

ADDIS ABABA UNIVERSITY

ADDIS ABABA INSTITUTE OF TECHNOLOGY

CENTER OF INFORMATION TECHNOLOGY AND SCIENTIFIC COMPUTING

DEPARTMENT OF SOFTWARE ENGINEERING

FUNDAMENTALS OF WEB DEVELOPMENT

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1. The History of Internet

The Internet and its architecture have grown in evolutionary fashion from modest beginnings, rather than from a Grand Plan. It is a worldwide system of interconnected computer networks that use the Transmission Control Protocol (TCP) or Internet Protocol (IP) set of network protocols to reach billions of users. It began at in the United States in the early 1996s. The US department of defense established Advanced Research Projects Agency (ARPA) in 1957. ARPA’s mission was to produce innovative research ideas, to provide meaningful technological impact that went far beyond the convention evolutionary development approaches.

ARPANET started internet as the pioneering packet switching network, but soon to include packet satellite networks, ground based packet radio networks and other networks. And computers were added quickly to the ARPANET in the following years, and work proceeded on completing a functionally complete Host-to-Host protocol and other network software, in December 1970 the network working grouping finished the initial ARPANET Host-to-Host protocol, called the Network Control Protocol (NCP).

The internet today is widespread information infrastructure, the initial prototype of what is often called National (Global Galactic) information infrastructure. Its influence reaches not only to the technical fields of computer communications but throughout society as we move toward increasing use of online tools to accomplish electronic commerce, information acquisition, and community operations. Because of Domain Name System (DNS) and World Wide Web (www) internet become a global phenomenon.

1. Observation of different websites from web archive

Google

* The first two years of google log is similar having three different colors and wacky design, in the year 1998 logo showcased the hallmark primary color schema still in use except for the exclamation point at the end.
* In 1999 it transitioned from a homepage with many links into a simplified search box placed in the middle under the logo except for 2000 that appeared to be side by side.
* In 2010, Google moved the links to access different types of search result to the left side of the page.
* From 2018 Google’s homepage is clean and simple and appeared mostly the same since 2011.
* It includes voice search and once can customize the page.

Yahoo

* From year to year the search bar is eliminated.
* The logo has been changed and from 1997 to 2006 the position of the logo were in the middle of the homepage with many links but after 2006 its position were change to the top left corner.

YouTube

* In the early page of YouTube’s first video player there was no timer, full screen button, video rating and subscription.
* The website has tabs leading to one’s profile, direct messages, uploaded videos, favorite videos and a homepage.
* The body part were in the middle of the format layout and the back ground color is usually white.
* The logo is changed once or twice within 15 years of time period otherwise it is more consistent, however, the first video player had an enormous logo water mark in the bottom right corner.
* Starting from 2012 YouTube homepage has a very clean layout with an expanded menu of options and easy filter mechanisms.
* In 2013 YouTube’s homepage stared to resemble to the homepage looks like today.

Reddit

* The logo and its position is basically the same thought the years although they made a little change recently.
* In the past few years, Reddit – a community platform for submitting, commenting and rating links and text pasts has grown exponentially, from a small community of users into one of the largest online communities on the web.

Amazon

* The color schema of the site was typical for1995 – lots of gray; its contents become less colorful, vision friendly and more consistent color combination.
* Amazon’s logo went through several changes and additional iterations. In 2000, the now iconic logo with a custom type face created.
* The tabs were reined in and the categories were to the left sidebar area for more than 4 years.
* In 2015 the homepage moved to a modular design.
* Lately it transform into more Spartan look with fewer items on the homepage.

Wikipedia

* Its encyclopedia feature includes images with descriptive links and publishes articles.
* In 2003, the homepage add more color features but no images.
* The logo they use today is updated in 2010 and most of the years the logo placed on the left top corner of the homepage.

1. Types of Website
2. Business/Marketing

* Forbes

Forbes is an American business website. It features original articles on finance, industry, investing, and marketing topics. It also reports on related subjects such as technology, communications, science, politics and law.

<https://www.forbes.com/>

* CNBC

CNBC is an American basic cable and satellite business news television channel and site that is owned by the NBCUniversal News Group, a unit of the NBCUniversal Television Group division of NBCUniversal. The network and its international spinoffs cover business headlines and provide live coverage of financial markets.

<https://www.cnbc.com/>

* Bloomberg

Bloomberg is a media conglomerate that is a provider of financial news and information, research, and financial data. The main revenue earner for the company is its Bloomberg Terminal, which provides snapshot and detailed information about financial markets.

<http://bloomberg.com/>

* The Wall Street Journal

The Wall Street Journal is a United States Business-focused, English-language international daily newspaper based in New York City, international editions also available in Chinese and Japanese. The journal, along with its Asian and European editions, is published six days a week by Dow Jones & Company, a division of News crop.

<https://www.wsj.com/>

* Business Insider

Business Insider is an American financial and business news and fast-growing website with deep financial, media, tech, and other industry verticals.

<http://businessinsider.com/>

1. Educational Websites

* Stackoverflow

Stackoverflow is a well-known online open community for developers, professional and enthusiast programmers to learn, share their programing knowledge, and build their careers.

<https://stackoverflow.com/>

* Udemy

Udemy is the world’s largest online learning and teaching educational site. It provides a platform for experts of any kind to create courses which can be offered to the public, either at no charge or for a tuition fee.

<https://www.udemy.com/>

* Edx

Edx is a massive open online course provider. It hosts online university-level courses in a wide range of disciplines to a worldwide student body, including some courses at no charge. It also conducts research into learning based on how people use its platform.

<http://www.edx.org/>

* Khan academy

Khan academy is a non-profit educational organization offers practice exercises, free educational tutorial videos and a personalized learning dashboard that empower learners to study at their own pace.

<https://www.khanacademy.org/>

* Codecademy

Codecademy is an online interactive platform that offers free coding classes in 12 different programing languages.

<https://www.codecademy.com/>

1. Wiki Websites

* Wikipedia is a multilingual online encyclopedia created and maintained as an open collaboration project by a community of volunteer editors using a wiki-based editing system. It is the largest and most popular general reference work on the World Wide Web.
* Wikihow

Wikihow is an online wiki-style community consisting of an extensive database of how to guides. Founded in 2005 by internet entrepreneur Jack Herrick, the website aims to create the world’s most helpful how-to instruction to enable everyone in the world to learn how to do anything.

* TermWiki

TermWiki is a major social learning network that allows users to learn, discover, share, and store personal terms and glossaries in 1487 domain in 97 languages. The site emphasizes collaboration, with a forum, a question/answer module, messaging features that encourage user interaction, and discussion pages on each term. The personal profile page allows users to become fans of other users, add photos, and add links and post comments on other users recent activity. TermWiki also allows companies to conduct international ad campaigns on keyword terms, for improved SEO performance.

* WikiArt

WikiArt is an online, user editable visual art encyclopedia. Based upon a statement in its 2013 financial report. The site appears to have been online since 2010. They claim to have reached 75,000 paintings as of June 2012 Project aims to create high quality, complete and well-structured online repository of fine art.

1. Personal Website

* Gary Sheng

Gary Sheng include logos and clickable links that allow his software engineering and web development skills to shine. Any visitor can scroll down his page to view all of the website's categories ("About Me," "My Passion," etc.), or jump to a specific page using the top navigation. The "My System" section reads like a company mission statement, and this personal touch helps humanize his work and make him more memorable.

<http://www.garysheng.com/>

* Quinton Harris

Quinton Harris uses photos to tell his personal story and it reads kind of like a cool, digital scrapbook. It covers all the bases of a resume and then some by discussing his educational background, work experience, and skills in a highly visual way.

<http://quinntonharris.strikingly.com/>

* Pascal van Gemert

Pascal van Gemert uses an extended scroll bar to keep visitors from having to navigate to a different page when learning about him. He also visualizes his career in different ways between Profile, Experience, Skills, and Projects while using consistent teal color to unite all of his resume contents under one brand.

<http://www.pascalvangemert.nl/>

* Katie Cullinan

Katie Cullinan is a designer from United States who has unique landing page populated with puzzle peces. As seems to be the current trend with portfolio sites these days, she brings only what is absolutely necessary some samples of her work and an About page, which includes her contact details.

<http://www.katie-cullinan.com/>

* Pauline Osmont

Pauline Osmont has stamped her charming personality with French chic on the UI. The gorgeous signature takes up the central position, reflecting the delicate and artistic nature of the designer. The website balances lots of images, producing powerful yet not overwhelming impact.

http://www.paulineosmont.com/

1. News Websites

* NBCNEWS

NBCNEWS is an American based broadcasting television network, formerly known as the National Broadcasting Company (NBC).The website has a huge traffic base in both the US and Europe and also the social media handles are fairly loved by many people.

<https://www.nbcnews.com/>

* CNN

CNN is one of the fastest growing online news portals and broadcasting television network on the planet. The fan base is so huge that the website also has its own App. They even have a TV news channel which is viewed by millions of viewers across the globe.

<https://edition.cnn.com/>

* Fox News

Fox news is based on United States television news channel owned by “Fox Entertainment Group”. The combination of blue and white colors on the website appeals to a lot of people. It also has similar news sections as we mentioned earlier in the above yahoo news.

<https://www.foxnews.com/>

* New York Times

New York Times an American based newspaper from New York City. Due to its high popularity, as we already mentioned earlier the website receives the love of nearly 70 million unique visitors every month. The layout of the website is similar to a traditional newspaper which makes it even more unique to its competitors.

<https://www.nytimes.com/>

* BBC(British Broadcasting Corporation)

BBC is a very well-known online news division of British Broadcasting Corporation. The layout of the website has a very appealing color combination which is surely loved by many people universally and clearly it does.

<https://www.bbc.co.uk/news>

1. Informational Websites

* FreshBooks

FreshBooks tell you the real stories, explaining the reasons why you should buy the product. In addition, you will find a cool sub-headline that says: “Join over ten million business owners using FreshBooks.

<https://www.freshbooks.com>

* Conde Nast

Conde Nast is a global media company that produces some of the world's leading print, digital, video and social brands. These include Vogue, GQ, The New Yorker, Vanity Fair, Wired and Architectural Digest (AD), Conde Nast Traveler and La Cucina Italiana, among others.

<https://www.condenast.com>

* Mentalfloss

Mentalfloss is an online magazine and its related American digital, print, and e-commerce Media Company focused on millennial it delivers fun and shareable content in an upbeat and witty environment.

https://www. mentalfloss.com

* AWS (All Women Stalk)

AWS is a company which makes lifestyle apps for iPhone & iPod. AllWomen Stalk is the ultimate blog for allwomen. Charts can be found on various organization profiles and on Hubs pages, based on data availability.

<https://www.AllWomensTalk.com>

* Mint

Mint is an informative website for all financial life, manage your finance in one place. Mint’s primary service allows user to track bank, credit card, investment, and loan balances and transaction through a single user interface, as well as create budgets and set financial goals.

<https://www.mint.com/>

1. Blog Websites

* Mashable

Mashable is a digital media website founded by Pete Cashmore in 2005.

<https://www.mashable.com>

* Lifehacker

Lifehacker is a a weblog about life hacks and software that launched on January 31, 2005. The site was originally launched by Gawker Media and is currently owned by G/O media.

<http://www.lifehacker.com/>

* TechCrunch

TechCrunch is an American online publisher focusing on the tech industry. The company specifically reports on the business related to tech, technology news, analysis of emerging trends in tech, and profiling of new tech businesses and products.

https://www.techcrunch.com/

* Boing Boing

Boing Boing is a website, first established as a zine in 1988, later becoming a group blog. Common topics and themes include technology, futurism, science fiction, gadgets, Gadget Hackwrench, intellectual property, Disney, and left-wing politics. It twice won the Bloggies for Weblog of the Year, in 2004 and 2005.

<https://boingboing.net/>

* Engadget

Engadget is is a multilingual technology blog network with daily coverage of gadgets and consumer electronics. Engadget operates a total of ten blogs—four written in English and six international versions with independent editorial staff.

https://www.engadget.com/

1. Portal Websites

* MSN (Microsoft Network)

MSN is a web portal and related collection of Internet services. The MSN apps are a series of web-based cross-platform apps that primarily provide users information from sources that publish to MSNWeb portal from Microsoft that includes news, sports and entertainment as well as the Bing search engine.

<http://msn.com/>

* NASA(National Aeronautics and Space Administration)

NASA is a U.S. government agency that is responsible for science and technology related to air and space. The Space Age started in 1957 with the launch of the Soviet satellite Sputnik.

<http://nasa.com/>

* Federal Government portal

Federal Government portal is to allow applicants for federal grants to apply for and manage grant funds online through a common website. With a fully-functional government portal, the government could simplify grant management and eliminate redundancies. Grants.gov is unique in that it sends over 1 million email notifications at the public’s request and receives over 4 million page views weekly.

<http://www.grants.gov/>

* Scion Owners

Scion Owners site is an exclusive online resource for Scion owners. For any registered user, this site serves as a great resource for all the information you need to get the most out of owning a Scion. The well-designed extranet includes: access to the manuals and guides for your Scion, track mileage and lease details; ability to track the vehicle's major milestones on personal timeline; notifications for upcoming scheduled services, safety recalls, and more; participation in forums, local events and articles related to Scions. <https://ssl.scion.com/owners/web/pages/home>

* Auto Zone

AutoZone built is an employee portal known as the Daily Online Communications (DOC) to help serve its 47,000 store employees. DOC is the place for employees to find what they need to know about their weekly tasks, benefits, and training. Also, the numerous port lets included with Literacy make any content and style changes easy and fast; this has proven beneficial in keeping information up-to-date in a fast-moving retail environment.

<http://www.autozone.com/>

1. Social Network Websites

* Telegram

Telegram is an instant messaging network and is available across platforms in more than eight languages. However, Telegram has always focused more on the privacy and security of the messages you send over the internet by using its platform. Telegram has provided encryption feature. Therefore it empowers you to send messages that are encrypted and self-destructive.

<https://www.telegram.com>

* Pinterest

Pinterest is a photo sharing and visual bookmarking social media site or that enables you to find new ideas for your projects and save them. So, you can do DIY (Do It Yourself) tasks or home improvement projects, plan your travel agenda and so on by using Pinterest.

<https://www.pinterest.com/>

* Tumblr

Tumblr serves as a social media cum micro blogging platform that can be used to find and follow things that you like. You can also use it to post anything, including multimedia, to a short-form blog. Moreover, it gives you the flexibility to customize almost everything.

<https://www.tumblr.com/login>

* Twitter

Twitter is social networking site enables you to post short text messages (called tweets), containing a limited number of characters (up to 280), to convey your message to the world. With the growing craze for online shopping, Twitter also makes it possible to promote your businesses and even shop directly through tweets.

<https://twitter.com/?lang=en>

* Skype

Skype is one of the most popular communication-based social networking platforms. It allows you to connect with people through voice calls, video calls (using a webcam) and text messaging. You can even conduct group conference calls. And, the best part is that Skype-to-Skype calls are free and can be used to communicate with anyone, located in any part of the world, over the internet.

<https://www.skype.com/en/>

1. Entertainment Websites

* Hollywood From news headlines to offbeat scoops, star interviews and photo-galleries, the site covers a lot of ground. You can also catch what’s coming to the theatres near you along with a lot of Showtime information. And of course, there are the trailers you can watch before you buy the tickets. Check out the Directory at the foot of the homepage for easy access to the site’s contents.

<http://www.hollywood.com/>

* Fox Sports news websites
* Netflix

Netflix is a streaming service that offers wide variety of award-winning TV shows, movies, anime, documentaries, and more on thousands of internet connected devices.

<https://www.netflix.com/et/>

* Spotify

Spotify is a digital music streaming service that gives instant access to millions of songs – from old favorites to the latest hits.

<https://spotify.com/>

* Preze Hilton

Preze Hilton is a well-known site brings the latest gossip from the rumor mills. The site has been put together by Mario Armando Lavandeira Jr. who has become a television personality in his own right. If you like serious news, then you might give this blog a miss. But if it’s the tabloid journalism you feed on, then it will find a place on your list.

1. Advocacy Websites

* Enviromental Defence Action Fund

[http:/www.undoit.org](http://www.undoit.org/)

* MoveOn

MoveOn is a site where millions mobilize for a better society, one where everyone can thrive. Whether it’s supporting a candidate, passing legislation, or changing our culture, MoveOn members are committed to an inclusive and progressive future. We envision a world marked by equality, sustainability, justice, and love. And we mobilize together to achieve it. <https://front.moveon.org/>

* The Nature Conservancy

The Nature Conservancy – is a global environmental nonprofit working to create a world where people and nature can thrive. It has grown to become one of the most effective and wide-reaching environmental organizations in the world.

<http://nature.org/>

* Sierra Club

Sierra Club – is the most enduring and influential grassroots environmental organization in the United States. It amplify the power of our 3.8 million members and supporters to defend everyone’s right to a healthy world.

<https://www.sierraclub.org/>

* Jane Goodall institute

Jane Goodall institute is global community conservation organization that advances the vision and work of Dr. Jane Goodall. By protecting chimpanzees and inspiring people to conserve the natural world we all share, we improve the lives of people, animals and the environment. Everything is connected to everyone can make a difference.

<https://www.janegoodall.org/>

1. Content Aggregator Websites

* Alltop

Alltop is one of the biggest names in content aggregation and deservedly sits in first place on this list. Alltop pulls in the latest posts from websites on a variety of topics. What’s neat about Alltop is that you can search for specific topics and then view aggregated content from some of the top blogs for that specific topic. You can also submit your own site to be listed on Alltop, though Alltop is known for being fairly picky about the sites that it accepts.

<https://alltop.com>

* WP News Desk

WP News Desk is a content aggregator website that focuses specifically on WordPress. It automatically pulls in content from a variety of WordPress blogs and companies and displays posts on the front page. Rather than needing to visit each blog individually, visitors can just click on individual articles to read the full article at the original source.

<http://wpnewsdesk.com/>

* Travel Blogger Community

Travel Blogger Community is for travel bloggers what WP News Desk is for WordPress. That is, Travel Blogger Community aggregates content from travel bloggers all around the world in one accessible place. <http://travelbloggercommunity.com/>

* Blog Engage

Blog Engage is starting to fall victim to spammy content, it’s still one of the most popular blog content aggregators out there.

<http://www.blogengage.com>

1. The guidelines for evaluating the value of a website are
2. Accuracy

Evaluating Website for accuracy:

* Reliability: Is the author affiliated with a known, respectable institution?
* Reference: do statistics and other factual information receive proper references as to their origin?
* Is the information comparable to other sites on the same topic?
* Is reference list included?

1. Authority

Authority reveals that the person, institution or agency responsible for a site has the qualifications and knowledge to do so. Evaluating a web site for authority:

* Authorship means it should be clear who develop the site.
* Contact information should be clearly provided such as email address, phone number and fax number.
* Credentials: the author should be clearly state qualification, credentials, or personal background that gives them authority to present information.

1. Coverage

It is difficult to assess the extent of coverage since depth in a site, through the use of links, can be infinite. One author may claim comprehensive coverage of a topic while another may cover just one aspect of a topic. Evaluating Website for Coverage:

:

* Dose the site claim to be selective or compressive?
* Are the topics exploded in depth?
* Do the links go outside sites rather than its own?

1. Purpose

The site’s purpose of information should be clear. Evaluating Website for Purpose:

* Dose the content support the purpose of the site?
* Is the site organized and focused?
* Are the outside links appropriate for the site?
* Is the site organized and focused?

1. Currency

It refers to the frequency of the site updating or maintaining and presenting the current information. Evaluating Website for Coverage:

* First written
* Placed on the web
* Last revised

Based on the above guidelines of evaluating the value of a websites, I choose to evaluate Google, Mint and

* Google is a simple website for anyone to use, you don’t have to be technical. The main purpose is to search in publicly accessible documents offered by the web servers and it really achieved its purpose and it is one of the world’s first and extremely fast web browser today. The coverage or the appearance is not well designed although they eventually updated it, the basic layout do not have significant changes. I can say Google’s accuracy level is very good but still have some drawbacks. Google modifies its searches according to what you have previously looked at. The authors of Google are well stated and their contact information is also stated.

Google update the website frequently depend on the new changes that happened in the world and in a year difference. The content is precise and incredibly useful as it lists out the contents that we are looking for.

* Mint