

# Gjuhët Web dhe Teknologjitë

Ligjërata 1

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# Hyrje

- ▶ Interneti dhe teknologjitë e sotme janë të dizajnuara ashtu që të jenë portativ, dhe na lejojnë të krijojmë web faqe të cilat funksionojnë në një gamë të madhe të paisjeve.
- ▶ Teknologjitë për programim në anën e klientit përdoren për të krijuar web faqe dhe aplikacione të cilat ekzekutohen te klienti (shfletuesi në paisjen e përdorësit)
- ▶ Programimi në anën e serverit – aplikacionet të cilat i përgjigjen kërkesave prej klientëve p.sh. Kërkimi në internet, porositë online, blerja në eBay, etj.

# Hyrje (vazhdim)

## *Ligji i Murit (Moore's Law)*

- ▶ Përçdo 1–2 vite, kapaciteti i kompjuterëve përafërsisht dyfishohet pa ndikim të madh në çmim.
- ▶ Ky trend i shquar quhet Ligji i Murit.
- ▶ Ky ligj aplikohet veqanërisht te sasia e memorjes që kompjuterët kanë (RAM), sasia e memories dytësore (HDD) dhe shpejtësia e procesorit (CPU)
- ▶ Një zhvillim i ngjajshëm ndodh edhe në fushën e komunikimit, ku çmimet zbresin dhe shpejtësia rritet për shkak të konkurrencës intensive.

# Interneti në Industri dhe hulumtim

- ▶ Në vazhdim kemi disa shembuj se si kompjuterët dhe Interneti përdoren në Industri dhe Hulumtim

Name	Description
Electronic health records	These might include a patient's medical history, prescriptions, immunizations, lab results, allergies, insurance information and more. Making this information available to health care providers across a secure network improves patient care, reduces the probability of error and increases overall efficiency of the health care system.
Human Genome Project	The Human Genome Project was founded to identify and analyze the 20,000+ genes in human DNA. The project used computer programs to analyze complex genetic data, determine the sequences of the billions of chemical base pairs that make up human DNA and store the information in databases which have been made available over the Internet to researchers in many fields.

**Fig. 1.1** | Computers and the Internet in health care.

Name	Description
AMBER™ Alert	The AMBER (America's Missing: Broadcast Emergency Response) Alert System is used to find abducted children. Law enforcement notifies TV and radio broadcasters and state transportation officials, who then broadcast alerts on TV, radio, computerized highway signs, the Internet and wireless devices. AMBER Alert recently partnered with Facebook, whose users can "Like" AMBER Alert pages by location to receive alerts in their news feeds.
World Community Grid	People worldwide can donate their unused computer processing power by installing a free secure software program that allows the World Community Grid ( <a href="http://www.worldcommunitygrid.org">www.worldcommunitygrid.org</a> ) to harness unused capacity. This computing power, accessed over the Internet, is used in place of expensive supercomputers to conduct scientific research projects that are making a difference, providing clean water to third-world countries, fighting cancer, growing more nutritious rice for regions fighting hunger and more.

**Fig. 1.2** | Projects that use computers and the Internet for social good.

Name	Description
One Laptop Per Child (OLPC)	One Laptop Per Child ( <a href="http://one.laptop.org">one.laptop.org</a> ) is providing low-power, inexpensive, Internet-enabled laptops to poor children worldwide—enabling learning and reducing the digital divide.

**Fig. 1.2** | Projects that use computers and the Internet for social good.



Name	Description
Cloud computing	Cloud computing allows you to use software, hardware and information stored in the “cloud”—i.e., accessed on remote computers via the Internet and available on demand—rather than having it stored on your personal computer. Amazon is one of the leading providers of public cloud computing services. You can rent extra storage capacity using the Amazon Simple Storage Service (Amazon S3), or augment processing capabilities with Amazon’s EC2 (Amazon Elastic Compute Cloud). These services, allowing you to increase or decrease resources to meet your needs at any given time, are generally more cost effective than purchasing expensive hardware to ensure that you have enough storage and processing power to meet your needs at their peak levels. Business applications (such as CRM software) are often expensive, require significant hardware to run them and knowledgeable support staff to ensure that they’re running properly and securely. Using cloud computing services shifts the burden of managing these applications from the business to the service provider, saving businesses money.

**Fig. 1.3** | Examples of computers and the Internet in infrastructure. (Part I of 3.)



Name	Description
GPS	Global Positioning System (GPS) devices use a network of satellites to retrieve location-based information. Multiple satellites send time-stamped signals to the GPS device, which calculates the distance to each satellite based on the time the signal left the satellite and the time the signal arrived. This information is used to determine the exact location of the device. GPS devices can provide step-by-step directions and help you easily find nearby businesses (restaurants, gas stations, etc.) and points of interest. GPS is used in numerous location-based Internet services such as check-in apps to help you find your friends (e.g., Foursquare and Facebook), exercise apps such as RunKeeper that track the time, distance and average speed of your outdoor jog, dating apps that help you find a match nearby and apps that dynamically update changing traffic conditions.
Robots	Robots can be used for day-to-day tasks (e.g., iRobot's Roomba vacuum), entertainment (e.g., robotic pets), military combat, deep sea and space exploration (e.g., NASA's Mars rover) and more. RoboEarth ( <a href="http://www.roboearth.org">www.roboearth.org</a> ) is "a World Wide Web for robots." It allows robots to learn from each other by sharing information and thus improving their abilities to perform tasks, navigate, recognize objects and more.

**Fig. 1.3** | Examples of computers and the Internet in infrastructure. (Part 2 of 3.)

Name	Description
E-mail, Instant Messaging, Video Chat and FTP	Internet-based servers support all of your online messaging. E-mail messages go through a mail server that also stores the messages. Instant messaging (IM) and Video Chat apps, such as AIM, Skype, Yahoo! Messenger and others allow you to communicate with others in real time by sending your messages and live video through servers. FTP (file transfer protocol) allows you to exchange files between multiple computers (e.g., a client computer such as your desktop and a file server) over the Internet using the TCP/IP protocols for transferring data.

**Fig. 1.3** | Examples of computers and the Internet in infrastructure. (Part 3 of 3.)

Name	Description
iTunes and the App Store	iTunes is Apple's media store where you can buy and download digital music, movies, television shows, e-books, ringtones and apps (for iPhone, iPod and iPad) over the Internet. Apple's iCloud service allows you to store your media purchases "in the cloud" and access them from any iOS (Apple's mobile operating system) device. In June 2011, Apple announced at their World Wide Developer Conference (WWDC) that 15 billion songs had been downloaded through iTunes, making Apple the leading music retailer. As of July 2011, 15 billion apps had been downloaded from the App Store ( <a href="http://www.apple.com/pr/library/2011/07/07Apples-App-Store-Downloads-Top-15-Billion.html">www.apple.com/pr/library/2011/07/07Apples-App-Store-Downloads-Top-15-Billion.html</a> ).
Internet TV	Internet TV set-top boxes (such as Apple TV and Google TV) allow you to access an enormous amount of content on demand, such as games, news, movies, television shows and more.

**Fig. 1.4** | Examples of computers and the Internet in entertainment. (Part 1 of 2.)

Name	Description
Game programming	<p>Global video game revenues are expected to reach \$65 billion in 2011 (<a href="http://uk.reuters.com/article/2011/06/06/us-videogames-factbox-idUKTRE75552I20110606">uk.reuters.com/article/2011/06/06/us-videogames-factbox-idUKTRE75552I20110606</a>). The most sophisticated games can cost as much as \$100 million to develop. Activision's <i>Call of Duty 2: Modern Warfare</i>, released in 2009, earned \$310 million in just one day in North America and the U.K. (<a href="http://news.cnet.com/8301-13772_3-10396593-52.html?tag=mncol;txt">news.cnet.com/8301-13772_3-10396593-52.html?tag=mncol;txt</a>)! Online <i>social gaming</i>, which enables users worldwide to compete with one another over the Internet, is growing rapidly. Zynga—creator of popular online games such as <i>Farmville</i> and <i>Mafia Wars</i>—was founded in 2007 and already has over 265 million monthly users. To accommodate the growth in traffic, Zynga is adding nearly 1,000 servers each week (<a href="http://techcrunch.com/2010/09/22/zynga-moves-1-petabyte-of-data-daily-adds-1000-servers-a-week/">techcrunch.com/2010/09/22/zynga-moves-1-petabyte-of-data-daily-adds-1000-servers-a-week/</a>)!</p>

**Fig. 1.4** | Examples of computers and the Internet in entertainment. (Part 2 of 2.)

# HTML5

- ▶ HTML (HyperText Markup Language) është gjuhë e veçantë kompjuterike e quajtur *markup language* e dizajnuar për specifikimin e përmbajtjes dhe strukturës së web faqeve.
- ▶ HTML na mundëson të krijojmë përmbajtje e cila mund të paraqitet në një fushë të gjërë të paisjeve që kanë qasje në internet si telefonat e menqur, dektopët, laptopët, tabletët, etj.
- ▶ Një version më “strikt” i HTML-së i quajtur *XHTML (Extensible HyperText Markup Language)* është i bazuar në XML (eXtensible Markup Language), dhe përdoret shpesh sot.
- ▶ Shumë prej teknologjive me të cilat do të njoftohemi më vonë krijojnë web faqe në form të XHTML dokumenteve, por trendi po shkon drejt HTML5 i cili është versioni më i ri i HTML-së

# Cascading Style Sheets (CSS)

- ▶ Edhe pse HTML5 ofron disa aftësi për kontrollin e prezantimit të një dokumenti, është më mirë që të mos përzihen prezantimi me përmbajtje.
- ▶ Cascading Style Sheets (CSS) përdoren për të specifikuar prezantimin, ose stilimin e elementeve në një faqe interneti (p.sh., fontet, ndarjet, madhësitë, ngjyrat, pozicionimin).
- ▶ CSS është projektuar për të stiluar web faqet pavarësisht prej përmbajtjes dhe strukturës së tyre.
- ▶ Duke ndarë stilimin nga përmbajtja dhe struktura e faqes, ne lehtë mund të ndryshojmë pamjen e faqeve të një web sajti të tërë, ose një pjesë të një web sajti, thjesht duke shkëmbyer një fletë stili me një tjetër.
- ▶ CSS3 është versioni i tanishëm i CSS-së.



# JavaScript

- ▶ JavaScript ndihmon për të ndërtuar faqet web dinamike (p.sh., faqet që mund të modifikohen në përgjigje të ngjarjeve të inicuar nga përdoruesi, etj) dhe aplikacione kompjuterike.
- ▶ Ajo na mundëson për të bërë programimin në anën e klientit të web aplikacioneve.
- ▶ JavaScript është krijuar nga Netscape dhe së bashku me Microsoft-in kanë ndikuar në standardizimin e JavaScript-it.
- ▶ JavaScript është një gjuhë skriptuese portative. Programet e shkruara në JavaScript mund të ekzekutohen në shfletues të një game të gjerë të pajisjeve.



# Shfletuesit dhe portabiliteti i tyre

- ▶ Sigurimi i një pamjeje të njëjtë te klientët me shfletues të ndryshëm është një nga sfidat më të mëdha të zhvillimit të web aplikacioneve.
- ▶ Aktualisht nuk ekziston një standard të cilit shtëpitë softverike duhet ti përmbahen kur krijojnë web shfletues.
- ▶ Edhe pse shfletuesit ndajnë një grup të përbashkët karakteristikash, çdo shfletues mund të paraqesë faqet ndryshe.
- ▶ Shfletuesit paraqiten në shumë versione dhe në shumë platforma të ndryshme (Microsoft Windows, Apple Macintosh, Linux, UNIX, etj).
- ▶ Krijuesit shtojnë karakteristika në secilin version të ri që ndonjëherë rezulton në papajtueshmëri ndërmjet platformave.

# Përkrahja (support)

- ▶ Është e vështirë të krijohen web faqe që paraqiten njëjtë në të gjitha versionet e çdo shfletuesi.
- ▶ Përkrahja për karakteristika të HTML5, CSS3 dhe JavaScript ndryshon nga një shfletues në tjetrin.
- ▶ (<http://html5test.com/>) vlerëson çdo shfletues bazuar në përkrahjen e tij për tiparet e fundit të këtyre standardeve në zhvillim.
- ▶ <http://caniuse.com/> paraqet listën e karakteristikave që përkrahen nga çdo shfletues.

# jQuery

- ▶ jQuery (jQuery.org) është aktualisht biblioteka më e popullarizuara e JavaScript.
- ▶ jQuery thjeshton programimin në JavaScript duke e bërë më të lehtë manipulimin e elementeve të një web faqe dhe interaksionin me serverët nga shfletuesit e ndryshëm.
- ▶ Ajo ofron një bibliotekë me kontrolla GUI që mund të përdoren për të përmirësuar dukjen e web faqeve.

# Validimi i HTML, CSS dhe JavaScript

- ▶ Ne duhet të përdorim sintaksë të rregullt të HTML5, CSS3 dhe JavaScript për të siguruar që shfletuesit të procesojnë dokumentet tona si duhet.

Technology	Validator URL
HTML5	<a href="http://validator.w3.org/">http://validator.w3.org/</a> <a href="http://html5.validator.nu/">http://html5.validator.nu/</a>
CSS3	<a href="http://jigsaw.w3.org/css-validator/">http://jigsaw.w3.org/css-validator/</a>
JavaScript	<a href="http://www.javascriptlint.com/">http://www.javascriptlint.com/</a> <a href="http://www.jshint.com/">http://www.jshint.com/</a>

**Fig. 1.6** | HTML5, CSS3 and JavaScript validators.

# Demonstrime

URL	Description
<a href="https://developer.mozilla.org/en-US/demos/">https://developer.mozilla.org/en-US/demos/</a>	Mozilla's DemoStudio contains numerous HTML5, canvas, CSS3 and JavaScript demos that use audio, video, animation and more.
<a href="http://js-fireworks.appspot.com/">http://js-fireworks.appspot.com/</a>	Enter your name or message, and this JavaScript animation then writes it using a fireworks effect over the London skyline.
<a href="http://9elements.com/io/projects/html5/canvas/">http://9elements.com/io/projects/html5/canvas/</a>	Uses HTML5 canvas and audio elements to create interesting effects, and ties in tweets that include the words "HTML5" and "love" (click anywhere on the screen to see the next tweet).
<a href="http://www.zachstronaut.com/lab/text-shadow-box/text-shadow-box.html">http://www.zachstronaut.com/lab/text-shadow-box/text-shadow-box.html</a>	Animated demo of the CSS3 text-shadow effect. Use the mouse to shine a light on the text and dynamically change the direction and size of the shadow.

**Fig. 1.7** | HTML5, CSS3, JavaScript, canvas and jQuery demos.  
(Part 1 of 4.)

URL	Description
<a href="http://clublime.com/lab/html5/sphere/">http://clublime.com/lab/html5/sphere/</a>	Uses an HTML5 canvas to create a sphere that rotates and changes direction as you move the mouse cursor.
<a href="http://spielzeugz.de/html5/liquid-particles.html">http://spielzeugz.de/html5/liquid-particles.html</a>	The Liquid Particles demo uses an HTML5 canvas. Move the mouse around the screen and the “particles” (dots or letters) follow.
<a href="http://www.paulbrunt.co.uk/bert/">http://www.paulbrunt.co.uk/bert/</a>	Bert’s Breakdown is a fun video game built using an HTML5 canvas.
<a href="http://www.openrise.com/lab/Flower-Power/">http://www.openrise.com/lab/Flower-Power/</a>	Canvas app that allows you to draw flowers on the page, adjust their colors, change the shapes of the petals and more.
<a href="http://alteredqualia.com/canvasmol/">http://alteredqualia.com/canvasmol/</a>	Uses canvas to display a 3D molecule that can be viewed from any desired angle (0–360 degrees).
<a href="http://pasjans-online.pl/">http://pasjans-online.pl/</a>	The game of Solitaire built using HTML5.

**Fig. 1.7** | HTML5, CSS3, JavaScript, canvas and jQuery demos.  
(Part 2 of 4.)

URL	Description
<a href="http://andrew-hoyer.com/experiments/cloth/">http://andrew-hoyer.com/experiments/cloth/</a>	Uses canvas to simulate of the movement of a piece of cloth. Click and drag the mouse to move the fabric.
<a href="http://www.paulrhayes.com/experiments/cube-3d/">http://www.paulrhayes.com/experiments/cube-3d/</a>	CSS3 demo allows you to use the mouse to tilt and rotate the 3D cube. Includes a tutorial.
<a href="http://www.effectgames.com/demos/canvacycle/">http://www.effectgames.com/demos/canvacycle/</a>	Animated waterfall provides a nice demo of using color in HTML5 canvas.
<a href="http://macek.github.com/google_pacman/">http://macek.github.com/google_pacman/</a>	The Google PAC-MAN <sup>®</sup> game (a Google Doodle) built in HTML5.
<a href="http://www.benjoffe.com/code/games/torus/">http://www.benjoffe.com/code/games/torus/</a>	A 3D game similar to Tetris <sup>®</sup> built with JavaScript and canvas.
<a href="http://code.almeros.com/code-examples/water-effect-canvas/">http://code.almeros.com/code-examples/water-effect-canvas/</a>	Uses canvas and JavaScript to create a water rippling effect. Hover the cursor over the canvas to see the effect. The site includes a tutorial.
<a href="http://jqueryui.com/demos/">http://jqueryui.com/demos/</a>	Numerous jQuery demos, including animations, transitions, color, interactions and more.

**Fig. 1.7** | HTML5, CSS3, JavaScript, canvas and jQuery demos.  
(Part 3 of 4.)



URL	Description
<a href="http://lab.smashup.it/flip/">http://lab.smashup.it/flip/</a>	Demonstrates a flip box using jQuery.
<a href="http://tutorialzine.com/2010/09/html5-canvas-slideshow-jquery/">http://tutorialzine.com/2010/09/html5-canvas-slideshow-jquery/</a>	Slideshow built with HTML5 canvas and jQuery (includes a tutorial).
<a href="http://css-tricks.com/examples/Circulate/">http://css-tricks.com/examples/Circulate/</a>	Learn how to create an animated circulation effect using jQuery.
<a href="http://demo.tutorialzine.com/2010/02/photo-shoot-css-jquery/demo.html">http://demo.tutorialzine.com/2010/02/photo-shoot-css-jquery/demo.html</a>	Uses jQuery and CSS to create a photoshoot effect, allowing you to focus on an area of the page and snap a picture (includes a tutorial).

**Fig. 1.7** | HTML5, CSS3, JavaScript, canvas and jQuery demos.  
(Part 4 of 4.)

**Pyetje???**