

# PYTHON ROADMAP FROM ZERO TO HERO

## REQUIREMENTS

- Start learning Python [with this 100 Days of Code playlist](#). Learn the basics of Python. [Download my Hand Written Python Notes from here](#)
- Basic Syntax
- Modules & PIP
- Variables & Datatypes
- Conditionals and Loops
- Functions & Recursion
- List, Tuple, Sets, Dictionaries
- File I/O
- If you prefer to learn in English, there is [this awesome course](#) on Udemy
- Also, you can check this 12 hour [one shot video in English](#).
- Advanced Python
  - Iterators
  - Regex
  - Decorators
  - Lambdas
  - List Comprehensions
  - Exception Handling
- Object Oriented Programming
  - Classes & Objects
  - Methods
  - Inheritance
  - Projects based on Oops.
- Data Structures & Algorithms – You don't have to master DSA in the beginning, just have some basic idea of:
  - Time Complexity
  - Arrays
  - Linked lists
  - Stacks
  - Queues
  - Binary Search Trees
  - Sorting Algorithms
- ML/DS – If you want to transition to Data Science and AI/ML, focus on these topics once you have some good hold of Python:
  - Start learning Data Science from this book [Python for Data Analysis by Wes MC Kinny](#). This book also has a Python refresher chapter.
  - Grab a copy of [this book](#): Hands on ML with Scikit-learn and Tensorflow (Author of this book also maintains constantly updating [Github Repo](#))
  - Watch this project video I created on an [End-to-End ML Project](#)
  - For learning basics of ML [this playlist will help you out](#).
  - TensorFlow

- Scikit Learn
- NumPy. Learn it from Numpy Quickstart guide [here](#).
- Pandas. Learn it from [10 Minutes of Pandas](#).
- Matplotlib / Seaborn from the official guide [here](#).
- Web Dev Frameworks
  - Flask – Checkout [this video](#).
  - Django – Checkout [this video](#).
  - Fast API – Checkout [this video](#).
- Game Libraries & GUI [Optional]
  - Learn [Tkinter](#) for making GUIs
  - Learn [PyGame](#) for making games in Python
- If you want to get into Web Scraping, learn:
  - Requests
  - BS4/ BeautifulSoup – Watch this video
  - Selenium
  - PyAutoGUI
- Tools to speedup your workflow
  - Git & GitHub – Checkout [this video](#).
  - Ollama – Check [this video](#) out.
  - GitHub Copilot – Get it [for free here](#).

## PROJECTS

Create some real-world projects like these and spend some time on these Python [Practice Programs](#).

- 5 Python [projects in one video](#).
- [JARVIS AI Agent](#).
- [Flappy Bird](#).
- [Indian Railway Announcement System](#).
- [End to End ML Project](#).
- [Umpire Decision Review System \(DRS\)](#).

## RESOURCES

- These are some comprehensive resources that I recommend you are learning Python.
  - [Python Documentation](#).
  - [Learning Python – O'Reilly](#).
  - [Python Course by Dr. Angela Yu](#) on Udemy