

How A Website Works

- Shobha

A 3D button with a white face and a blue border, tilted at an angle. The text 'http://www.' is written in a large, black, sans-serif font on the button. A yellow 3D mouse cursor arrow points towards the bottom right of the button. The background is a dark blue gradient with faint, light blue binary code (0s and 1s) and network-like patterns.

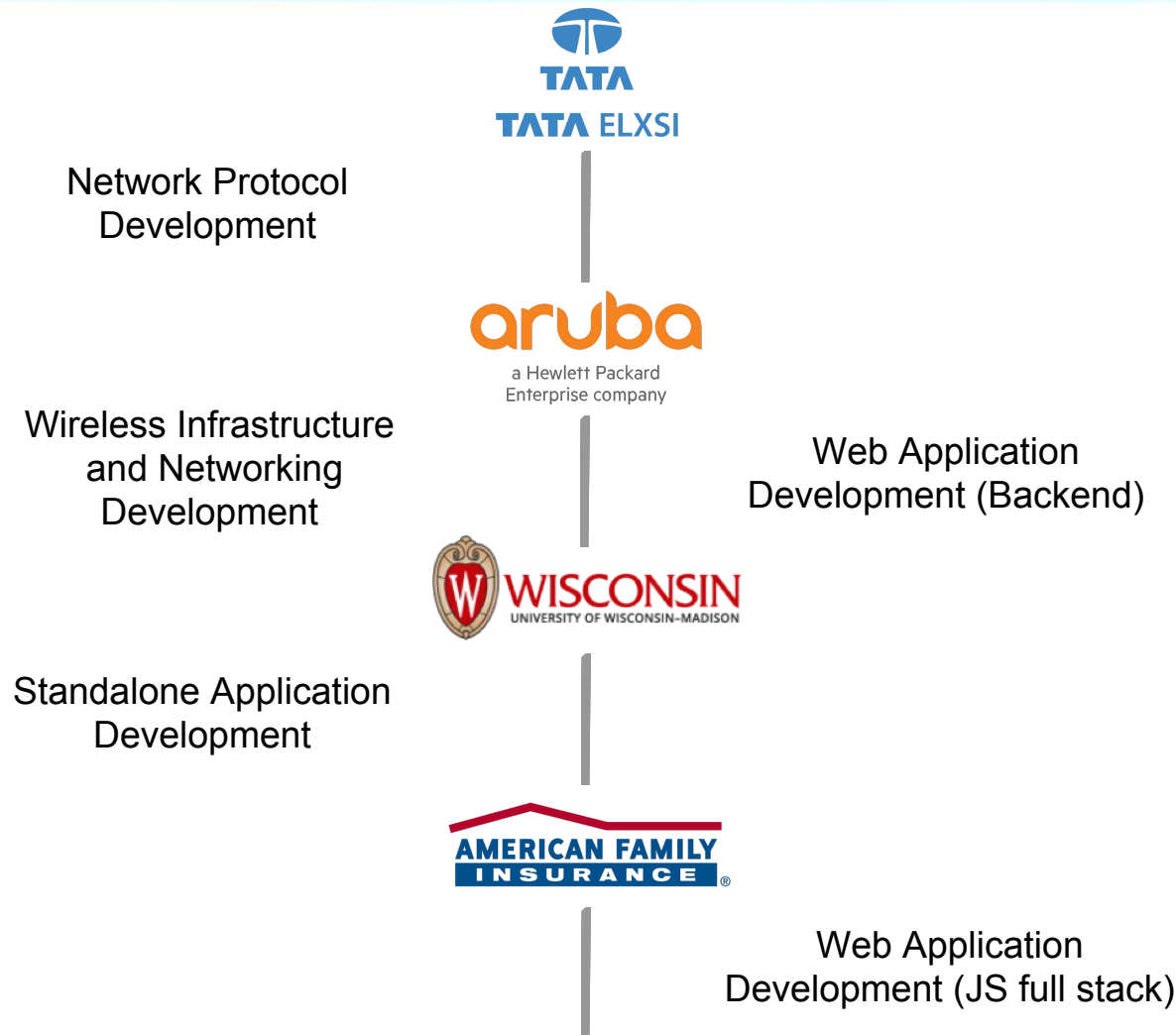
http://www.

Synopsis



1. What is World Wide Web?
2. What makes web work?
3. HTTP and Internet Protocols.
4. URL's
5. Client-Server model.
6. Domain Name System.
7. Web Browser, Web Server, Web Page.
8. How a web page works?
9. What is web site?

About Me



What is web?



Web or World Wide Web (W3), is a global collection of documents and other resources and linked by hyperlinks and URIs.

There are specified standards that are defined on how to access, how it should be formatted.

What Makes Web?



- Hypertext
- Protocols
- URL
- Client-Server Computers
 - Browsers
 - Servers

What Makes Web?

Hypertext



- Hypertext: Presents and relates information as hyperlinked documents that point to other documents or resources.
- [Hyperlink](#): is usually embedded in the text, on a highlighted word or phrase, or on a symbol, an icon, or other graphic elements
- Web Pages: are hypertext documents on the Internet mostly created using HTML
- HTML: Markup language which is the standard to create web pages.
 - How is it written: Using a variety of tags and attributes. Display text, images, links other documents.

What Makes Web? Protocols



Protocols are set of rules that partners in communication.

Protocols used in web communications are

HTTP – Underlying protocol used to transmit information over web.

FTP – File transfer protocols

SMTP – Simple mail transfer protocols

Under this are other protocols which help transport message between machines

TCP/UDP – Transmission Control Protocol

IP – Internet Protocol

What Makes Web?

URL's



- Uniform naming scheme that specifies unique addresses for web servers, documents, and other resources, no matter what its access protocol
- The URL points to where the data or service is located (the host computer and the directory in which it resides) on the Internet
- Web documents and resources are located and linked through their URL's

<https://mail.google.com/mail/u/0/#inbox>



What Makes Web?

Client-Server model



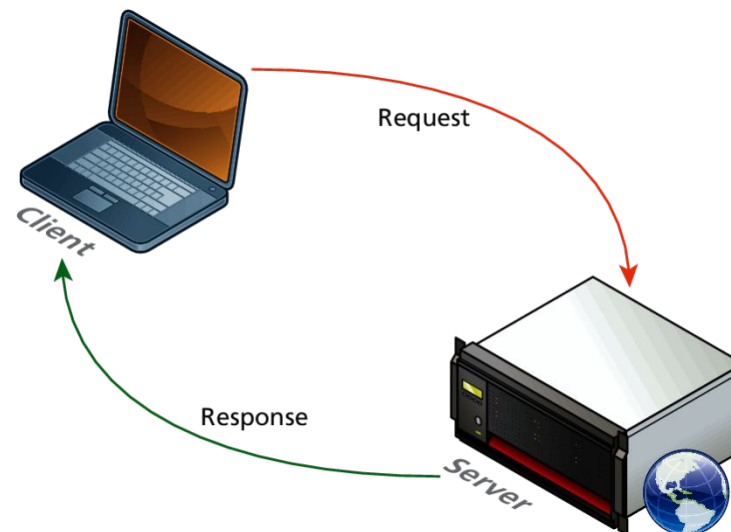
- The web is sometimes referred to as a client-server model of communications.
- In the **client-server model**, there are two types of actors: clients and servers.
- The **server** is a computer agent that is normally active 24 hours a day, 7 days a week (or simply 24/7), listening for queries from any client who make a request.
- A **client** is a computer agent that makes requests and receives responses from the server, in the form of response codes, images, text files, and other data.

What Makes Web?

Client-Server model



- The **request-response loop** is the most basic mechanism on the server for receiving requests and transmitting data in response.
- The client initiates a **request** to a server and gets a **response** that could include some resource like an HTML file, an image or some other data.



What Makes Web?

Client-Server example



Lets look at a simple example

Domain Name System



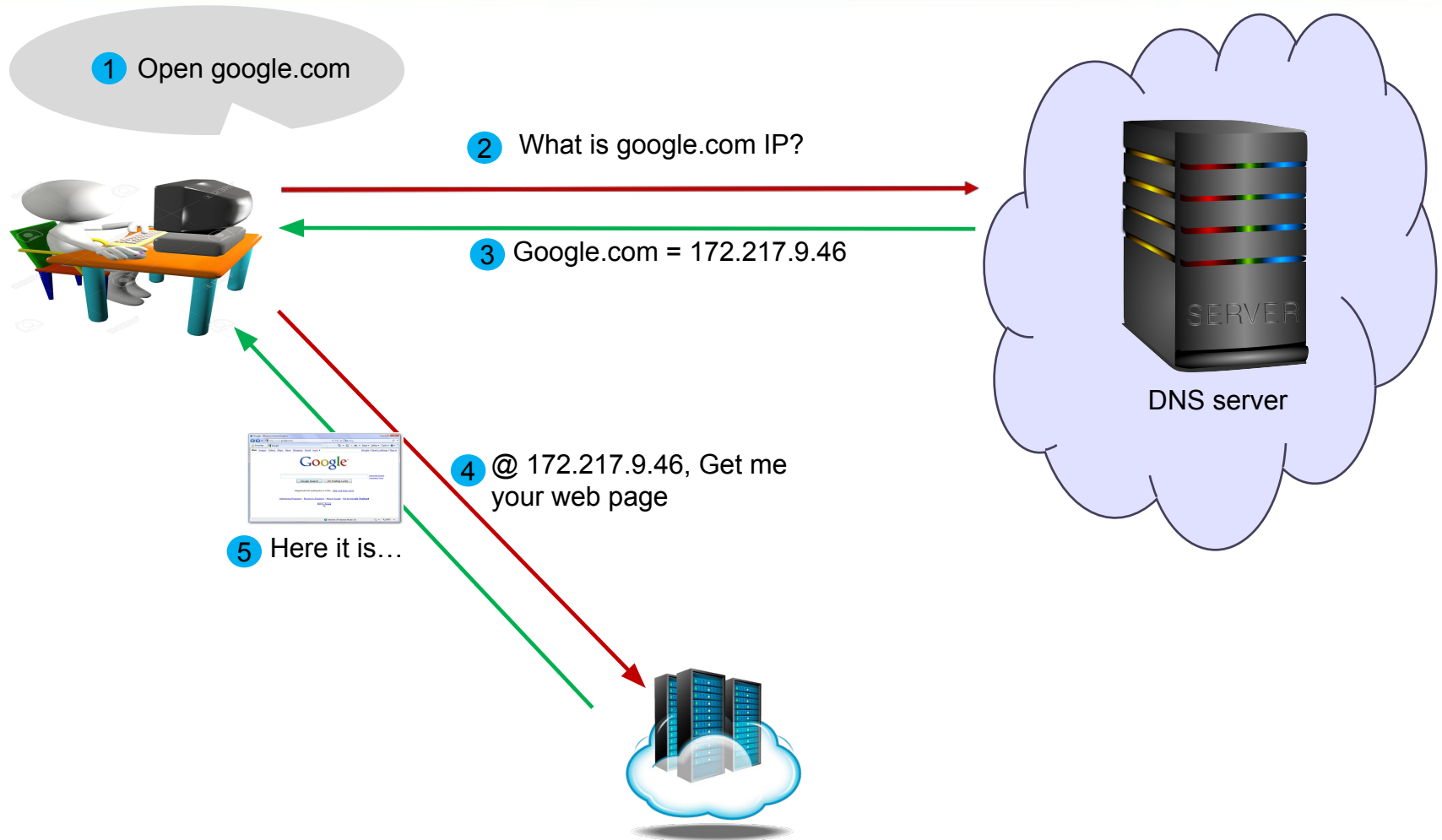
DNS is a server.

These are like an address book for websites.

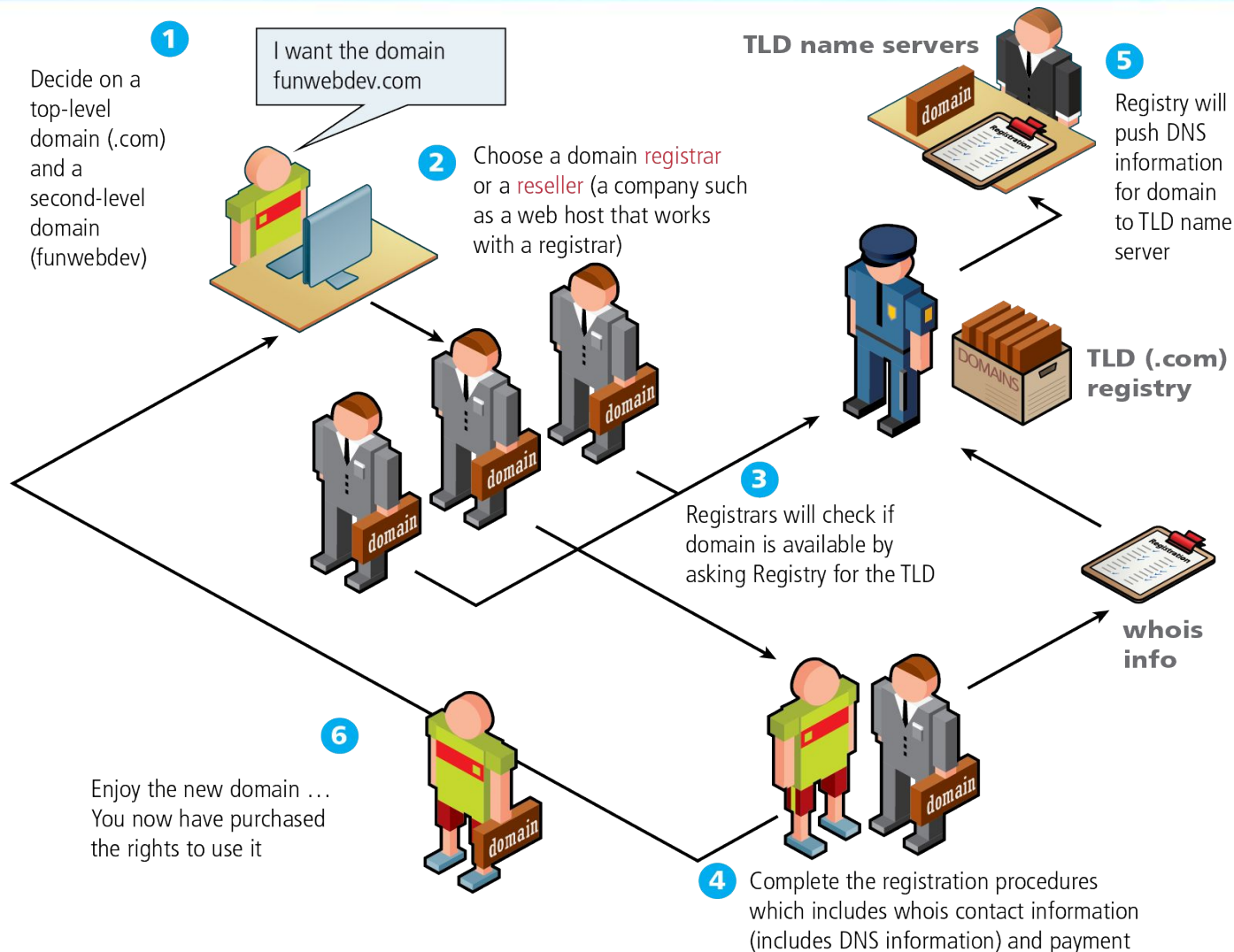
When you type a web address in your browser, the browser looks at the DNS before retrieving the website.

The browser needs to find out which server the website lives on, so it can send HTTP messages to the right place (see below). This is like looking up the address of the shop so you can access it.

DNS Overview



How 'Domain Names – IP' make their way into DNS



What is Web Client / Web Server / Web Page?



Web Client:

A web client is an application that communicates with a web server, using Hypertext Transfer Protocol (HTTP). Hypertext Transfer Protocol is the protocol behind the World Wide Web. With every web transaction, HTTP is invoked. HTTP is behind every request for a web document or graphic, every click of a hypertext link, and every submission of a form.

Some examples:

What is Web Client / Web Server / Web Page?



Web Server:

Machines running applications software that listen and respond to a client computer's request made through a web browser.

Most popular web server:

- Apache HTTP Server
- NGINX
- Apache Tomcat
- Node.js
- Lighttpd
- [IIS](#) – Microsoft
- [GWS](#) – Google

What is Web Client / Web Server / Web Page?



Web Page:

Electronic document that typically contains several types of information accessible via the World Wide Web

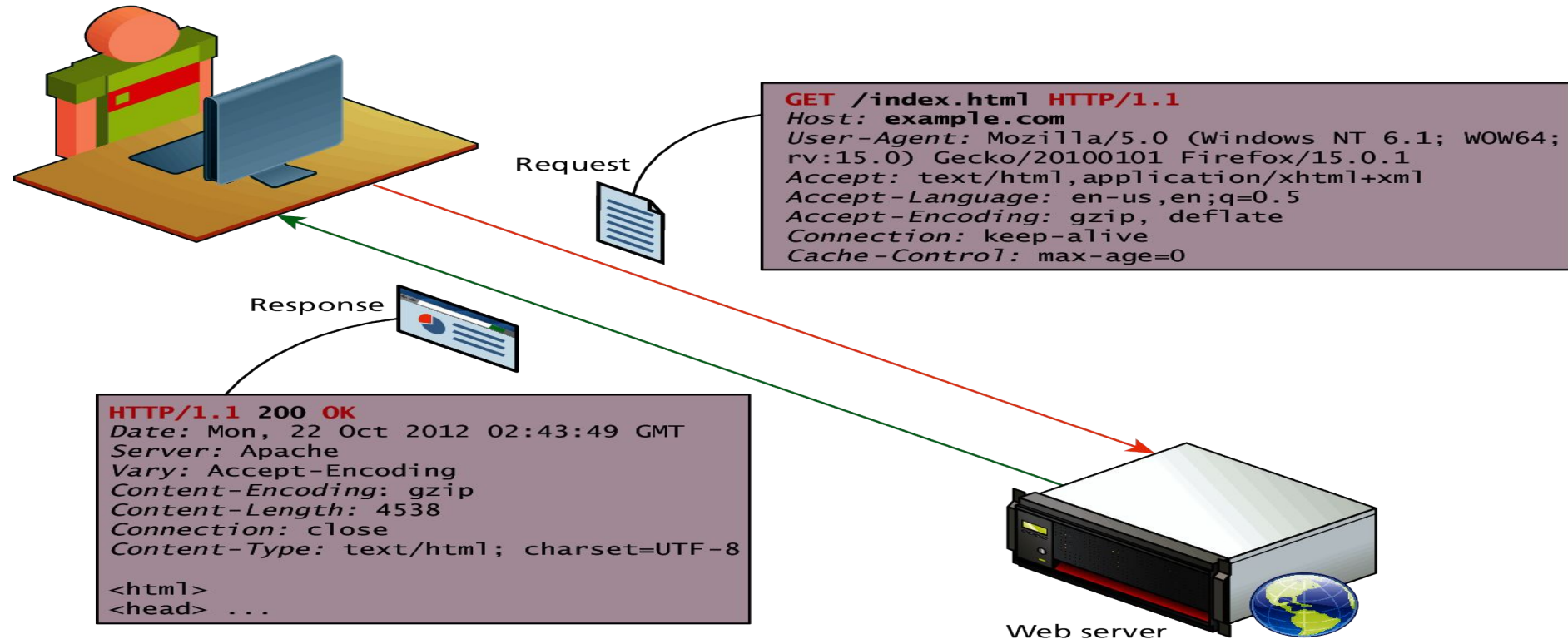
Web Site:

- Is a collection of pages.
- Pages are located on a webserver connected to internet.
- Webserver is a computer that host websites and has web softwares.

Web Client and server interaction



- Web Servers are run and are listening to the clients at port 80 or 8080
- On user entering the URL on Web Browser, it makes HTTP connections to server on port 80.
- Server responds with response code, headers and an optional message.



Delete it



- Electronic document that typically contains several types of information accessible via the World Wide Web
- Set of information created, and organized, using HTML and/or other web page authoring and development tools
- Interpreted and displayed on the screen according to the instructions of the web page authoring tool
- While we as web users might be tempted to think of an entire page being returned in a single HTTP response, this is not in fact what happens.
- In reality the experience of seeing a single web page is facilitated by the client's browser which requests the initial HTML page, then parses the returned HTML to find all the resources referenced from within it, like images, style sheets and scripts.
- Only when all the files have been retrieved is the page fully loaded for the user

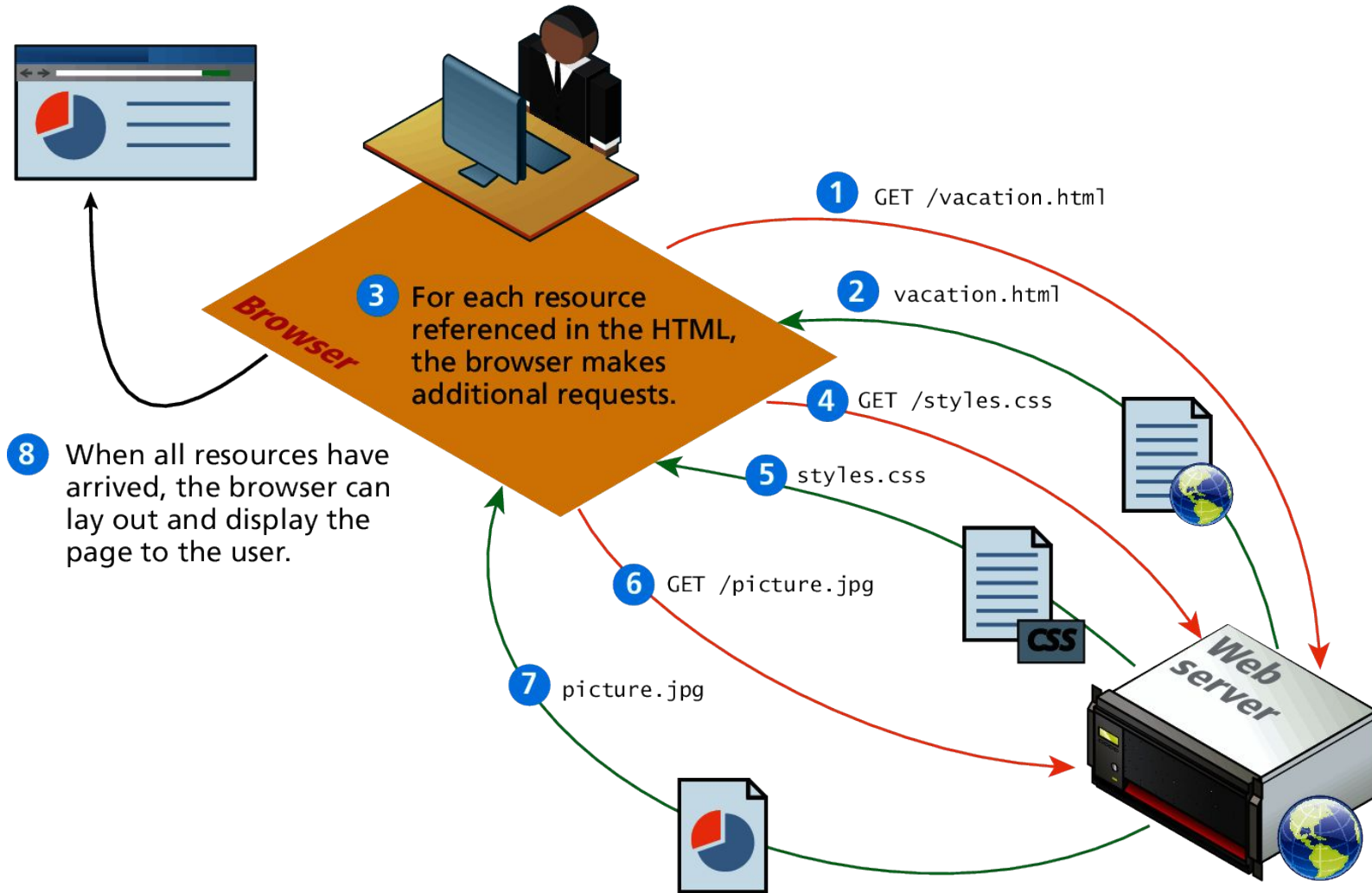
Web Client and server interaction



Popularly used HTTP Request Methods

- GET
- POST
- PUT
- DELETE

Web Client and server interaction



In Nutshell

