Python API Tutorial

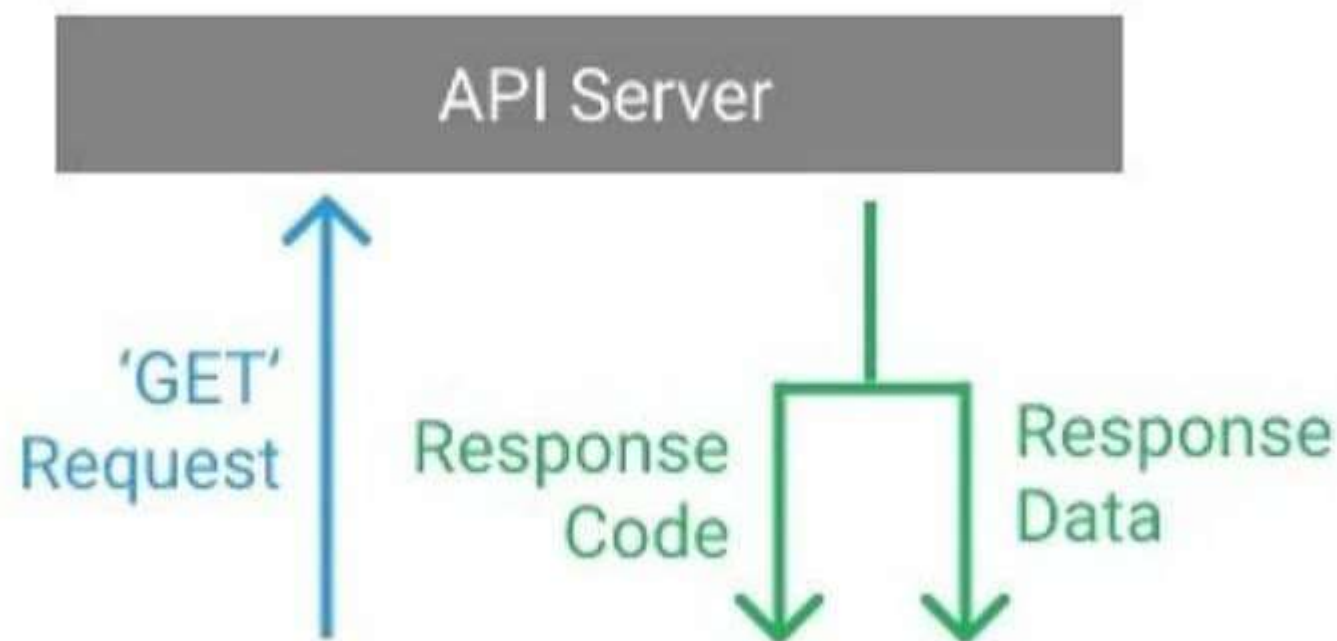## Getting Started with APIs

API

What is an API?

An API, or Application Programming Interface, is a intermediate between server and client that you can use to retrieve and send data to using code.

When we want to receive data from an API, we need to make a request. Requests are used all over the web.

For instance, when you visit a blog post, your web browser made a request to the blog website web server, which responded with the content of that web page.

API requests work in exactly the same way – you make a request to an API server for data, and it responds to your request.

Making API Requests in Python

In order to work with APIs in Python, we need tools that will make those requests. In Python, the most common library for making requests and working with APIs is the **requests library**.

Python requests library isn't part of the standard Python library, so you'll need to install it using pip command.

```
pip install requests
```

Making Our First API Request

There are many different types of requests. The most commonly used one, a **GET request**, is used to retrieve data and in this post we are only discussing the GET request.
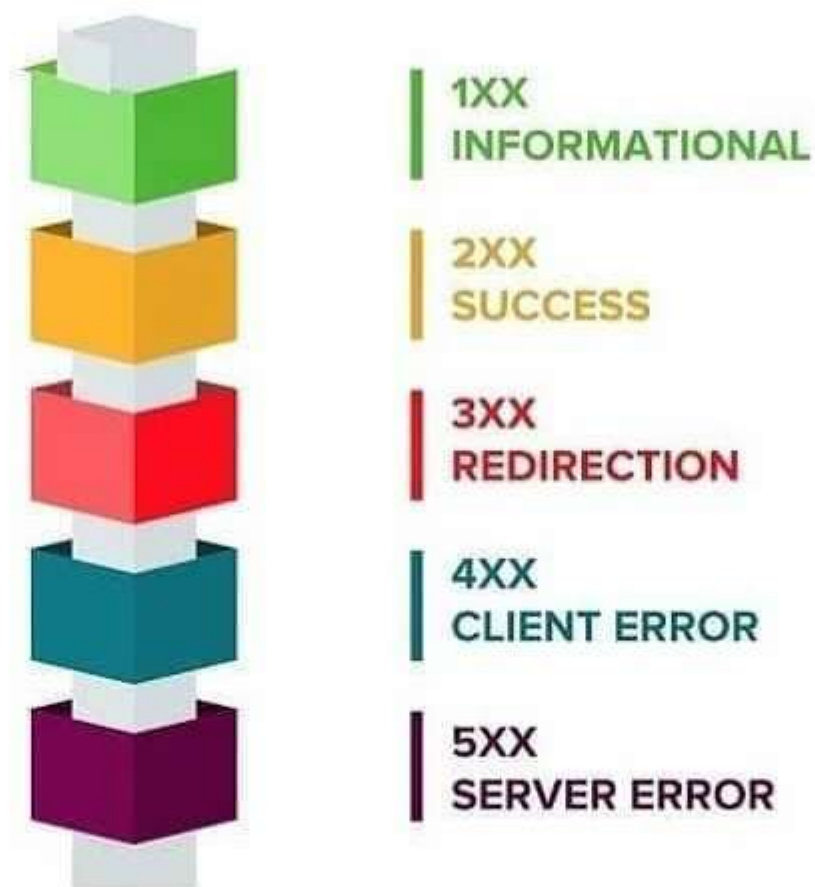
```python
import requests

Api_url = "https://api.open-notify.org/astros.json"
response = requests.get(Api_url)

print(response.status_code)
```

When we make a request, the response from the API comes with a response code or status code which tells us whether our request was successful.

Response codes are important because they immediately tell us if something went wrong

HTTP Status Codes

1XX
INFORMATIONAL

2XX
SUCCESS

3XX
REDIRECTION

4XX
CLIENT ERROR

5XX
SERVER ERROR

For the above code the status_code is **200** which tells us our request was successful

Along with response code the API also sends us **Response Data** ,the data which we actually require and this data is mainly in JSON format.

as the data is in JSON we can use the json attribute of requests library to print it.

```python
import requests

Api_url = "https://api.open-notify.org/astros.json"
response = requests.get(Api_url)
# print response data ..
print(response.json())
```

Output -

```
{"message": "success",
    "number": 3,
    "people": [
        {"craft": "ISS",
            "name": "Alexey Ovchinin"
        },
        {"craft": "ISS",
            "name": "Nick Hague"
        },
        {"craft": "ISS",
            "name": "Christina Koch"
        }]}
```

JSON (JavaScript Object Notation) is the language of APIs. JSON is a way to encode data structures that ensures that they are easily readable by machines. JSON is the primary format in which data is passed back and forth to APIs, and most API servers will send their responses in JSON format.

For working with JSON data, you can also use the Python JSON library, it is standard library so you don't need to install it seperately.

These are just basics there is a lot more to cover.