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Loops

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Introduction to Loops

- Loops let your program repeat actions again and again!
- They save time – you don't have to write the same code over and over.

Introduction to **for** Loops

- A for loop lets you repeat something a set number of times.
- It's like saying:
 - “For each time in this list, do this!”

Basic For Structure

for variable in sequence:

Statement 1 # Code to execute

Printing number from 1 to 5

```
for i in range(1,5):  
    print(i)
```

Introduction to **while** Loops

- A for loop lets you repeat something until a certain condition is fulfilled
- It's like saying:
 - “Do this until this happens”

Basic While Structure

while condition:

Statement 1 # Code to execute

Printing number from 1 to 5

i = 0

while i<5:

 print(i)

 i+=1

Common Mistakes in **while** loops

Infinite loops: When using while loop, infinite loops can be created if the condition never becomes False.

Example of Infinite Loop:

countdown = 10

while countdown > 0:

 print(countdown)

countdown is not updated!

Lets Practice

Write a program to print all even numbers between 1 and 20.

Write a program that keeps asking the user for a password until they enter "Python123".

Create a program to print numbers from 1 to 10 (for loop), then reverse-count from 10 to 1(while loop).