Syntax - What are the legal expressions

"Jens cat Misse"

Static Semantics

"My chair is Erik"

Full Semantics - What does the program mean

OBJECTS - scalar objects

Numbers

3 - integer

3.023 - floating point

Strings

'Alexander Eiler, 2016-10-03'

Bool

'True' and 'False'

None type

None

CASTING - change object type

operations

Numbers

*, +, -, /

Variables

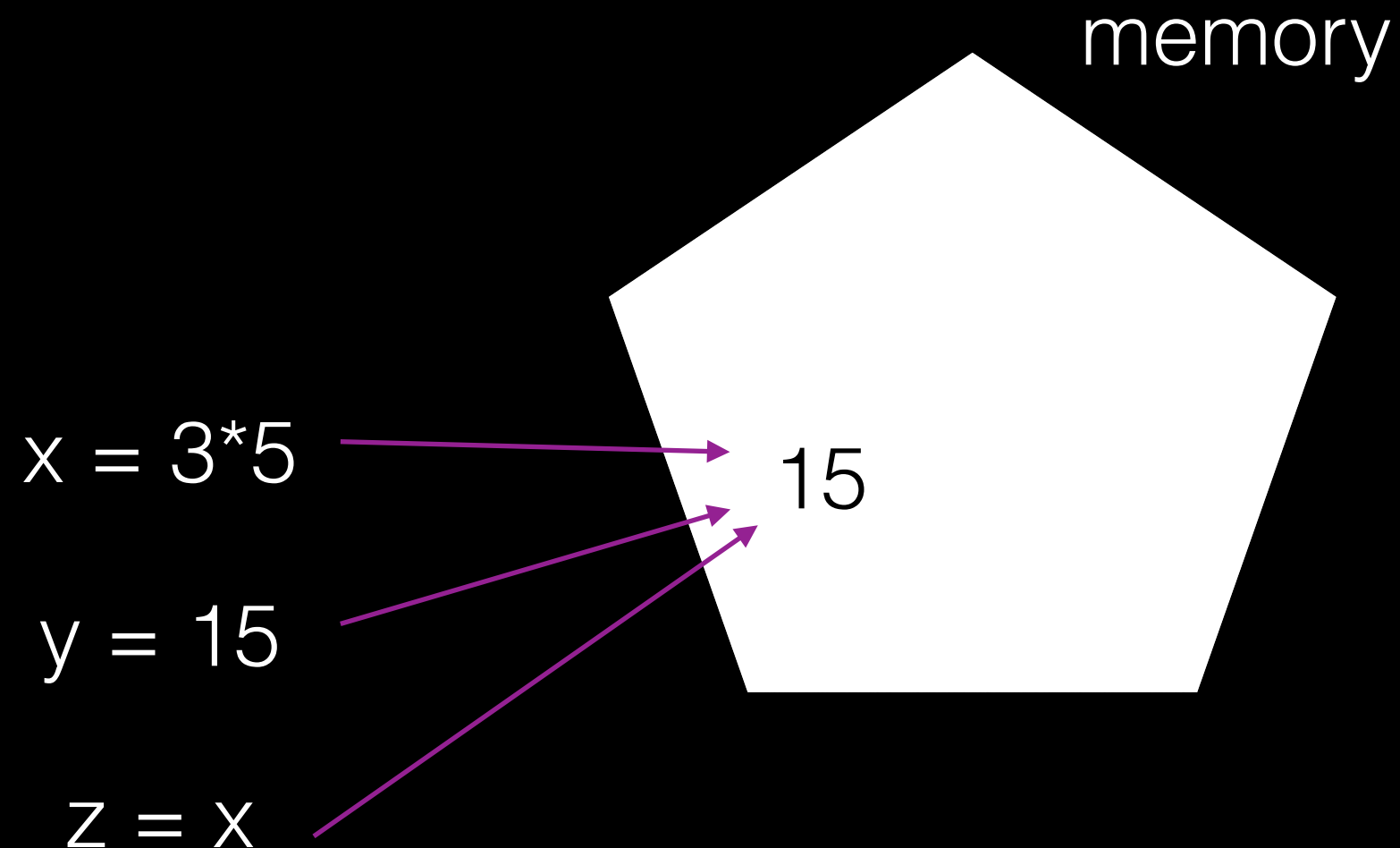type checking - not as strong as we would like it

type disciple

Operator precedence

** >> *,/ >> +,-

use parenthesis just to make sure

operator precedence

memory

x = 3*5

15

y = 15

z = x

the value of a variable decides its type

variables are an important way to document

keywords excluded

straight line programs

branching programs

syntax

codon initiates a block of instructions

if <some test>:
    |
    |block of instructions
    |
    |
else:
    |
    |block of instructions
    |
    |

```
if <some test>:

    |
    |block of instructions


elif:

    |
    |block of instructions
elif:

    |
    |block of instructions


else:

    |
    |block of instructions
```

while loop

```
while <condition>:
    |
    |block of instructions
```

for loop

```
for <variable> in <collection>:
    |
    |block of instructions
```

for

known number of iterations

can en early via break

uses a counter

can rewrite a for loop
using a while loop

while

unbounded number of
iterations

can end early via break

can use counter
but needs initiation and
incrementation

may not be able
to rewrite while loop
with for loop

BREAK