Python Programming
Selection 1

Mostafa S. Ibrahim
Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher
PhD from Simon Fraser University - Canada
Bachelor / Msc from Cairo University - Egypt
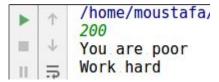Ex-(Software Engineer / ICPC World Finalist)

If **statement**

- Write a program that reads an integer salary
  - Then **If salary < 1000**,
    - print you are poor
  - Otherwise do nothing
  - End program with printing Work Hard
- Python provides us with the if-condition
- If relational condition:
  - Body

```
3   salary = int(input())
4
5   if salary < 1000:
6       print('You are poor')
7
8   print('Work hard')
```

```
▶ ↑   /home/moustafa,
■ ↓   200
        You are poor
Ⅱ ⇄   Work hard
```

```
▶ ↑   /home/mousta
■ ↓   3000
        Work hard
```

Code block

- Indentation refers to the spaces at the beginning of a code line
- Code written at the **same** indentation level = **a block of code**
  - Line 8, 10 = same block level
  - Line 11, 12= same block level
- you must indent each line of the block by the same amount.
  - Otherwise: *Indentation error*

```
 8    is_poor = int(input()) < 1000
 9
10    if is_poor < 1000:
11        print('You are poor')
12        print("Don't feel sad")
13
14
```

```
/home/moustafa/s
200
You are poor
Don't feel sad
```

Variable scope

- The part of a program where a variable is **accessible** is called its **scope**
    - We will learn more in Functions
- Based on the input: line 4 may or may not be executed
- Using the variable outside the function might be problematic
- *Coming from C++: don't write C++ using Python*

```
2
3    if int(input()) < 1000:
4        lucky_number = 13
5
6    # lucky_number will exist
7    # ONLY if line 4 is executed
8    print(lucky_number)
9
```

```
/home
200
13
```

```
/home/moustafa/system-installs/anaconda3/envs/
3000
Traceback (most recent call last):
  File "/home/moustafa/00Udemy/CPP/private_git
    print(lucky_number)
NameError: name 'lucky_number' is not defined
```

Common coding mistakes

- Forget the : in end of the if statement
- Multiple lines per a block with different indentation
- Variables are accessed after the if-condition, but never assigned

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."