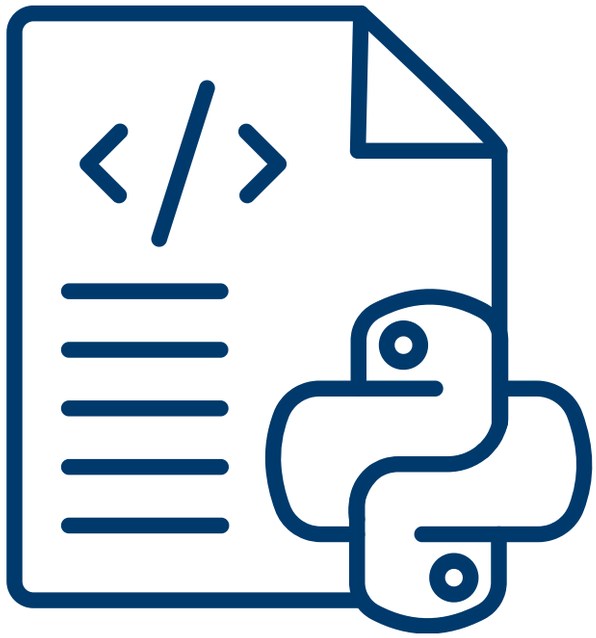
```
secret_number = 7
guess = 0

while guess != secret_number:
    guess = int(input("Guess the number (1-10): "))
    if guess < secret_number:
        print("Too low!")
    elif guess > secret_number:
        print("Too high!")

print("Congratulations! You've guessed it!")
```

CONCLUSION

WHILE LOOPS ARE POWERFUL FOR REPETITIVE TASKS WHEN THE NUMBER OF ITERATIONS ISN'T KNOWN IN ADVANCE. USE THEM WISELY!



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