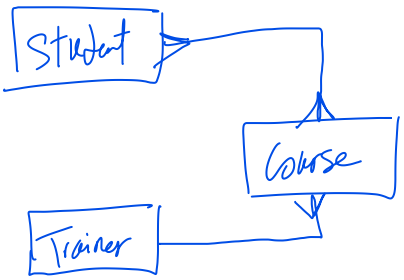
* Web Developer
* Data Science
* Network / security

Intro to Programming Using Python
- Input/output
- Variables / Datatypes
- Expressions / functions
- if-stat.
- Loops (for, while)
- lists / dicts
- functions
- OOP

File R/W
Connect DB
GUI
(HR System)



* Python
* Pycharm

Errors
* syntax
* Runtime
* Logic

input
storage
process
output

salary → variable
7000 — int / float / str

annual_salary = salary * 12

full_mark: 25
mark: 23

$$pct = \frac{mark}{full\_mark} * 100$$

92

Math operators

1. **
2. *, /, //, %
3. +, -

$5^2 \rightarrow 5 ** 2 \rightarrow 25$

$5/2 \rightarrow 2.5$ | $5//2 \rightarrow 2$

$3/2 \rightarrow 1.5$ | $3//2 \rightarrow 1$

$7\%3 \rightarrow 1$ | $11\%3 \rightarrow 2$

$10\%2 \rightarrow 0$

2 + 3 / 3 (1, 3)

2 * 3 / 3 (2, 6)

Assignment operator

x = 5

x = 3

x = x + 5

x += 2

x *= 3

x -= 5

x
5
3
8
10
30
25

Common functions

max(5,3,2) → 5

min(5,3,2) → 2

round(19.6) → 20

round(19.6666, 2) → 19.67

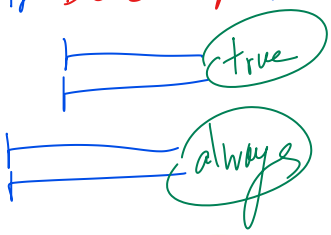
randint(0, 10) = 5, 9, 2

weight: 68
height: 182

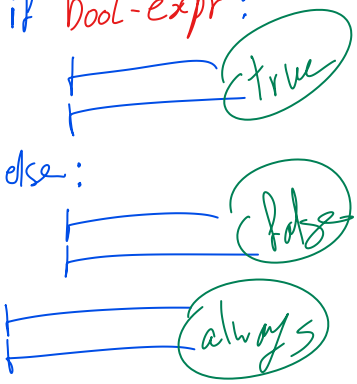
$$bmi = \frac{weight}{(height/100)^2}$$

20.52...

if bool-expr:



if bool-expr:



Relational Operators

>, <, >=, <=

==, !=

x = 5

x == 3

false

x != 3

True

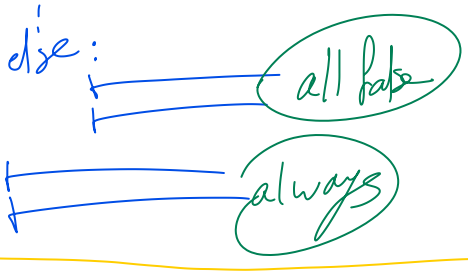
if bool-expr:

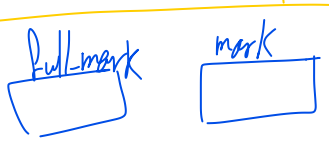
elif bool-expr:

elif bool-expr:

⋮

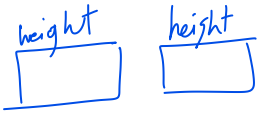
else:





$$pct = \frac{mark}{full\_mark} * 100$$

- >85 → Excellent
- >75 V. Good
- >65 Good
- >=50 Pass
- Fail



$$bmi = \frac{weight}{(height/100)^2}$$

- <18.5 Underweight
- <25 Normal
- <30 Overweight
- Obese

Logical Operators

bool-expr and bool-expr

bool-expr or bool-expr

not bool-expr

1-5 → work-day

6,7 → off-day

else → Invalid

7,1-4 → work-day

5,6 → off-day

else → Invalid

What's 5 * 7?

→ 35 ↙ Correct

→ 70 ↘ Wrong

randint(0, 10)

x = "Hello"

-5	-4	-3	-2	-1
H	e	l	l	o
0	1	2	3	4

print(x) → Hello

print(x[0]) → H

print(x[-5]) → H

print(x[0:4]) → Hell

print(len(x)) → 5

x. → methods

xyz1234

[:3] [3:]

① length 4-7 ✓ valid

② Part 1 alpha

③ Part 2 digits

05XXXXXXX

① length 10

② start with 05

③ all digits

ddd-dd-dddd

① Positions 3, 6 are '-'

② length without dashes is 9

③ all other positions are digits

chr(-)

A → 65

B → 66

⋮

Z → 90

ord(-)

randint(-,-)