# REST APIs, WEBSCRAPPING AND WORKING WITH FILES

## REST APIs & HTTP Requests – Part 1

For example you have your program, you have some data, you have other software components. You use the api to communicate with the api via inputs and outputs. Just like a function, you don’t have to know how the API works, but just its inputs and outputs.

REST APIs are another popular type of API; they allow you to communicate through the internet allowing you to take advantage of resources like storage, access more data, artificial intelligent algorithms, and much more. The RE stands for Representational, the S stands for State, the T stand for Transfer. In rest API’s your program is called the client. The API communicates with a web service you call through the internet. There is a set of rules regarding Communication, Input or Request, and Output or Response.

HTTP methods are a way of transmitting data over the internet We tell the Rest API’s what to do by sending a request. The request is usually communicated via an HTTP message. The HTTP message usually contains a JSON file. This contains instructions for what operation we would like the service to perform.

## REST APIs & HTTP Requests –Part 2

An API key as a way to access the API. It's a unique set of characters that the API uses to identify you and authorize you. Usually, your first call to the API includes the API key. This will allow you access to the API. In many APIs, you may get charged for each call. So like your password, you should keep your API key a secret. An endpoint is simply the location of the service. It's used to find the API on the Internet just like a web address.

**Overview of HTTP**

When you, the **client**, use a web page your browser sends an **HTTP** request to the **server** where the page is hosted. The server tries to find the desired **resource** by default "index.html". If your request is successful, the server will send the object to the client in an **HTTP response**. This includes information like the type of the **resource**, the length of the **resource**, and other information.

**Uniform Resource Locator:URL**

Uniform resource locator (URL) is the most popular way to find resources on the web. We can break the URL into three parts.

Scheme:- This is this protocol, for this lab it will always be http://

Internet address or Base URL :- This will be used to find the location here are some examples: www.ibm.com and www.gitlab.com

Route:- Location on the web server for example: /images/IDSNlogo.png

You may also hear the term Uniform Resource Identifier (URI), URL are actually a subset of URIs. Another popular term is endpoint, this is the URL of an operation provided by a Web server.