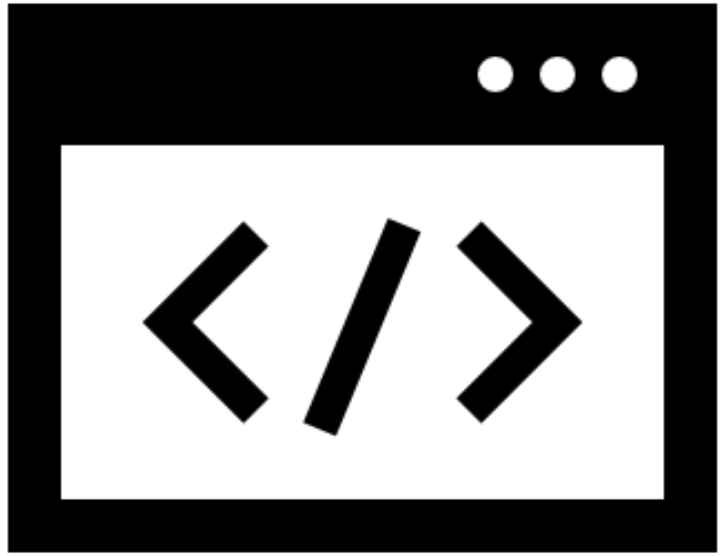


Introduction to a web-app

Content

Objective:

1.Get familiar with the basic terminology of webapps and development

2.Convert basic understanding into more technical understanding

Topics:

1.Using a web app

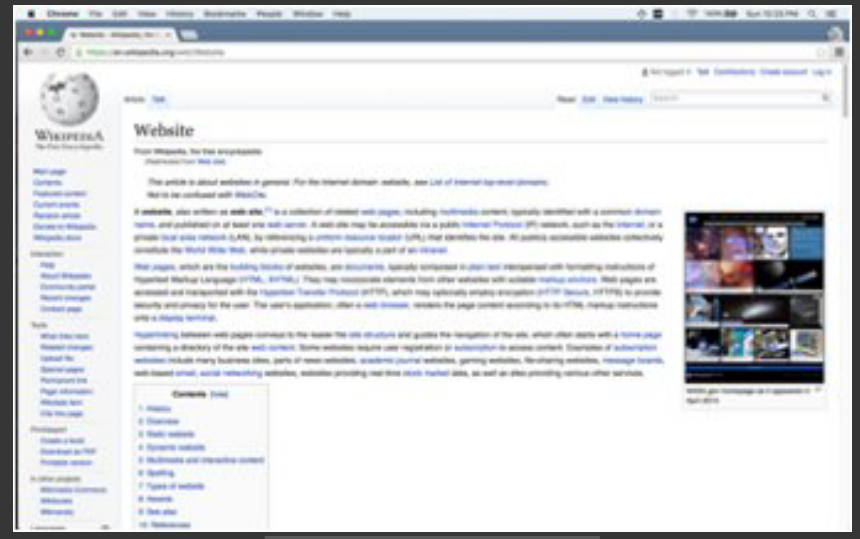
2.Webapps - A detailed look

1.Using a webapp

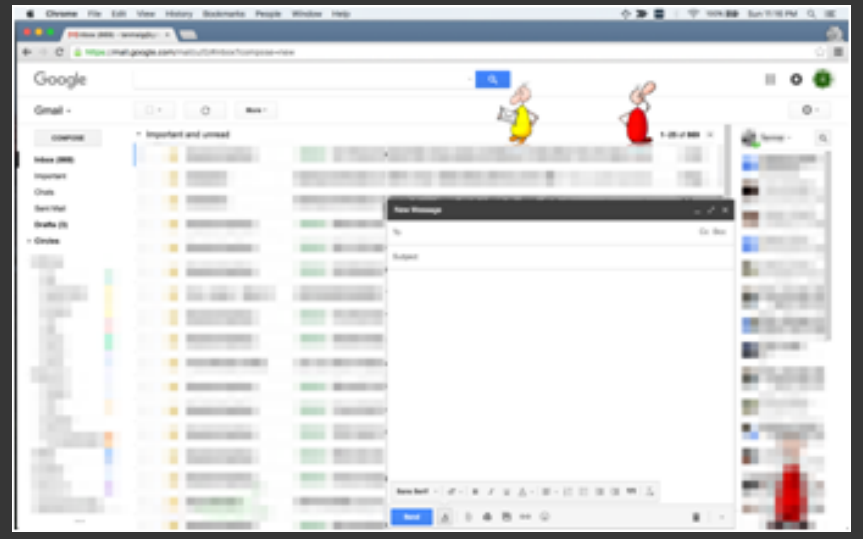
What is a webapp?

A web app is a client-server application that runs in a web browser.

For the rest of this course: webapps ≈ web applications + websites + webpages



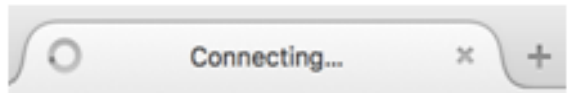
Wikipedia



Gmail

1.Using a webapp - browsing

1. Using a webapp - **The Steps**

1	Open a browser application	*Firefox*
2	Enter the web address	*www.wikipedia.org*
3	The browser fetches the data from the server	
4	The browser displays the webpage	

2. Webapps - a detailed look

2.1 Browser - Web Client

A browser is a software which needs to be installed on a device to use webapps.

Common browsers

2.1 Browser

Browsers can make requests to servers using URLs and **render the response data**

Content Type	File extension	Example
`text/plain`	`.txt`	http://www.flipkart.com/robots.txt
`text/html`	`.html`	http://www.cenlib.iitm.ac.in/docs/library/ejnls-iitm.html
`image/png`	`.png`	https://hasura.io/img/hasura-sand.png
`application/pdf`	`.pdf`	https://www.iitm.ac.in/sites/default/files/uploads/calendar-revised-jul-nov_2016.pdf

*Computer programs that can make requests to servers and fetch responses are called **clients**. When these programs make requests to web servers, they are called **web clients**. A **browser is a web client**.*

2.1 Browser

- Modern browsers can **interpret and run code** written by the application author (Javascript)
- **Purpose:** Make page interactive or dynamic.

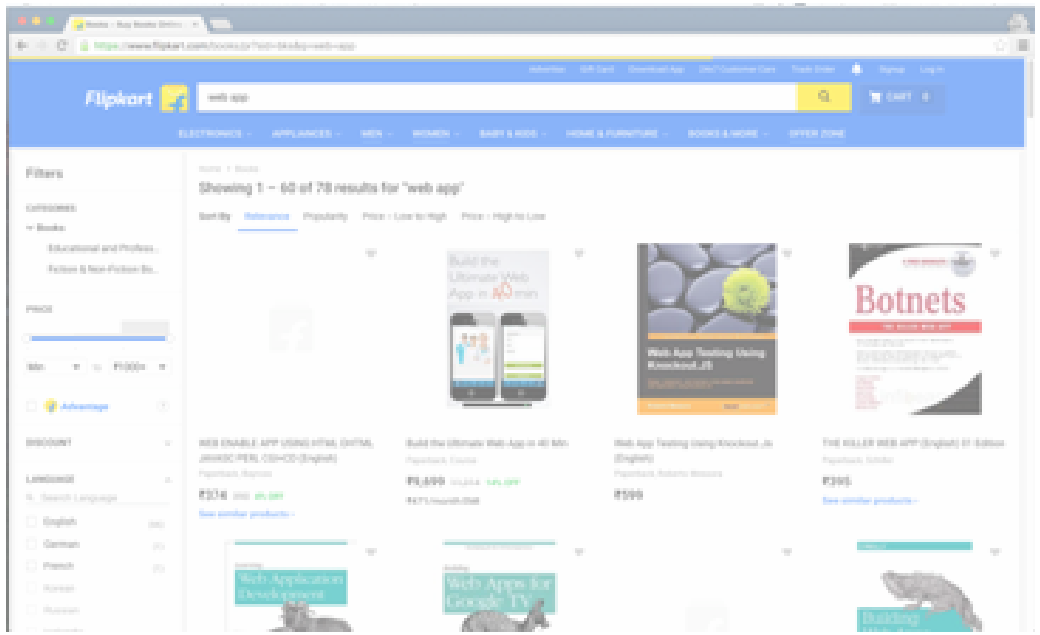
Clicking on the icon shows the pending friend requests (facebook)

Facebook newsfeed keeps automatically fetching new content

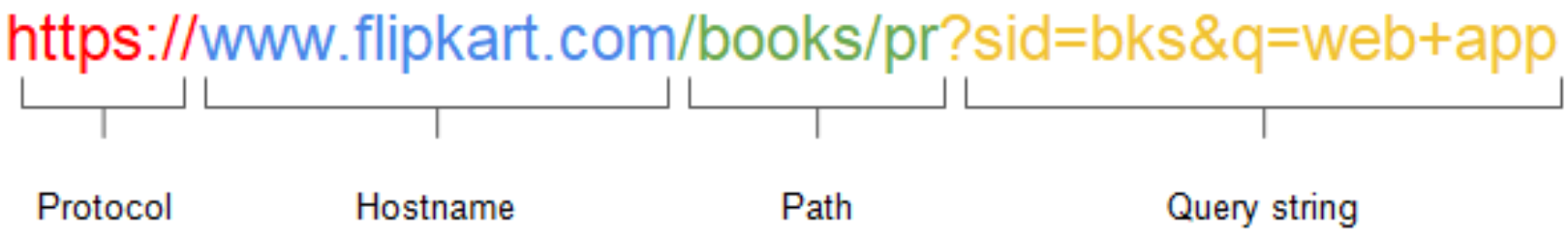
2.2 URL

- A URL identifies both the server and the resource (webpage or content)
- URL stands for: Uniform Resource Locator
- Also informally called 'web address'
- **Purpose:** Find a resource on the Internet

https://www.flipkart.com/books/pr?sid=bks&q=web+app



2.2 URL



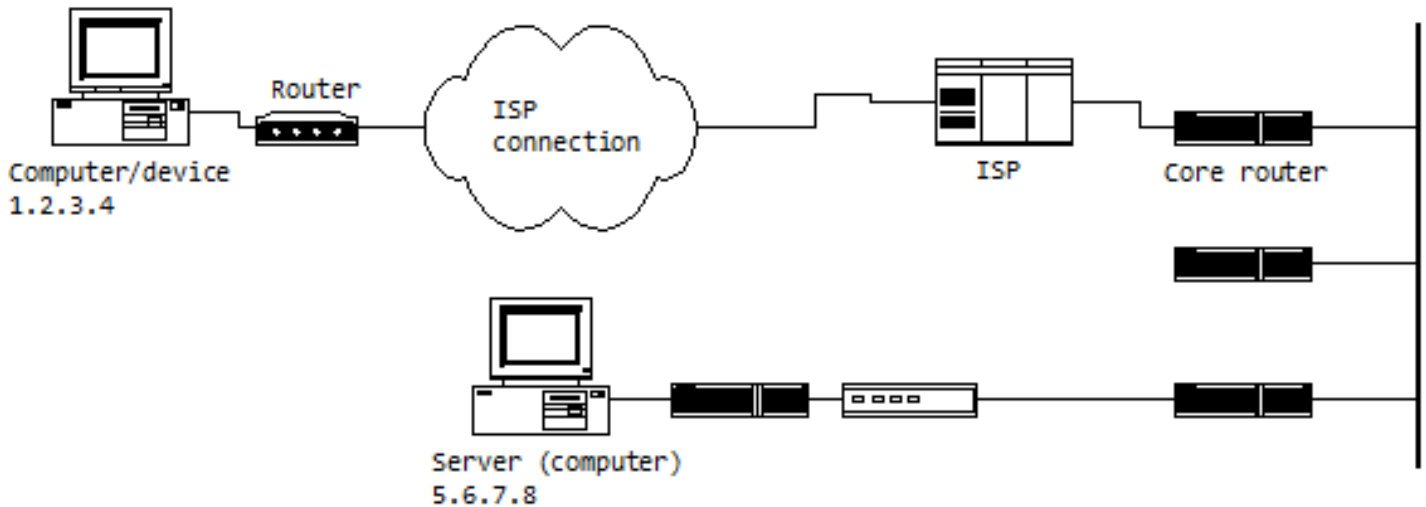
- **Protocol:** It defines the mode/rules of communication between the client and server for the request.
- **Hostname:** It identifies the server which will serve the request. It may contain the domain name. In this case “flipkart.com”
- **Path:** It defines the resource which is being requested. It typically points to a webpage. (in this case list of books)
- **Query String:** It typically contains any additional parameters that is typically used to add more context to the same path (in this case books that are about “web app”)

2.3 DNS - Domain Name System

- DNS is like a directory which links the domain name to the IP address of the server
  - google.com <> 216.58.197.78
  - facebook.com <> 173.252.89.132
- Every server must have a unique IP address which clients can use to connect with it over the internet.
- This IP address is mapped to a human friendly domain name to make it easy to remember.
- The directory is maintained by “name servers”. Programs can exchange the domain-name for the registered IP address by requesting the name server. This is called a “DNS lookup”

2.4 Network

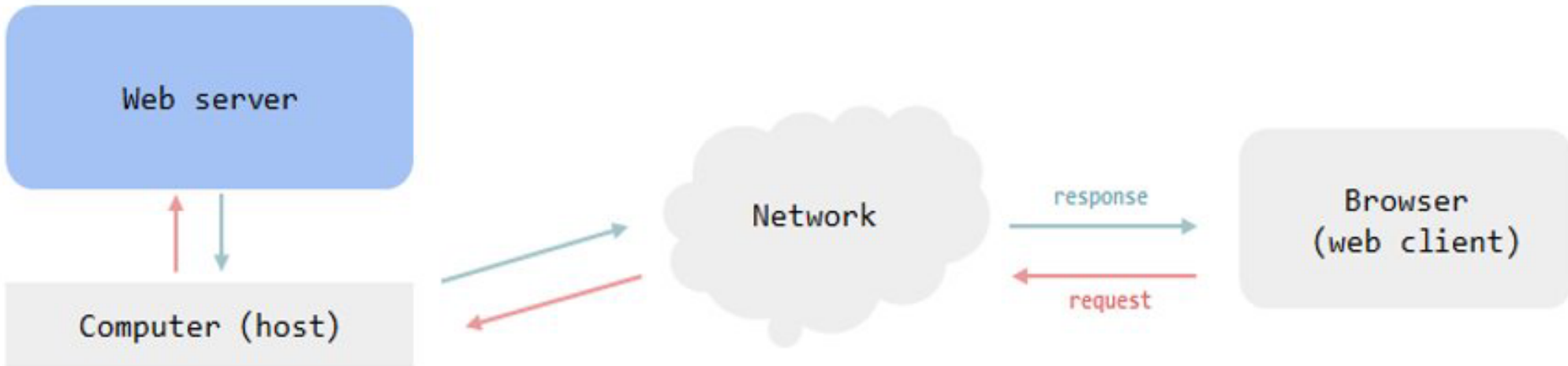
- Your computer connected to your router connected to your ISP, connected to other ISPs, finally connected to another computer (the server)



- A program can send a request on a network by mentioning the IP of the other computer and the network (meaning the entire systems of hardware and software) will route your request to the computer that has that IP.

2.5 Server - Web Server

- A web server can listen to requests and respond back with data on the same connection



- Very commonly, a server is also used to refer to the actual computer (also called **a host**) on which the "server" software is installed.

Summary

What we covered

- Web apps
- Browser,
- URL
- DNS
- Network
- Web server
- Client - server architecture
- https