Introduction to Computer Programming
CSCI-UA 2

Repetition Structures
For-Loops and While-Loops
Loops

Introduce nonlinearity into programs
Repeatedly execute blocks of code
For-loops
While-loops
For-Loops

Repeats a block of code a specified number of times

Like printing a list of numbers

```python
for i in range(n):
    print(i)
```
While-Loops

While loops are more flexible, but also more error-prone

Must initialize variable and set increment

\[ i = 0 \]

\[ \text{while } i < 10: \]
\[ \quad \text{print}(i) \]
\[ \quad i = i + 1 \]
String Formatting Expressions

Python defines the % operator to work on strings

When applied to strings, % provides a compact way to code multiple string substitutions

Operator on left is conversion target

On the right, provide the object you want Python to insert in its place

print('%d %s' % (i, 'str'))
**Break Statement**

- Lets you jump out of a loop from within the loop body
- Allows you to skip over unnecessary statements
- `break`
- Should only be used when it makes your code simpler

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