



Making a Discord Bot

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A brief glance at Python

- ❖ History of Python
- ❖ Why Python is so popular?
- ❖ A Simple Python Program
- ❖ The Python Interpreter
- ❖ Operations in Python
- ❖ Functions in Python

History of Python

Python was conceived in the **late 1980s** by **Guido van Rossum** at Centrum Wiskunde & Informatica (CWI) in the Netherlands as **a successor to the ABC language**, capable of exception handling and interfacing with the Amoeba operating system. Its implementation began in December 1989. Van Rossum shouldered sole responsibility for the project, as the lead developer, until 12 July 2018, when he announced his "permanent vacation" from his responsibilities as **Python's Benevolent Dictator For Life**, a title the Python community bestowed upon him to reflect his long-term commitment as the project's chief decision-maker.

Python and C

- ❖ Python is an interpreted language while C is compiled.
- ❖ Python is dynamically typed while C is statically typed.
- ❖ Python is an OOP language while C is a procedural language.
- ❖ Python has tons of inbuilt libraries while C being a simple and small, doesn't.
- ❖ Python, like C, is used in a many areas of work.

Why is Python so popular?

- ❖ Python has a ton of amazing libraries
- ❖ It's safe and reliable.
- ❖ A very active developer community
- ❖ Python script for almost anything for automation
- ❖ Open source software and API
- ❖ It's easy to learn and easier to express your ideas in python code than other languages.

A Simple Python Program

- ❖ Download the `1.pythonintro.py` file from the GitHub repo
- ❖ Open up CMD (command prompt) in the directory of the python program
- ❖ Execute the command: `python 1.pythonintro.py`
- ❖ You should be able to run the program without any errors!

The Python Interpreter

Lets jump to doing some stuff with the python interpreter.

- ❖ Arithmetic Operations
- ❖ String Operations
- ❖ Datatypes in Python
- ❖ Logical Operations
- ❖ Functions

Diving into the Bot

Check the GitHub Repo for more info on how to start the bot.

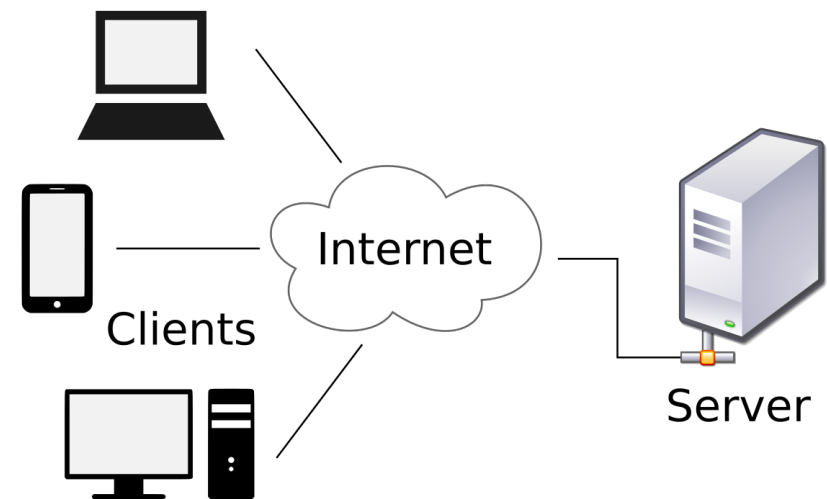
Introduction to APIs

Application Programming Interfaces (APIs) are constructs made available in programming languages to allow developers to create complex functionality more easily. They hide more complex code away from you, providing some easier syntax to use in its place.

https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Client-side_web_APIs/Introduction

Clients and Servers

In client/server computing, a server takes requests from client computers and shares its resources, applications and/or data with one or more client computers on the network, and a client is a computing device that initiates contact with a server in order to make use of a shareable resource.



Access Token

In computer systems, an access token contains the security credentials for a login session and identifies the user, the user's groups, the user's privileges, and, in some cases, a particular application. Typically one may be asked to enter the access token (e.g. 40 random characters) rather than the usual password (it therefore should be kept secret just like a password).

Decorators

- ❖ Functions are objects; they can be referenced to, passed to a variable and returned from other functions as well.
- ❖ Functions can be defined inside another function and can also be passed as argument to another function.
- ❖ A decorator is a function that takes another function and extends the behavior of the latter function without explicitly modifying it.
- ❖ In Decorators, functions are taken as the argument into another function and then called inside the wrapper function.

Asynchronous Programming

- ❖ Python is single threaded due to the GIL (Global Interpreter Lock)
- ❖ To circumvent this issue, asynchronous methods was used
- ❖ In a nutshell, **Asynchronous programming** is a means of parallel **programming** in which a unit of work runs separately from the main application thread and notifies the calling thread of its completion, failure or progress.
- ❖ <https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Asynchronous/Concepts>

Python is an experiment in how much freedom programmers need. Too much freedom and nobody can read another's code; too little and expressiveness is endangered.

- GUIDO VAN ROSSUM