

1.

# INTRODUCTION TO PROGRAMMING AND PYTHON



# Welcome!

Welcome to the Python Hero Academy.

In this course, you'll learn programming with python from basics to advanced.

Take a **real college-like** course without the limitations of one!

```
q1.py
1 class Course:
2     def __init__(self, name , language):
3         print("Hello {} !".format(name))
4         self.name = name
5         self.language = language
6
7     def ready(self):
8         self.begin()
9
10    def begin(self):
11        #Lets Start!
12
13    if __name__ == "__main__":
14        i = input()
15        mylist = [x ** 3 for x in range(3)]
16        for j in range(0 , 3):
17            mylist.append(29)
18
19        Welcoming_sentence = " Welcome to this Course! 12345"
20
21        for letter in Welcoming_sentence:
22            if letter in "0123456789":
23                continue
24            else:
25                print(letter , end = "")
26
27        MyCourse = Course("My Name" , "Python")
28        MyCourse.ready()
```

**“Everybody should learn how to program a computer, because it teaches you how to think.”**

—Steve Jobs

# Contents



1

## What is a programming language?

*A very simple description of what programming languages are*

2

## High level vs Low level languages

*What they are and a simple comparison between them*

3

## Interpreted vs Compiled languages

*What they are and a simple comparison between them*

# What is a programming language?

---

- A language (like any other languages)
- Contains vocabulary and grammar rules
- Many different divisions for programming languages such as
  - High level vs Low level languages
  - Compiled vs Interpreted
  - Imperative vs Declarative
  - Functional Programming Language, Object-oriented Programming Language, Logic Programming Language and etc.

# Contents

1

## What is a programming language?

*A very simple description of what programming languages are*



2

## High level vs Low level languages

*What they are and a simple comparison between them*

3

## Interpreted vs Compiled languages

*What they are and a simple comparison between them*

# High level vs low level languages

## High level languages

1. Closer to our understanding
2. Easier to work with
3. Slower because Must be translated to low level languages
4. Java, C++, Python and etc.
5. They're divided to two groups
  - Interpreted languages
  - Compiled languages

## Low level languages

1. mostly describes machine's functionality
2. Assembly or any machine's code.

# Contents

1

## What is a programming language?

*A very simple description of what programming languages are*

2

## High level vs Low level languages

*What they are and a simple comparison between them*

3

## Interpreted vs Compiled languages

*What they are and a simple comparison between them*





# Interpreted vs Compiled languages

---

- A bit vague... → A language can be translated by both methods
- Each language → originally designed to be translated by one of them
- Both high level
- In a compiled language:
  - The target machine directly translates the program
- In an interpreted language:
  - The source code is not directly translated
  - Another program, aka the interpreter, reads and executes the code
- Ancient Greek translator example

# Interpreted vs Compiled languages

---

- An Interpreted language compared to a Compiled one is:
  - Slower (-)
  - Less efficient(-)
  - Gives less control over memory and processing unit(-)
  - Easier to use(+)
  - Easier to understand and design algorithms (+)

✓ Python is a high-level Interpreted language.

*Thanks!*

*Got any questions or suggestions?*

*Here's some contact info:*

*@KMasoumi*

