



Iteration

COMP16321 – Introduction to Programming 1

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Iteration

‘Is a process wherein a set of instructions or structures are repeated in a sequence a specified number of times or until a condition is met.’

Iteration or Looping

Infinite Loops

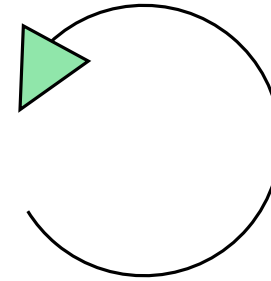
- Repeat Forever

Count-Controlled Loops

- Repeat # Times

Condition-Controlled Loops

- Repeat Until Condition Met

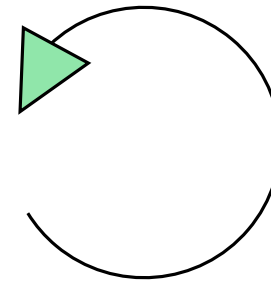


While

For

While Loops

```
while <test>:  
    <statements1>  
else:  
    <statements2>
```



```
break    - causes an immediate exit from a loop  
continue - jumps to the top of a loop  
pass     - an empty place holder  
else     - runs is and only if the loop exits normally
```

While Loops

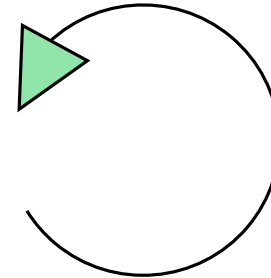
```
while <test1>:
    <statements1>
    if <test2>: break          # exit loop now, skip else
    if <test3>: continue      # go to top of loop
else:
    <statements2>            # run if break not hit
```

For Loops

```
for <target> in <object>:  
    <statements1>  
else:  
    <statements2>
```

Also uses:

```
break  
continue  
else
```



For Loops

```
for <target> in <object>:      # object item target
    <statements1>
    if <test2>: break          # exit loop now, skip else
    if <test3>: continue       # go to top of loop
else:
    <statements2>             # run if break not hit
```