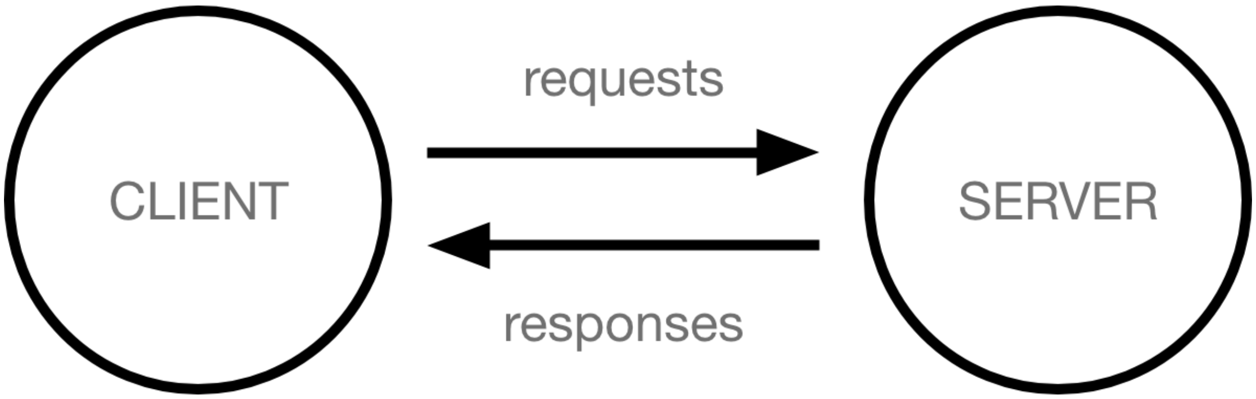
Simply It’s Clients and Servers



--- Clients Are the typical web users internet-connected devices like: My Computer Or Yours and Web Accessing software available on these devices is Web Browser like: Chrome

--- Servers are computers that store webpages, sites, or apps. When a client device wants to access a webpage, a copy of the webpage is downloaded from the server onto the client machine to be displayed in the user's web browser.

But There another components that help to complete the process of communication between servers and computer Like:

- **Your internet connection**: Allows you to send and receive data on the web. It's basically like the street between your house and the shop.

- **TCP/IP**: Transmission Control Protocol and Internet Protocol are communication protocols that define how data should travel across the internet. This is like the transport mechanisms that let you place an order, go to the shop, and buy your goods. In our example, this is like a car or a bike (or however else you might get around).

- **Component files**: A website is made up of many different files, which are like the different parts of the goods you buy from the shop. These files come in two main types:
  - **Code files**: Websites are built primarily from HTML, CSS, and JavaScript, though you'll meet other technologies a bit later.
  - **Assets**: This is a collective name for all the other stuff that makes up a website, such as images, music, video, Word documents, and PDFs.

■ HTTP

Hypertext Transfer Protocol is an application protocol that defines a language for clients and servers to speak to each other. This is like the language you use to order your goods.

When you type a web address into your browser:

1. The browser goes to the DNS server and finds the real address of the server that the website lives on .
2. The browser sends an HTTP request message to the server, asking it to send a copy of the website to the client This message, and all other data sent between the client and the server, is sent across your internet connection using TCP/IP.
3. If the server approves the client's request, the server sends the client a "200 OK" message, which means "Of course you can look at that website! Here it is", and then starts sending the website's files to the browser as a series of small chunks called data packets.
4. The browser assembles the small chunks into a complete web page and displays it to you.

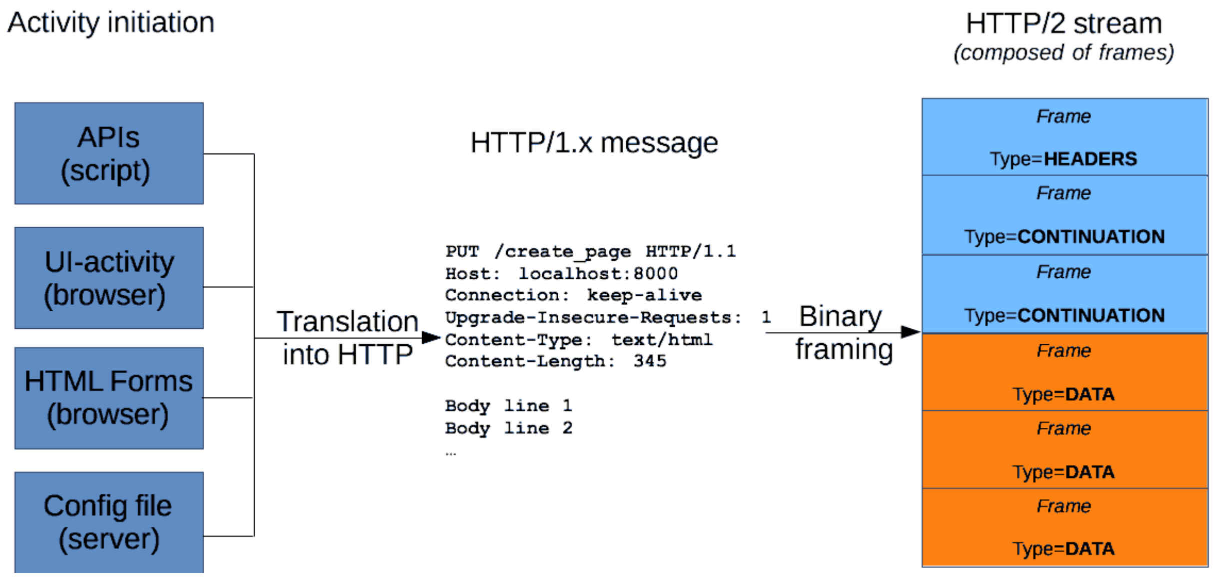
HTTP Messages

Definition:

HTTP messages are how data is exchanged between a server and a client. There are two types of messages: *requests* sent by the client to trigger an action on the server, and *responses*, the answer from the servers.

HTTP messages are composed of textual information encoded in ASCII, and span over multiple lines. In HTTP/1.1, and earlier versions of the protocol, these messages were openly sent across the connection. In HTTP/2, the once human-readable message is now divided up into HTTP frames, providing optimization and performance improvements.

Web developers, or webmasters, rarely craft these textual HTTP messages themselves: software, a Web browser, proxy, or Web server, perform this action. They provide HTTP messages through config files (for proxies or servers), APIs (for browsers), or other interfaces.



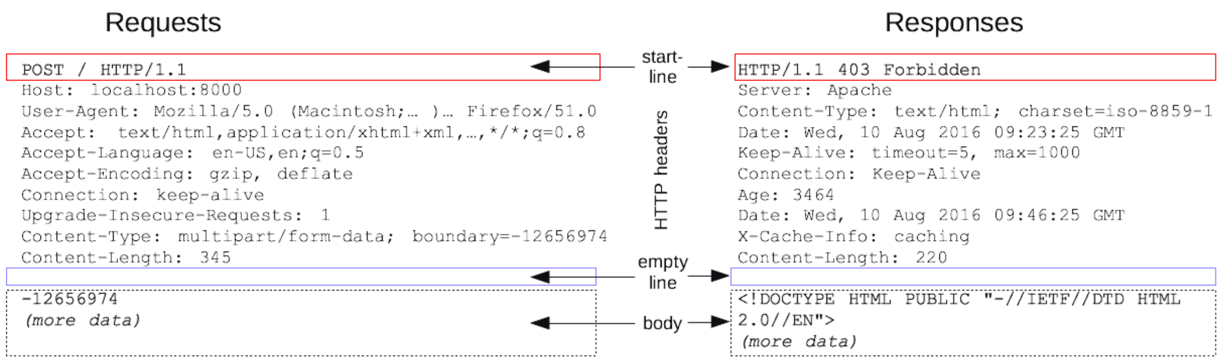
```
PUT /create_page HTTP/1.1
Host: localhost:8000
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Content-Type: text/html
Content-Length: 345

Body line 1
Body line 2
…
```

The HTTP/2 binary framing mechanism has been designed to not require any alteration of the APIs or config files applied: it is broadly transparent to the user.

HTTP requests, and responses, share similar structure and are composed of:

1. A *start-line* describing the requests to be implemented, or its status of whether successful or a failure. This start-line is always a single line.
2. An optional set of *HTTP headers* specifying the request, or describing the body included in the message.
3. A blank line indicating all meta-information for the request has been sent.
4. An optional *body* containing data associated with the request (like content of an HTML form), or the document associated with a response. The presence of the body and its size is specified by the start-line and HTTP headers.

The start-line and HTTP headers of the HTTP message are collectively known as the *head* of the requests, whereas its payload is known as the *body*.



```
POST / HTTP/1.1
Host: localhost:8000
User-Agent: Mozilla/5.0 (Macintosh;… )… Firefox/51.0
Accept: text/html,application/xhtml+xml,…,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Content-Type: multipart/form-data; boundary=-12656974
Content-Length: 345

-12656974
(more data)
```

```
HTTP/1.1 403 Forbidden
Server: Apache
Content-Type: text/html; charset=iso-8859-1
Date: Wed, 10 Aug 2016 09:23:25 GMT
Keep-Alive: timeout=5, max=1000
Connection: Keep-Alive
Age: 3464
Date: Wed, 10 Aug 2016 09:46:25 GMT
X-Cache-Info: caching
Content-Length: 220

<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML
2.0//EN">
(more data)
```