HTTP, the Web Protocol

This lesson gives a brief introduction to HyperText Transfer Protocol and covers the anatomy of HTTP request and response.

WE'LL COVER THE FOLLOWING

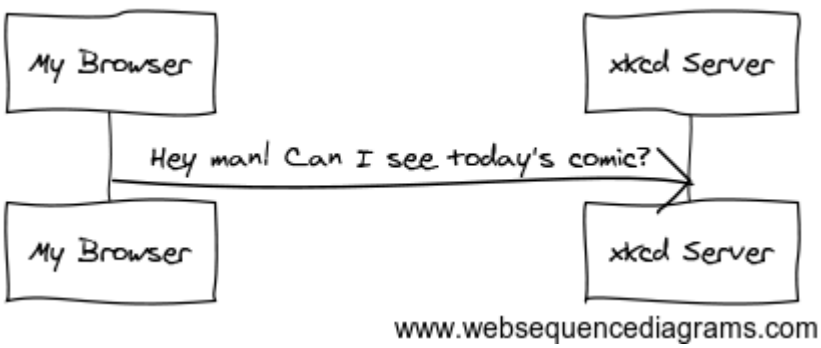
HTTP, which stands for *HyperText Transfer Protocol*, is the technical foundation of the World Wide Web. It is a protocol, a language that allows two machines to communicate with each other.

> HTTPS is the secured version of HTTP.

Technically speaking, HTTP is a pretty simple protocol based on *textual commands*.

Anatomy of an HTTP Request

Let's study the first part of the web exchange described previously: the request.



This HTTP request comes under the form as a multi-line piece of text similar to the following one.

```
GET / HTTP/1.1
Host: xkcd.com
Accept: text/html
User-Agent: Mozilla/5.0 (Macintosh)
...
```

The most important line is the first one. It contains:

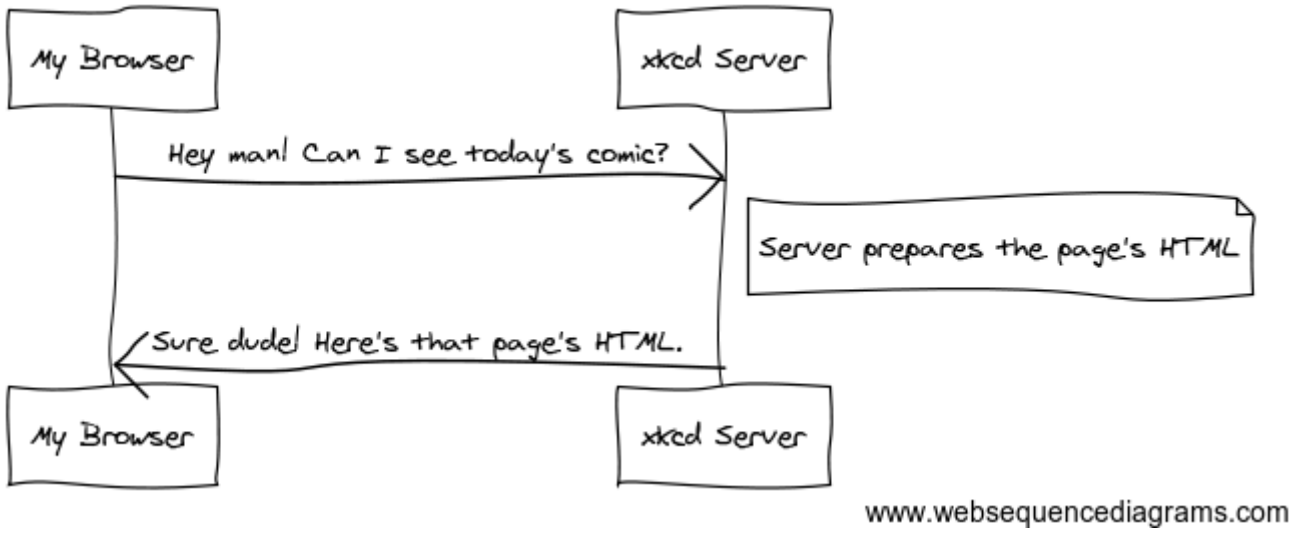
- The HTTP *method* (the request type, also named *command*). Here, the `GET` method indicates a resource access request.
- The requested *resource*. Here, `/` (root symbol) indicates a request for the default document.
- The HTTP protocol *version*, here 1.1.

The other lines of text are called *header fields*. They give more information about the client request: server name (`Host`), accepted content types (`Accept`), client software details (`User-Agent`). They are many other possible header fields.

The main HTTP methods are `GET` to access a resource and `POST` to push some information on the server. Other ones exist, such as `HEAD`, `PUT` or `DELETE`

Anatomy of an HTTP Response

When receiving an HTTP request, the server looks inside for information. It then builds an appropriate answer and sends it back.



The HTTP response sent by the server looks something like this.

```
HTTP/1.1 200 OK
Date: Fri, 22 Apr 2017 18:05:05 GMT
Server: Apache/2.2
Content-Type: text/html


<html>
<!-- HTML code of the page -->
<!-- ... -->
</html>
```

The first line contains the response *status*: a three-digit number indicating the request result. Other lines are header fields (`Date`, `Content-Type`, etc) giving additional info about the response.

An HTTP response might also include data. In this example, it contains the HTML code of the web page corresponding to the requested resource.