

Loops

Repeated steps

Increment and decrement

`x = x + 1`

`x += 1`

`x = x - 1`

`x -= 1`

`a *= 2`

`a /= 10`

`a %= 3`

`a **= 2`

`a = a * 2`

`a = a / 10`

`a = a % 3`

`a = a ** 2`

Indefinite loops (`while`)

`while` *condition:*

statement

statement

```
a = 0 #iteration variable
while a < 5:
    print 'Hello'
    a += 1
```

Infinite loops

```
a = 0
while True:
    print 'Hello'
    a += 1
    if a == 5:
        break
```

Boolean expressions

- **Constants**

- True
- False

- **Expressions**

- `1 < 2`
- `a > 0`

- **Type 'bool'**

```
>>>type(True)
<type 'bool'>
>>>type(1+2==3)
<type 'bool'>
```

Statement `continue`

```
a = 0
while a < 10:
    a += 1
    if a % 2 == 0:
        continue
    print a
```

Changing iteration variable more than by 1

```
a = 1
while a < 10:
    print a
    a += 2
```

Definite loops (for)

for *variable in list:*

statement

statement

```
for a in [1, 2, 3, 4, 5]: #a is iteration variable
    print 'Hello'
```

```
students = ['Joseph', 'Glenn', 'Sally']
for student in students:
    print 'Good morning,', student
print 'Done!'
```


Constant value None

```
>>>type (None)
<type 'NoneType'>
```

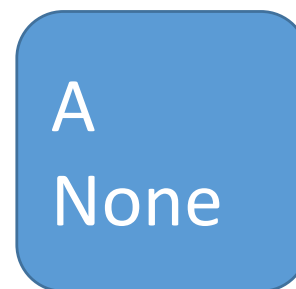
- Variable doesn't have a value

```
largest_so_far = None
```

- Function doesn't return a value

```
def printA():
    print 'A'
```

```
print printA()
```



Operator `is`

- can be used in logical expressions
- “is the same as”
- similar to, but stronger than `==`
- it is always better to use `==`

```
>>> 4 == 4.0
```

```
True
```

```
>>> 4 is 4.0
```

```
False
```

- `is not` is similar to `!=`

Reserwed words

while

break

continue

for

in

True

False

None

is

Homework (part of the multiplication table, number of days in months)

Questions?

Test 4

Questions?

Exercises

<https://courses.cs.ut.ee/2017/nkp/fall/Main/During4>