web Development ⟵
Data Science ⟵
Network/Security

5W
4d
2hr

Intro to Programming
Using Python

→ Input/output
→ Variables/Datatypes
→ Expressions/functions
→ if-stat.
→ Loops (for, while)
→ List, dict, --.
→ functions
→ OOP

File R/W ⟵
Connect DB ⟵
GUI ⟵
(HR System)

Student

Trainer

Course
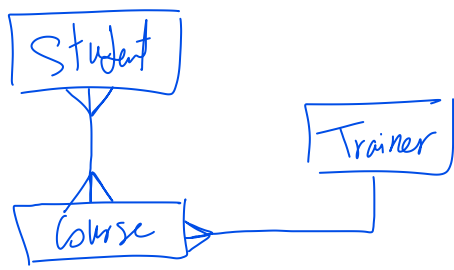
Programs:

* Python
* PyCharm

Errors:

* Syntax
* Runtime
* Logic

Input
Storage
Process
Output

salary → Variable
┌────┐   ⟍ int
│7000│   ⟨ float
└────┘   str

annual_salary = salary * 12

mark
┌──┐
│23│
└──┘

full_mark
┌──┐
│25│
└──┘

$Pct = \dfrac{mark}{full\_mark} * 100$

92

Math Operators
① **
② *, /, //, %
③ +, -

$5^2 \Rightarrow 5**2 \Rightarrow 25$
$5/2 \Rightarrow 2.5$
$3/2 \Rightarrow 1.5$

$5//2 \Rightarrow 2$
$3//2 \Rightarrow 1$

$7\%3 \Rightarrow 1$
$11\%3 \Rightarrow 2$
$10\%2 \Rightarrow 0$

2 + 3/3   3
         1

3/3 * 2
 1   2

Assignment Operator

$x = 5$

$x = 3$

$x = (x + 5)$

$x += 2$

$x + 5$

$x *= 3$

$x -= 5$

x
| 5 |
3
8
10
30
25

Common functions

$max(2, 5, 3) \Rightarrow 5$

$min(2, 5, 3) \Rightarrow 2$

$round(19.647) \Rightarrow 20$

$round(19.647, 1) \Rightarrow 19.6$

$randint(0, 10) \rightarrow 2$
$\rightarrow 7$
$\downarrow 4$

---

weight | height
| 68 | | 182 |

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

20.52...

```
if bool-expr :
        ────── (True)
    ────── (always)
```

```
if bool-expr :
        ────── (true)
    else :
        ────── (false)
    ────── (always)
```

Relational Operators

$>, >=, <, <=$

$==, !=$

$x = 5$

x
| 5 |

$x == 3$
False

$x != 3$
True

```
if bool-expr :
        ────── (T)
elif bool-expr :
        ────── (F,T)
elif bool-expr :
        ────── (F,F,T)
    .
    .
else :
        ────── (all false)
    ────── (always)
```

weight | height
| | | |

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

< 18.5 Underweight

< 25 Normal

< 30 Overweight

Obese