

# Python Bootcamp {2019}



## Roadmap :

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## Highlights

**The bootcamp duration is 4 weeks.**

During this period the student will learn Python through:

- **80 exercises**
- **12 mini projects**

For each week :

- **20 exercises**
- **3 mini projects**

The difficulty will quickly increase

At the end of the bootcamp the students will have covered all the fundamentals of Python language and be able to work on concrete projects.

## Curriculum

Each student will have a score from 0 to 250 for each week

Each student will have a score from 0 to 1000 at the end of the Bootcamp:

One exercise completed give 5 point / One project completed give 50 points.

The student will also have comments on their curriculum about their qualities such as: **code quality / code readability / english / ability to explain**

**⚠ Warning ⚠ : The bootcamp will be intense, and the students might have difficulties to finish all the exercises and projects. However, this is on purpose to allow them to surpass their limits.**

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## [Week 1] Introduction

### Focus of the week :

- Introduction to Python (Quick overview)
- Setup and 'Hello World' first program
- Introduction to the language syntax
- Variables
- Strings
- Numbers
- Operators
- Conditions ( If...Elif...Else )
- Loops
- Input
- Random

### Projects :

- [MINI PROJECT 001]
- [MINI PROJECT 002]
- [MINI PROJECT 003]

### Curriculum :

After this first week, the student is now able to create basics Python program and manipulate data such as text and numbers, create conditional flow and loops.

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## [Week 2] Fundamental basics

### Focus of the week :

- Functions
- Lists
- Tuples
- Sets
- Dictionaries
- Dates

### Projects :

- [MINI PROJECT 004]
- [MINI PROJECT 005]
- [MINI PROJECT 006]

### Curriculum :

The student is now able to create clear code with functions and know how to use advanced data structure such as Lists / Tuples / Sets and Dictionaries that will be mandatory for the next steps.

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## [Week 3] Advanced basics

### Focus of the week :

- Read Files
- Write Files
- Append Files
- Delete Files
- API Requests [GET/POST]
- JSON Creation
- JSON Parsing
- Error Handling (Try...Except)

### Projects :

- [MINI PROJECT 007]
- [MINI PROJECT 008]
- [MINI PROJECT 009]

### Curriculum :

After this third week, the student is now able to handle file [READ/WRITE/APPEND/DELETE] also perform API Requests [GET/POST] and deal with JSON data. This week will be the harder of the entire Bootcamp but hopefully the Final week will allow to review all of it.

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## [Week 4] Final week

### Focus of the week :

- Classes / Objects
- Inheritance
- Modules
- Lambda
- RegEX
- PIP

### Projects :

- [MINI PROJECT 010]
- [MINI PROJECT 011]
- [MINI PROJECT 012]

### Curriculum :

During this week, the student did learn about **Classes/Objects** and **Inheritance**, that is a **MUST** in **OOP Programming (Object Oriented Programming)**. Also, the student learn how to create is own modules that he will be able to reuse in the future. **Lambda** and **Regex** are quite complex and take long time to master but it's important that the student know that it's exist and what is the purpose. Finally **PIP** is very useful when it comes to download new dependencies that allow the developer to leverage from the **open-source community**

### Conclusion :

There are a lot to learn and remember during this 4 week Bootcamp session, but now the student get a better about the global scope of Python programming language. With the different mini projects done during the Bootcamp, the student can be efficient and produce code that suit to "real world needs".