Request - Response Cycle

Web Server (Processing)

Web Page

Click Here → **Browser**

Request
(Get, URL)

opens the network socket

Parses and renders the response.

Response

```
<h1>The Second Page</h1><p>If
you like, you can switch back to the
<a href="page1.htm">First
Page</a>.</p>
```

(This is just an example.
A lot of things can
come back in response
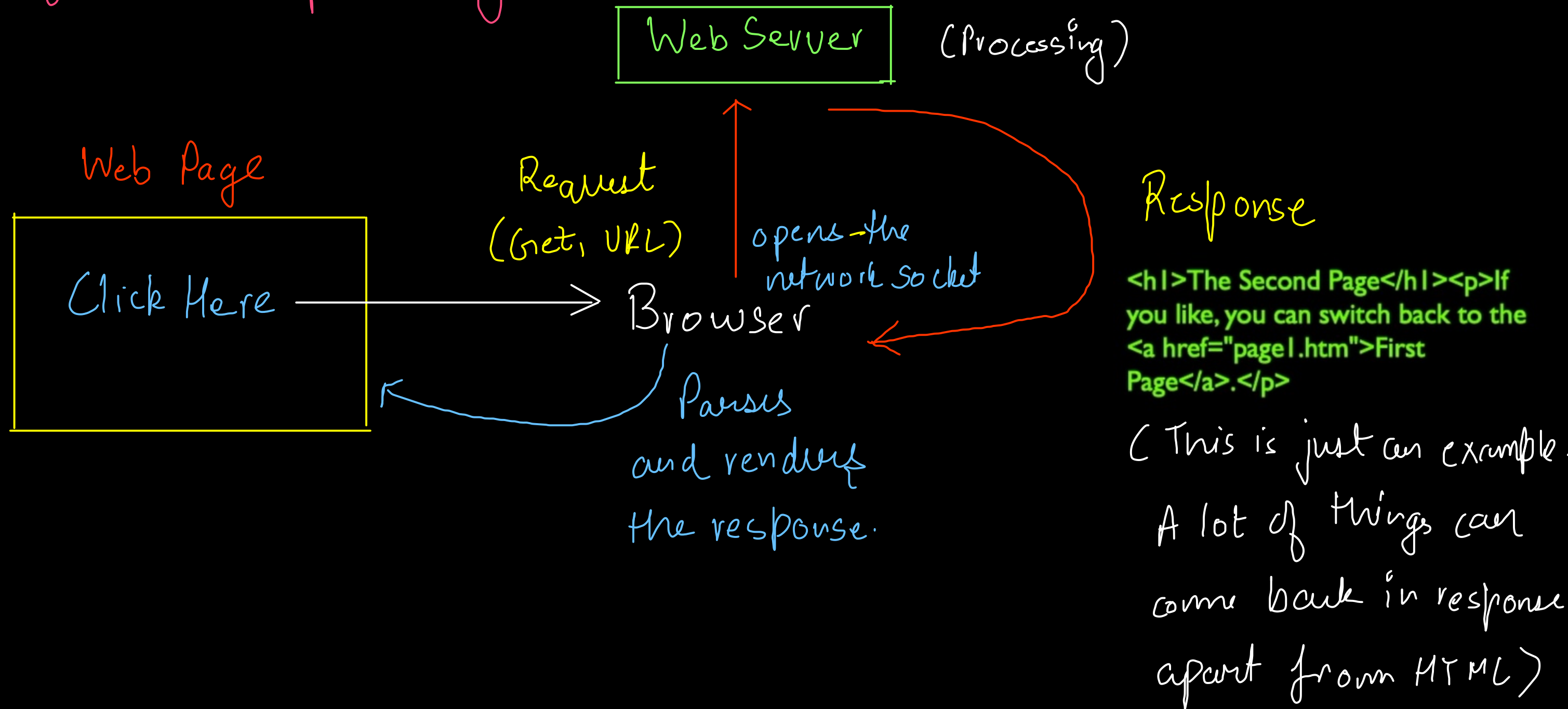apart from HTML)

HyperText Transfer Protocol (HTTP)

Uniform Resource Locator (URL)

    http://data.pr4e.org/page1.htm

    protocol | host | document

Server address
(it resolves to an
IP address)

HTTP - HyperText Transfer Protocol

- The dominant Application Layer Protocol on the Internet
- Invented for the Web - to retrieve HTML, Images, Documents, etc.
- Extended to handle data in addition to documents - RSS, Web Services, etc.
- Basic Concept: Make a connection - Request a document - Retrieve the document - Close the connection

- Internet and sockets were created in the 1970's, HTTP was invented in 1990 and is an application protocol that runs atop sockets

We can say that the sockets are the ones that make a phone call & HTTP is what we do when the call is established.

5 Request

A request message from a client to a server includes, within the
first line of that message, the method to be applied to the resource,
the identifier of the resource, and the protocol version in use.

```
    Request         = Request-Line              ; Section 5.1
                      *(( general-header        ; Section 4.5
                       |  request-header        ; Section 5.3
                       |  entity-header ) CRLF)  ; Section 7.1
                      CRLF
                      [ message-body ]          ; Section 4.3
```

5.1 Request-Line

The Request-Line begins with a method token, followed by the
Request-URI and the protocol version, and ending with CRLF. The
elements are separated by SP characters. No CR or LF is allowed
except in the final CRLF sequence.

```
    Request-Line   = Method SP Request-URI SP HTTP-Version CRLF
```