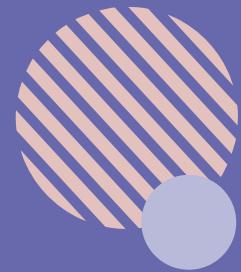


Web Programming

Course Orientation

Instructor: Prof. SoYeop Yoo

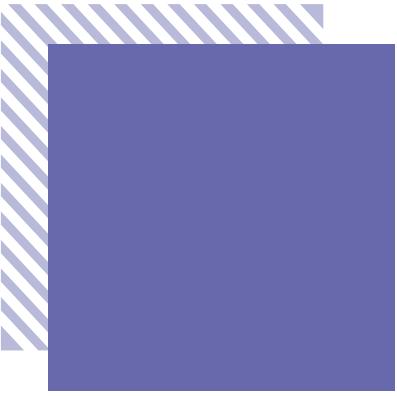
School of Computing, Gachon University



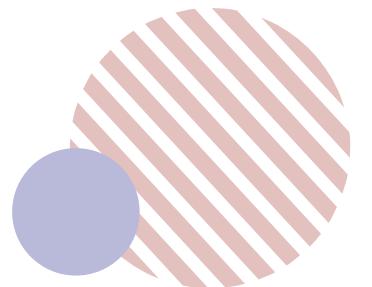
CONTENTS

01 Course Orientation

02 Overview



Course Orientation





Course Orientation

■ Instructor

- SoYeop Yoo
- Contact information
 - CyberCampus: QA board
 - E-mail: bbusso@gachon.ac.kr
 - Office: #214, AI Hall

■ Reference Books

- Head First HTML with CSS & XHTML (Elisabeth Robson, Eric Freeman, O'Reilly, 2012)



Grading

■ Total 1,000 points

- Attendance (100 points)
- Quiz+Homework (150 points)
- Lab (100 points)
- Term Project (150 points)
- Midterm Exam (200 points)
- Final Exam (300 points)



Course Objectives

■ Objectives

- To provide students with a systematic understanding of the most significant technologies for developing front-end Web applications.
- To demonstrate how these technologies may be used on today's Websites.
- To provide knowledge of the characteristics of good Website design principles.



Syllabus / Weekly Schedules

Week	Topics	Key topics
1	Course orientation, HTML5	HTML5 basics
2	HTML5	table, text, hyperlink, form
3	HTML5 (MOOC class)	multimedia (image, audio, video, editing)
4	CSS3	CSS overview, background, text, div & span, selectors
5	CSS3 (MOOC class)	formatting, box, layout
6	CSS3	review, list, overflow, layout, combinators, misc.
7	Lab 1 (HTML5+CSS3)	
8	Midterm Exam	
9	JavaScript	JavaScript basics
10	JavaScript (MOOC class) (start term project)	common programming basics (if else, loop, function)
11	JavaScript	basic objects, browser object model
12	JavaScript (MOOC class)	DOM, events
13	Lab 2 (JavaScript)	
14	Term Project Presentations (by students)	
15	Final Exam	



Note on Self-Driven Learning (1/3)

■ Self-Driven Learning

- The School of Computing (SW Department + AI Department) has adopted self-directed learning methods in all computer-science courses.
- Professors will become more of coaches than lecturers.
- We are doing this because life is a continuous learning process, and we believe students will find, after graduation, training in school on self-directed learning very valuable.
- There are two key elements to the self-directed learning.
 - MOOC and Active Learning



Note on Self-Driven Learning (2/3)

■ MOOC (Massively Online Open Courseware)

- At least 3 weeks' classes will be conducted using MOOCs (video recorded lectures).
- Students can take the classes from anywhere any time (within one week of the posting of the MOOC).
- There will be exercise problems and assignments (due in one week).
- Students can ask questions online and receive answers within 24 hours.
- This method has been used very successfully for 3 years for all SW ELITE courses and SW Basic courses for all non-Computer Science students in Gachon University.



Note on Self-Driven Learning (3/3)

■ Active Learning

- **Not applicable to the First year courses!**
- At least 2 weeks' classes are conducted using an active learning method.
- The instructor gives a brief introduction to one or more topics, and the students learn them in depth on their own, and then submit a report and present using PPT in the next class.
- ** This learning model has been used successfully for several years in the "Software Industry Seminar" course.



Note on Course Management

■ Course Management

- This course will be taught by four professors using the exact same lecture materials and following the exact same course schedule and grading policy.
- Each of the 4 MOOC classes for this course will be recorded by a different professor (to share the recording load).



Course Rules (1/2)

■ Semester grade "F"

- Missing a class more than 3 times
- Cheating in exams

■ "0" point

- Late homework
- Cheating on homework or lab

■ About points

- One "0" point in homework will result in course grade below "A"
- "under 50% in total homework points" will result in course grade below "B0"



Course Rules (2/2)

■ “Not attending” a class

- 10-point (out of 1000 points) penalty for “not attending” a class
- “Not attending” a class includes
 - Not attending a class
 - Being late to a class
 - Leaving a class in the middle
 - Chatting in class

■ No late submission is allowed

- Do **NOT** send me e-mails/notifications for any “late” submissions
- Submission should be done no later than 11:55 PM on the due date. (cyber campus only)



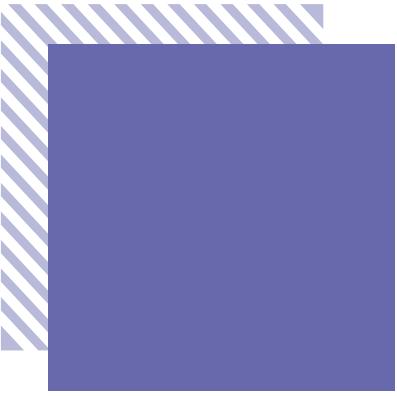
Special Requirements

■ Laptop

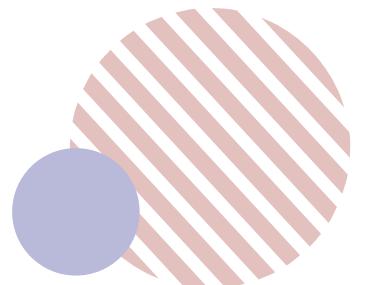
- Bring Laptop computer for every class

■ Students using MacOS

- Check file names from MacOS
 - Ex) ○.doc | ○.doc



Overview: Web and Web Programming



The Internet vs. The World Wide Web

What is the difference between the Internet and WWW?

Internet



WWW



source: <https://medium.com/@Samm4fresh/24-amazing-facts-about-the-internet-you-probably-didnt-know-e1f48a4c3505>, <https://nl.freepik.com/vectoren/internet>



World Wide Web

■ World Wide Web

- Abbreviated as **WWW**, commonly known as **the web**
- A system of inter-linked **hypertext** documents accessed via the Internet

■ Web browser

- View **web pages** that may contain text, images, videos, and other multimedia objects
- Navigate (browse, surf) between them via [hyperlinks](#)

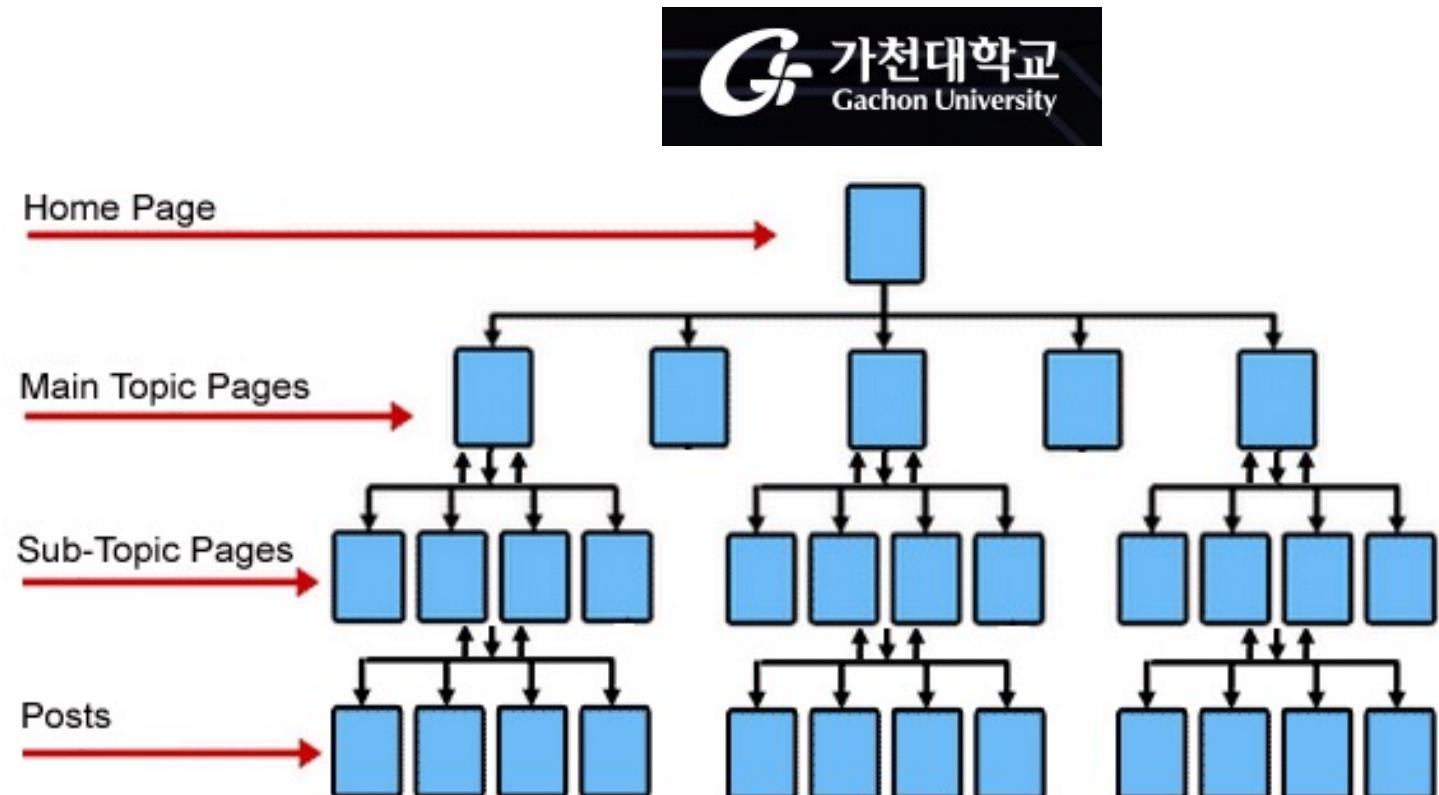


<https://www.gachon.ac.kr/kor/index.do>

source: <https://colorpageonline.com/web/hosting/>

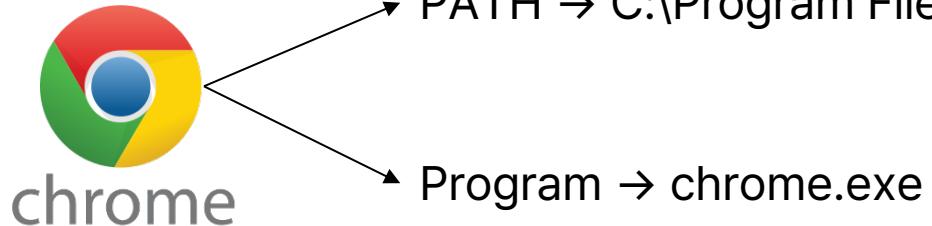
Contents of a Website

Website

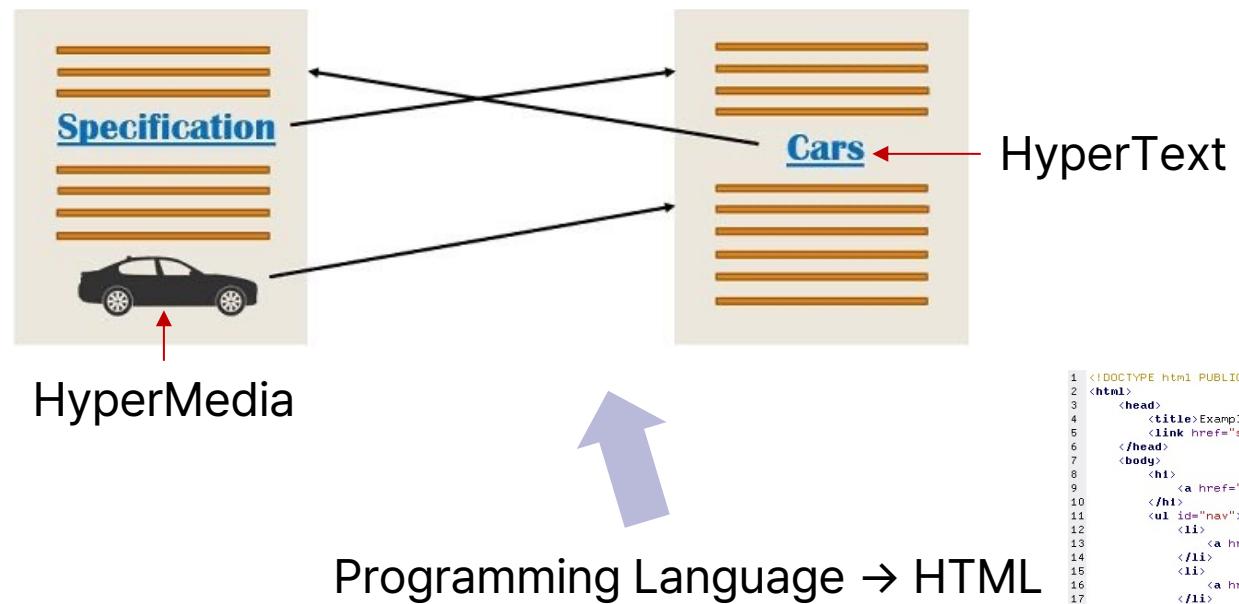




What is a Hyperlink?



Hyperlink

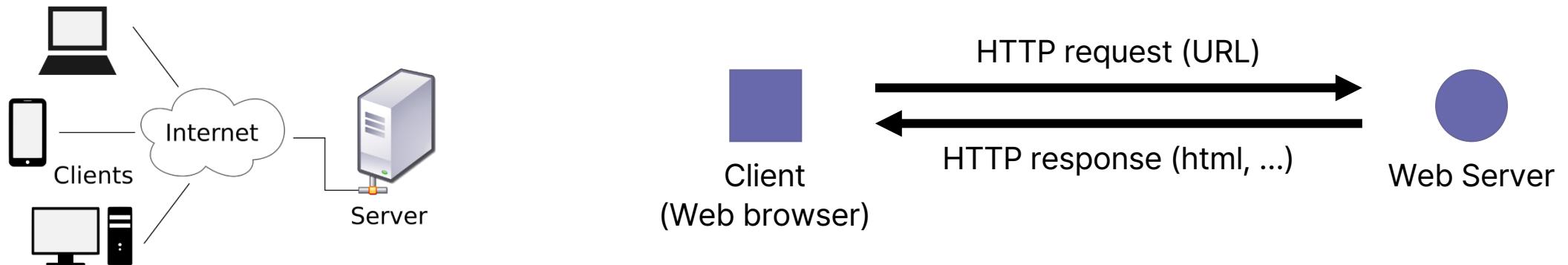




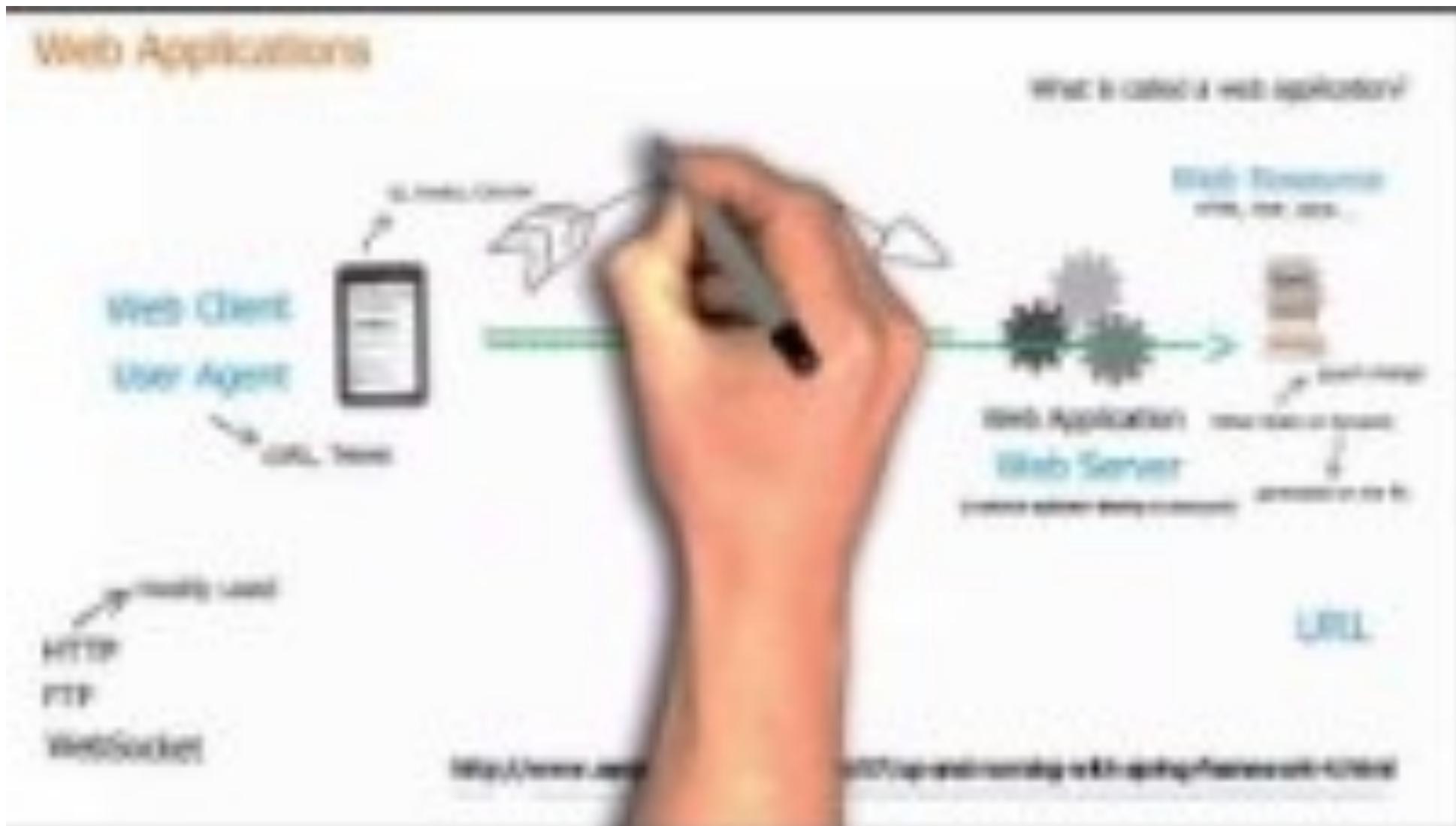
Client and Server Architecture

Client-Server communication

- HTTP: HyperText Transfer Protocol
- The client makes a **request** to the server, using a URL (e.g. `http://www.google.com/`)
- The server sends back a **response** (html, image, video, ...)
- User views and clicks on the Web page



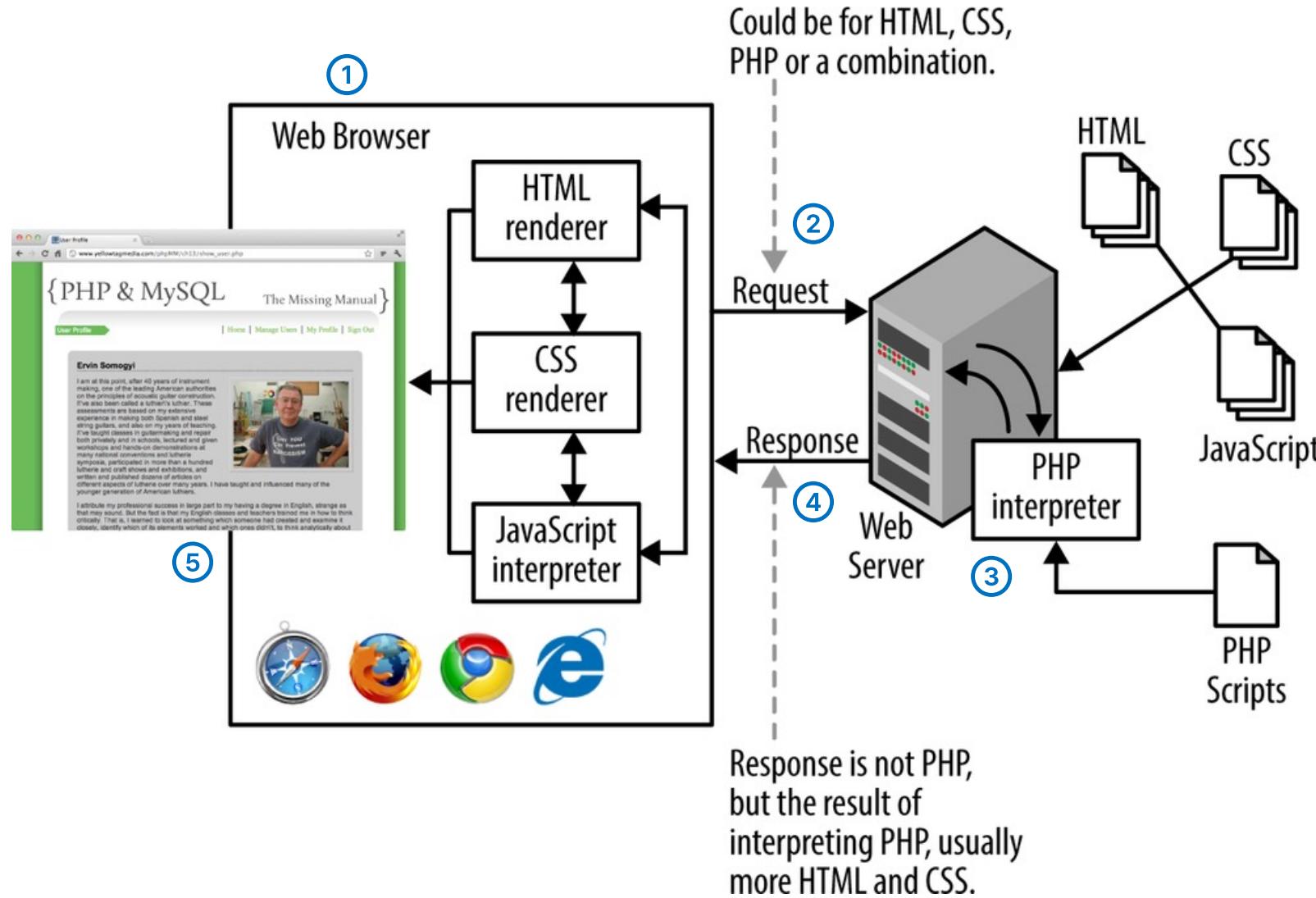
Web Application and HTTP Protocol



source: <https://youtu.be/RsQ1tFLwldY>



Web Browsers (1/4)





Web Browsers (2/4)

■ Client-side software for retrieving, presenting, and traversing information resources on the Web

- Resources:
 - Web pages, images, video, etc.
 - May contain hyperlinks for navigating to related resources

■ Web browser history (usage share)

- Apr. 1996: Netscape (89.4%), Internet Explorer (3.8%)
- Aug. 2002: Internet Explorer (96.0%), Netscape (3.4%)
- Feb. 2015: Chrome (48.7%), Firefox (16.5%) (Mobile: 33.0%), Internet Explorer (18.9%)



source: <https://gs.statcounter.com/>

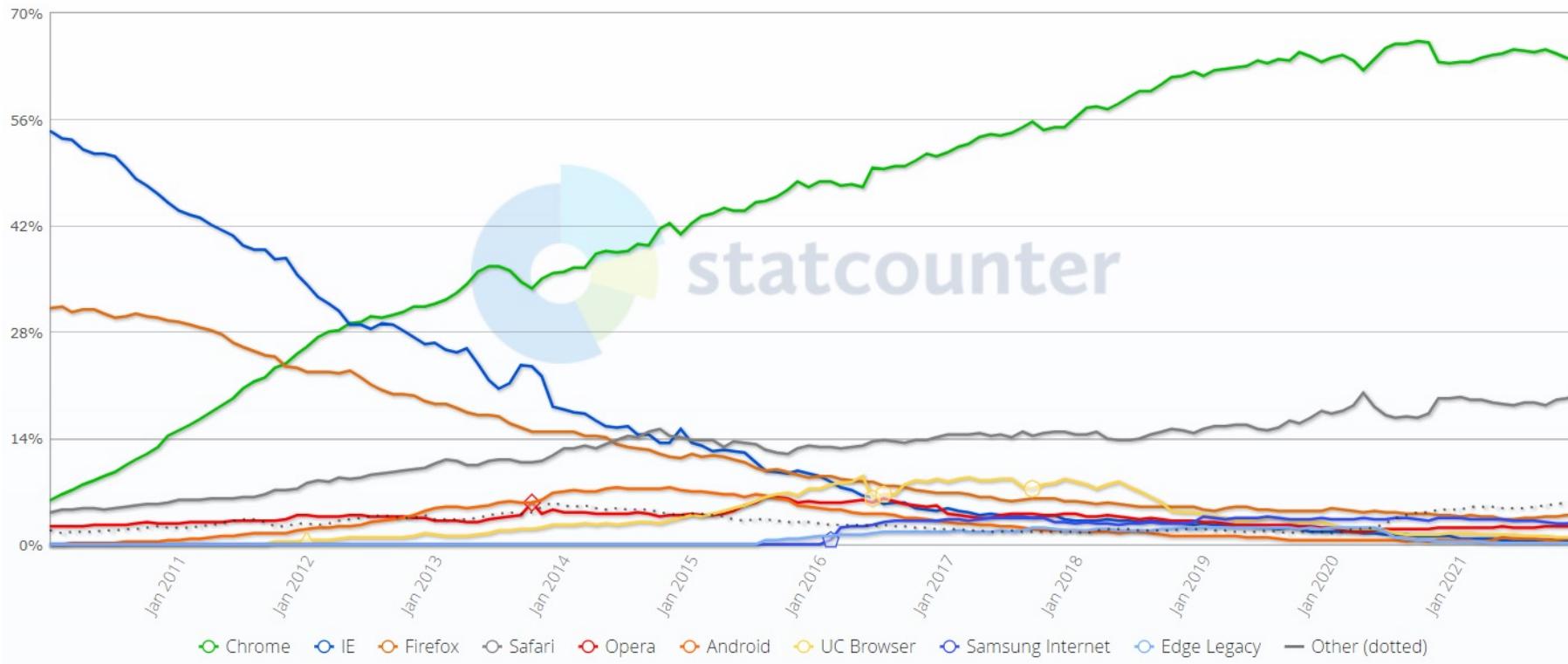


Web Browsers (3/4)

Browser Market Share Worldwide

Jan 2010 - Dec 2021

Edit Chart Data

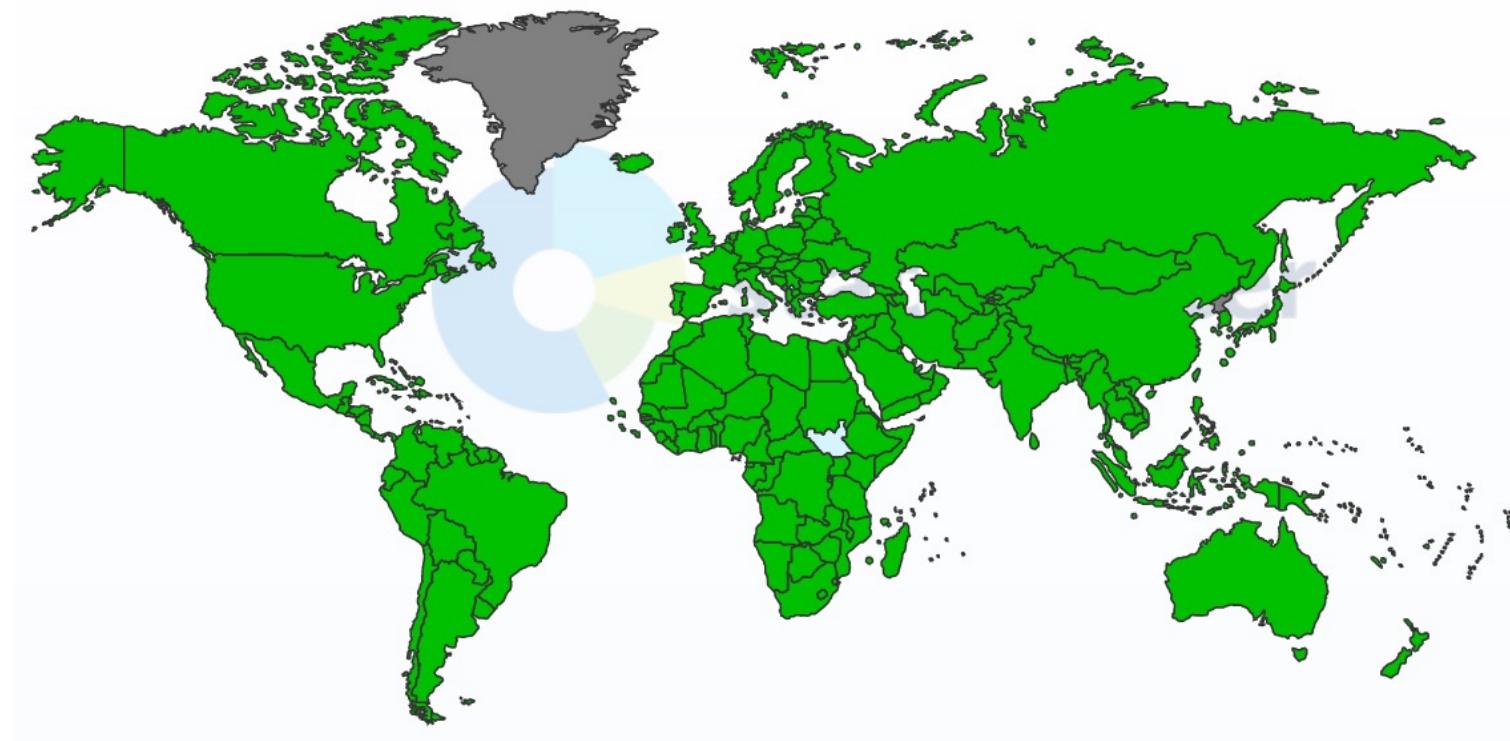


source: <https://gs.statcounter.com/browser-market-share#monthly-201001-202112>



Web Browsers (4/4)

Browser Market Share Worldwide (Dec. 2021)



source: <https://gs.statcounter.com/browser-market-share#monthly-af-202002-map>



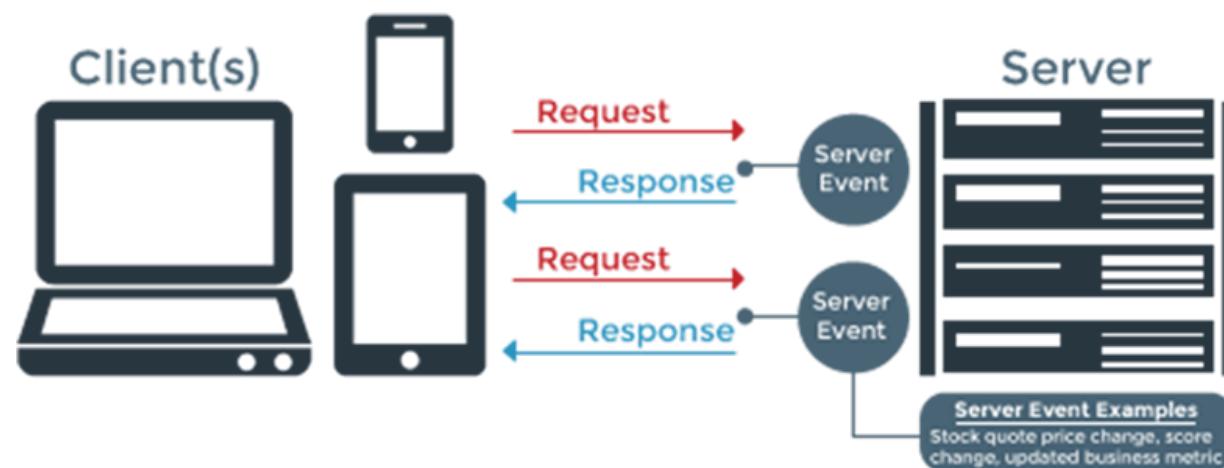
Web Servers (1/2)

■ Machines/programs that provide documents to the browser

- Creates and stores hypertext documents and media (image, sound, video, etc.) as resources

■ Popular web servers

- Linux Apache
- Microsoft Internet Information Services (IIS)

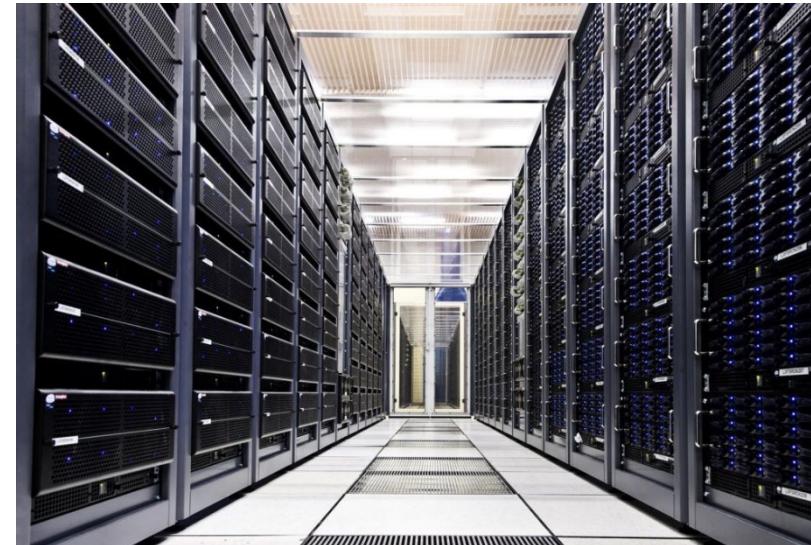
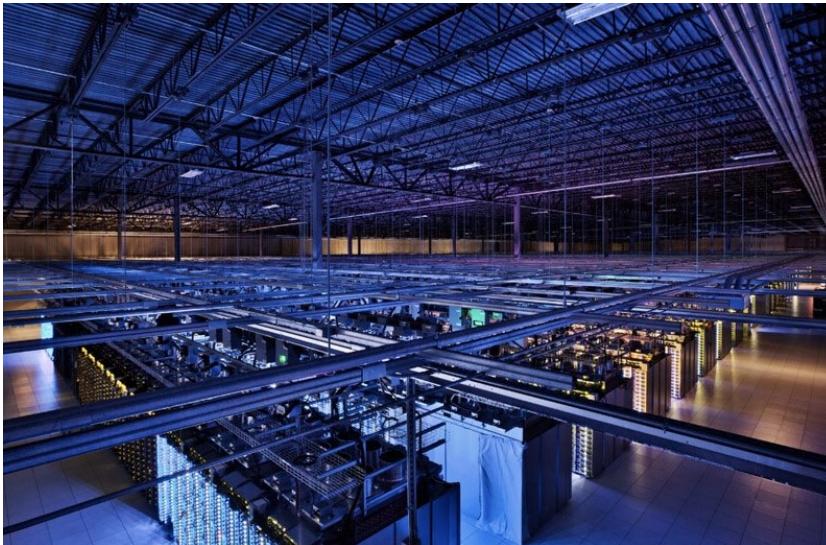




Web Servers (2/2)

■ Google web servers(GWS)

- Web server farm
- <https://www.youtube.com/watch?v=XZmGGAbHqa0>



■ Facebook data center

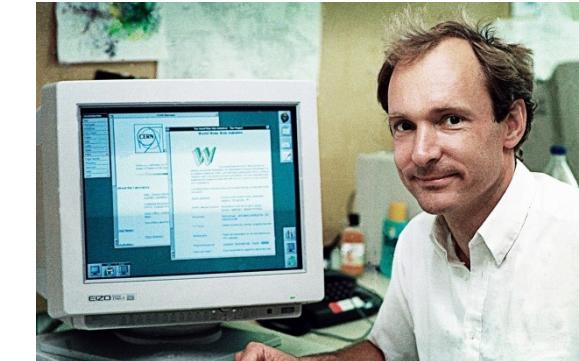
- <https://youtu.be/X9ELENWZqLE>



Web History (1/2)

■ 1989

- Tim Berners-Lee at CERN (European laboratory for particle physics) proposed the World Wide Web to use the Internet for document sharing



■ 1991

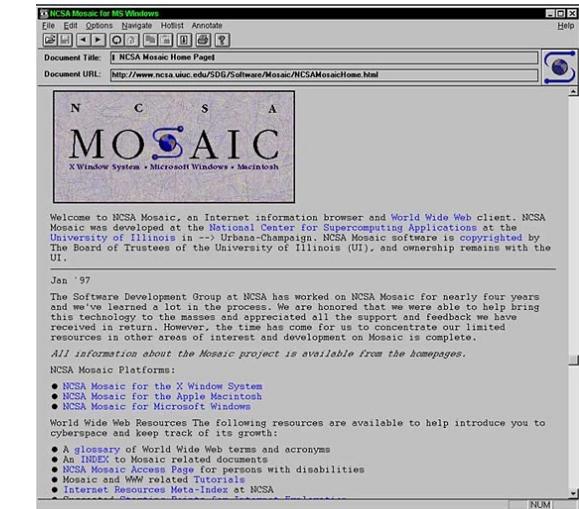
- WWW was released to the world

■ 1993

- HTML was defined (Berners-Lee)

■ 1993

- Mosaic (graphical Web browser) was released from UIUC (Marc Andreessen and his team)





Web History (2/2)

■ 1994

- Netscape, founded by Andreessen, released Netscape Navigator
 - On-the-fly display of web pages: text and graphics appeared on the screen as the web page is downloaded
 - Tolerable for dial-up



■ 1994

- W3C was founded (Berners-Lee)

■ 1995

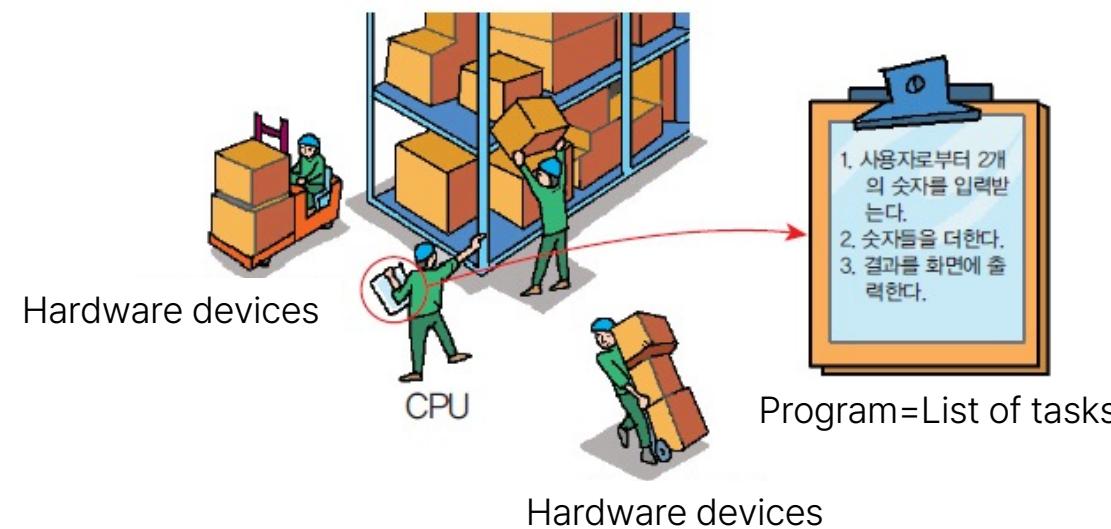
- HTTP 1.0 was proposed (Berners-Lee)



What is a Program?

Program

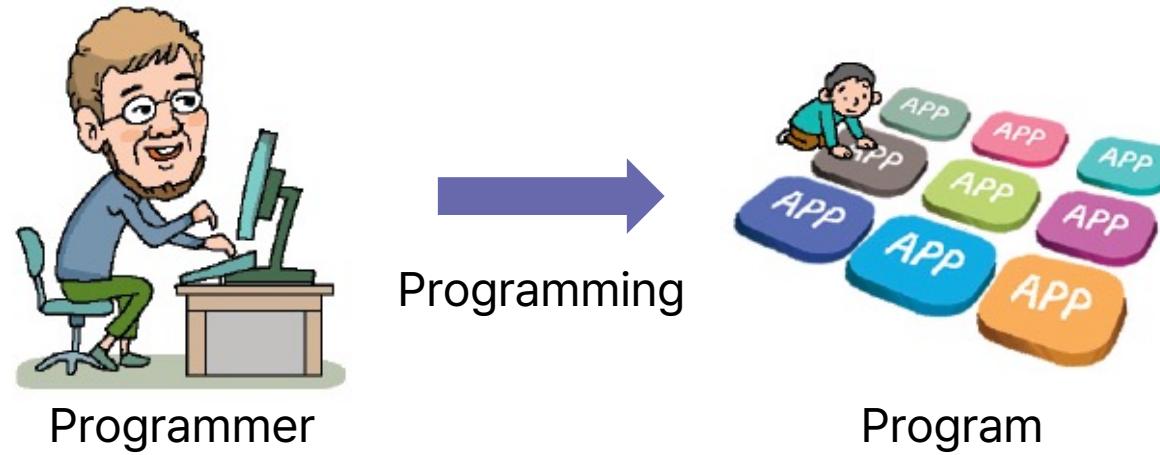
- To work on a computer, a human must give the computer a list of detailed instructions.
- A program is a list of instructions that the computer will perform.





Program, Programmer

- The person who creates the program is called a programmer.
- Programmers create programs in a programming language.





Programming Language

■ Computers can't understand a human languages!

```
>>> 안녕!  
>>> Hello!  
>>> Bonjour  
>>> print("Hello")
```

The only language that computers understand is the programming language.





What is Web Programming?

■ Web Programming

- This course will teach students how to use Hyper Text Markup Language(**HTML**),**CSS**(Ca scading Style Sheets), and **JavaScript** programming languages to create websites.
- You will learn how to use them appropriately and how to combine them to build flexible, u ser friendly and robust Websites.





End of Course Orientation

