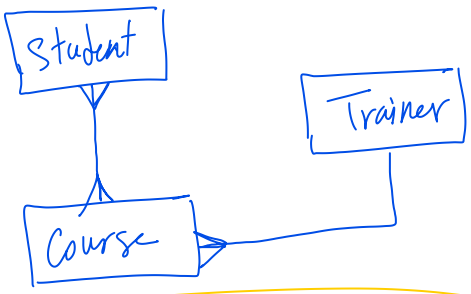
* Web APP
* Data science
* Network / Security → DevNet

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

Files 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 → 5**2 → 25
5/2 → 2.5
5//2 → 2

7 % 3 → 1
11 % 3 → 2
10 % 2 → 0

4 + 6/2 → 7
6/2 * 3 → 9

Assignment Operator

x = 5
x = 3
x = x + 5
x += 2
x *= 3
x == 5

x: 5, 3, 8, 10, 30, 25

Common Functions

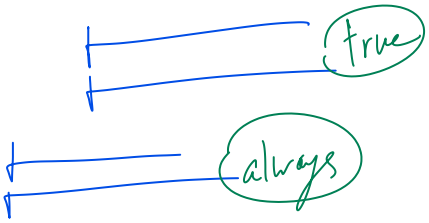
max(2,5,3) → 5
min(2,5,3) → 2
round(19.6) → 20
round(19.6666, 2) → 19.67
randint(0, 10) → 2, 9, 4, 1

weight = 68
height = 182

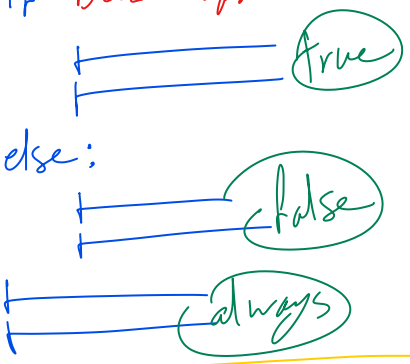
$$bmi = \frac{weight}{(height/100)^2}$$

20.52...

if bool-expr :



if bool-expr :



Relational Operators:

>, >=, <, <=

==, !=

x = 5

x == 3

false

x != 3

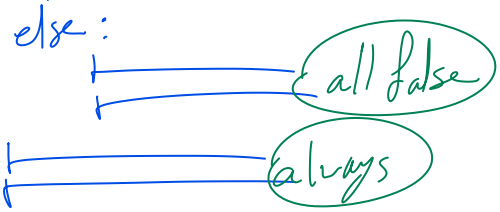
true

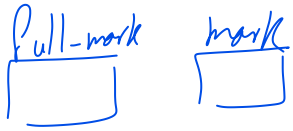
if bool-expr :

elif bool-expr :

elif bool-expr :

else:





$$pct = \frac{mark}{full_mark} * 100$$

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

Logical Operators

bool-expr and bool-expr

or

not bool-expr

1-5 => work-day

6,7 => off-day

else => Invalid

7,1-4 => work-day

5,6 => off-day

else => Invalid

x = "Hello"

print(x) -> Hello

print(x[0]) -> H

print(x[-1]) -> o

print(len(x)) -> 5

x.

xyz1234

[:3] [3:]

1. length 4-7
2. Part 1 alpha
3. Part 2 digits

} Valid

05XXXXXXX

1. length 10
2. starts with 05
3. all digits

} Valid

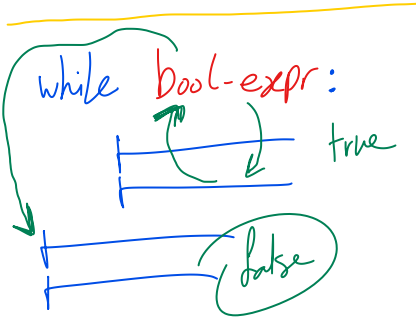
SSN

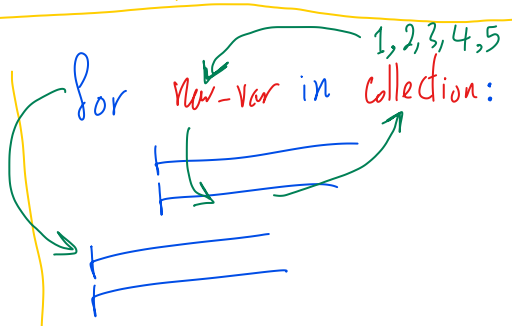
ddd-dd-dddd

1. length without "-" 9
2. "-" at positions 3, 6
3. all other positions digits

Ascii:

randint(65, 90)





range(1, 10, 2) → 1, 3, 5, 7, 9

range(1, 10) → 1, 2, 3, ---, 9

range(10) → 0, 1, 2, ---, 9

what's 5 * 3 ?

» 15

what's 7 * 7 ?

» 49

what's 2 * 3 ?

»

⋮

» 16

Game Over!!

what's 5 * 3 ?

» 17

Try again, what's 5 * 3 ?

» 20

Try again, what's 5 * 3 ?

»

⋮

» 15

Correct

Guess num btw 0-100

» 10

Go up

» 50

Go down

» 40

Go down

» 20

Go up

» 29

You Guessed Right!!

number: 29

guess: ~~10~~, ~~50~~, ~~40~~, ~~20~~, 29