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Internet and the world wide web

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# Introduction

The internet is generally defined as global network connecting millions of computers. More than 190 countries are linked into exchange of data, news and opinions.

Unlike online services, which are centrally controlled by design, the internet is decentralized. Each internet computer, called the host, is independent.

The internet is not a synonym of World Wide Web. WWW (World Wide Web) commonly known as the web, is an information system where documents and other web resources are identified by uniform resource locator (URL), which may be interlinked by hypertext and accessible over the internet.

## Objective

As a web design and development student, we must know a lot about the internet and WWW. This document is aimed to create an overview about the internet and try to mention some websites. In my document I am trying to judge some website in my own view and this helps me to see websites differently from other people by a developer eye. Mainly this document help all the students to be an expert web developer

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## History of the internet

“The Net changed from research to commerce, U.S. to global, safe to scary”

The Internet has revolutionized the computer and communications world like nothing before. The invention of the telegraph, telephone, radio, and computer set the stage for this unprecedented integration of capabilities. The Internet is at once a world-wide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals and their computers without regard for geographic location. The Internet represents one of the most successful examples of the benefits of sustained investment and commitment to research and development of information infrastructure.

The origins of the Internet date back nearly 40 years, with the U.S. military's funding of a research network dubbed ARPANET in 1969. Since then, the Internet has undergone more than just a name change.

### Origins of the Internet

#### J.C.R. Licklider theory of galactic network

The concept of the Galactic Network was created by J.C.R. Licklider, MIT researcher and professor. Licklider's vision of a Galactic Network—a network of computers that allows users to gather data and access programs anywhere in the world—was detailed in a series of memos. The first, Man-Computer Symbiosis, was written in 1960 and detailed Licklider's thoughts on the development of interaction between humans and computers. The second memo, On-Line Man Computer Communication, was published two years later and took the Galactic Network idea further, promoting the concept of social interaction through the networking of computers. In 1968, Licklider coauthored The Computer as a Communication Device with researcher Robert Taylor. The memo discussed the idea of using online communities and systems as an efficient method of human communication.

#### Paul Baran Packet Switching History (RAND)

The packet switching concept was first invented by Paul Baran in the early 1960's, and then independently a few years later by Donald Davies. Leonard Kleinrock conducted early research in the related field of digital message switching, and helped build the ARPANET, the world's first packet switching network.

Baran invented the concept of packet switching while a young electrical engineer at RAND when he was asked to perform an investigation into survivable communications networks for the US Air Force, building on one of the first wide area computer networks created for the SAGE radar defence system.

#### Donald Davies Packet Switching History (NPL)

Davies proposed a national network in the United Kingdom and designed and built the local-area NPL network to demonstrate the technology. Many of the wide-area packet-switched networks built in the 1970s were similar "in nearly all respects" to his original 1965 design. This was independent of the work of Paul Baran in the United States who had a similar idea in the early 1960s.

It happened that the work at MIT (1961-1967), at RAND (1962-1965), and at NPL (1964-1967) had all proceeded in parallel without any of the researchers knowing about the other work.

In August 1968, after Roberts and the DARPA funded community had refined the overall structure and specifications for the ARPANET, an RFQ was released by DARPA for the development of one of the key components, the packet switches called Interface Message Processors (IMP's).

Due to Kleinrock's early development of packet switching theory and his focus on analysis, design and measurement, his Network Measurement Center at UCLA was selected to be the first node on the ARPANET. All this came together in September 1969 when BBN installed the first IMP at UCLA and the first host computer was connected. Doug Engelbart's project on "Augmentation of Human Intellect" (which included NLS, an early hypertext system) at SRI provided a second node.

One month later, when SRI was connected to the ARPANET, the first host-to-host message was sent from Kleinrock's laboratory to SRI. Two more nodes were added at UC Santa Barbara and University of Utah. These last two nodes incorporated application visualization projects, with Glen Culler and Burton Fried at UCSB investigating methods for display of mathematical functions using storage displays to deal with the problem of refresh over the net, and Robert Taylor and Ivan Sutherland at Utah investigating methods of 3-D representations over the net. Thus, by the end of 1969, four host computers were connected together into the initial ARPANET, and the budding Internet was off the ground.

Computers were added quickly to the ARPANET during 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 Group (NWG) working under S. Crocker finished the initial ARPANET Host-to-Host protocol, called the NCP. As the ARPANET sites completed implementing NCP during the period 1971-1972, the network users finally could begin to develop applications.

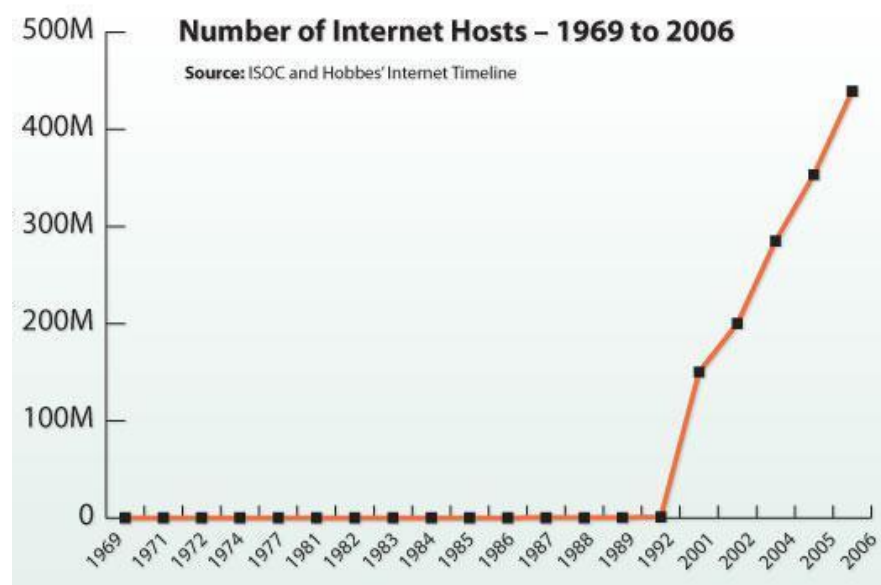


Figure 1 number of internet hosts - 1969 to 2006

## Observe and asses popular website in different years?

### 1. Facebook

2005 – 2010

The UI was extremely poor in 2005 and there is no clear signup form. Its name was called About-face.

Then it becomes relatively good in GUI but it is still poor in 2006. It got its current name at this time also. Its purpose was limited to school use only. And there are ambiguous text fields like this figure

Word in the box:

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*Figure 2 capture of text field of Facebook in 2006*

The home page has clear description about the site than it was in 2005

It becomes relatively advanced through year to year and has a good look in 2010

But still the site doesn't contain clear and easily understandable description about it for new users

2010 – 2015

The speed has increased.

The number of users grew dramatically.

2015 – 2020

The users still increased.

The UI remained consistent.

### 2. Google

2005 – 2010

Between 2005 and 2006 the user interface was extremely poor because the header, the search box and buttons are stick together

Between 2006 and 2008 even if the search box and buttons are still stick to each other, the header becomes separate from them and seems in good position (in top left corner).

2010 – 2015

Newly advanced features were included.

2015 – 2020

Localization of language according to location.

### 3. Stack Overflow

2005 – 2010

Poor design of UI.

2010 – 2015

The site became friendly.

The community of the site grew.

2015 – 2020

#### 4. The white house

1996 – 2000

Though it was a good thing it joined the online world the UI was poor because of there were no new web technologies.

2000 – 2005

The white house effort to switch most of its works to the online is visible and a lot has been put to the website.

The UI has gotten better.

2005 – 2014

Speed of the site got a bit slower.

Due to new advancements in the field the UI became more interactive.

2014 – 2020

The site became more user friendly.

The speed was improved.

#### 5. W3Schools

2000-2005

The UI was unpleasant but it remained the same.

2005 – 2010

More new features were added to the site.

The UI looked and felt user friendly.

2010 – 2015

more webpages were included to the site.

The UI got better.

The speed got faster.

2015 – 2020

The front end of the site was consistent but responsiveness and other backend related stuff were improved.

## List 5 websites each on the 12 categories

### Portal Websites

A web portal is a specially designed website that brings information from diverse sources, like emails, online forums and search engines, together in a uniform way.

Here are 5 excellent web portal examples across different Industries and use cases.

1. West Bend, Agent and Customer Portal: <https://www.thesilverlining.com/> is type of Banking and insurance portal
2. AvMed, Consolidated Payer Portal: <https://www.avmed.org/> is a type of Patient portal
3. Grants.gov, Federal Government Portal: <https://www.grants.gov/> is a type of Government portal
4. York University Passport York, Student & Faculty Portal: <https://passportyork.yorku.ca/> is a type of Student and faculty portal
5. Coach, Employee Collaboration Portal: <https://world.coach.com/> is a type of Intranets, Extranets and employee portal

### News Websites

1. Yahoo! News: <https://news.yahoo.com/> is an American web services provider headquartered in Sunnyvale, California, and owned by Verizon Media.
2. The British Broadcasting Corporation (BBC): <https://www.bbc.com/> is a British public service broadcaster
3. CNN (Cable News Network): <https://edition.cnn.com/> is an American news-based pay television channel owned by AT&T's Warner Media.
4. New York Times: <https://www.nytimes.com/> is morning daily newspaper published in New York City, long the newspaper of record in the United States and one of the world's great newspapers.
5. The Guardian: <https://www.theguardian.com/> is a British daily newspaper.

### Informational websites

1. Uscreen: <https://www.uscreen.tv/> buy different types of videos and sell it directly to customers
2. ChameleonJohn: <https://www.chameleonjohn.com/> helps people find the hottest deals available each day to bring practical betterment to their economic lives.
3. I'm Remembering: <https://imremembering.com/>
4. GoodGuid: help readers find safe products, and that's pretty important for a good life.
5. TED: <https://www.ted.com/>

### Marketing or business websites

1. DMN <https://www.dmnews.com/> is a resource for marketing and sales professionals that explores all realms of digital and data driver marketing in an unbiased and incisive manner.
2. Event Marketer: <https://www.eventmarketer.com/> provides the information needed for strategic brand-side event marketers and agency executives ranging from face-to-face to corporate events.
3. Chief Marketer <https://www.chiefmarketer.com/> serves marketing professionals of consumer and business-to-business brands with rich and thorough information on measurable marketing strategies, tactics, and technique.
4. Fortune: <https://www.fortune.com/> is one of the world's leading business media brands which is accompanied by a multinational monthly magazine, daily website and conference series.
5. INC: <https://www.inc.com/> is the only major brand in the world dedicated exclusively to owners and managers of growing small businesses which aim to provide them with real solutions for their business.



## Educational websites

1. EdX: <https://www.edx.org/> is an online learning destination and MOOC provider, offering high-quality courses from the world's best universities and institutions to learners everywhere.
2. Academic Earth: <https://academicearth.org/> the website gives huge array of academic options to student from traditional to contemporary studies.
3. Internet Archive: <https://archive.org/> internet archive is an authentic website storing the originals from various big websites. However, it does not give admission or certificates for learning.
4. Big Think: <https://bigthink.com/> write articles and record tutorials for the students and giving authentic material to the students.
5. Coursera: <https://www.coursera.org/>

## Entertainment Websites

1. Gawker: <https://gawker.com/> is a popular blog that's based in New York.
2. TMZ: <https://www.tMZ.com/> "Thirty Mile Zone" is a celebrity news blog that covers what the stars are talking about in and around Hollywood.
3. PopSugar: <https://www.popsugar.com/> brings daily updates on what's buzzing on the pop culture circuit.
4. Hit Fix: <https://uproxx.com/entertainment/>
5. Slash film: <https://www.slashfilm.com/> the site focus is on the geek/genre centric side of the movie universe.

## Advocacy websites

1. I'M READY!: <http://imready.pgpf.org/> the Peter G. Peterson Foundation's mission is to increase public awareness of the nature and urgency of key fiscal challenges threatening America's future and to accelerate action on them.
2. ACTIVE LIVING RESEARCH: <https://activelivingresearch.org/> a program of the Robert Wood Johnson foundation, needed a refreshed website to promulgate their stellar research into childhood obesity.
3. TROCAIRE: <https://www.trocaire.org/> Irish charity striving to overcome the challenges of poverty and injustice.
4. ARTS FOR LA: <https://www.artsforla.org/> Advocation for art education for the low income/underprivileged students.
5. GLOBAL ZERO: <http://www.globalzero.org/> is the international movement for the elimination of all nuclear weapons.

## Blog websites

1. WordPress: <https://wordpress.org/> Best for Self-Hosted Blogs often confused with its close cousin WordPress.com.
2. WordPress: <https://wordpress.com/> Best for Free Blogs
3. Wix: <https://www.wix.com/> Best for Small Websites. It allows you to put together your web presence via drag and drop and comes with blogging ability that you can add to your site.
4. Joomla - <https://www.joomla.org/> for building all kinds of websites
5. Medium: <https://www.medium.com/> is a publishing platform founded in 2012 by one of the people behind Twitter. By now, it has become a popular community for writers, bloggers, and journalists.

## Wiki websites

rankings are based on the number of estimated unique visitors received

1. Wikipedia: <https://www.wikipedia.org/> the Most Popular Wiki Website a free encyclopedia with millions of articles contributed collaboratively using Wiki software, in dozens of languages.
2. Wikia: <https://www.fandom.com/> the #2 Most Popular Wiki Website is a community site that anyone can contribute to. Discover, share and add your knowledge!
3. Wikihow: <https://www.wikihow.com/> the #3 Most Popular Wiki Website.
4. Wiktionary: <https://www.wiktionary.org/> the #4 Most Popular Wiki Website Collaborative project for creating a free lexical database in every language, complete with meanings, etymologies, and pronunciations.
5. Wordreference: <https://www.wordreference.com/> the #5 Most Popular Wiki Website Free online dictionaries – Spanish, French, Italian, German and more. Conjugations, audio pronunciations and forums for your questions.

## Social network websites

1. Facebook: <https://www.facebook.com/> this is easily the largest social networking site in the world and one of the most widely used. And, Facebook was perhaps the first that surpassed the landmark of 1 billion user accounts. Number of active users per month: 1.59 billion approximately
2. WhatsApp: <https://www.whatsapp.com/> despite having been acquired by Facebook in 2014, this instant messaging platform exists as an independent entity. Number of active users per month: 1 billion approximately
3. QQ: <https://www.imqq.com/> Tencent QQ (more popularly known as QQ) is an instant messaging (chat-based) social media platform. It became international (with more than 80 countries using it), after it was launched in China. Number of active users per month: 853 million approximately
4. WeChat: <https://www.wechat.com/> This is an all-in-one communications app for messaging and calling (similar to WhatsApp) that enables you to connect with the people of your choice. It was also developed by Tencent in China and can easily work alongside QQ. As per the BI intelligence report, the number of WeChat users are fast catching up with the number of WhatsApp users. Number of active users per month: 697 million approximately
5. Skype: <https://www.skype.com/> owned by Microsoft, 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. Number of active users per month: 300 million approximately.

## Aggregator Websites

News aggregator websites allow users to view news and updates from various sources at one convenient location. They fetch the data, organize them in tags / categories, and display it in the right order for easier consumption.

1. Feedly: <https://feedly.com/> It allows you to create a news stream of your own with latest content from your favorite publishers.
2. Google News: <https://news.google.com/> is a powerful news aggregator powered by Google's sophisticated search technologies, AI, and user's own search history.
3. Alltop: <https://alltop.com/> aggregates news and blog articles from the world's most popular websites like TechCrunch, Mashable, BBC, CNN, and more.
4. News360: <https://news360.com/> It lets you find world news as well as stories around your interests. It is an excellent alternative to Google News and Feedly.

5. Panda: <https://usepanda.com/> aggregates content useful to web designers, developers, and tech entrepreneurs.

### Personal websites

1. Krista Gray: <http://www.kristagray.com/> Gray's homepage gives you all the basic information you need to know about her and her work in a clean, easy-to-read way. Plus, her "services" section explains exactly what she's looking for, making it easy for people to understand how they can work with her.
2. Ximena Vengoechea: <http://www.ximenavengoechea.com/> The simple, clean design of this site makes the colors of Vengoechea's illustrations and user design screenshots really pop—helping her work shine even more.
3. Rachael G. King: <http://www.rachaelgking.com/> King uses her simple website to tell a compelling story about herself—and then give a clear call to action for people to reach out to her to work together. Plus, her social profiles stand out loud and proud, which is critical since she's a social media professional.
4. Devon Stank: <https://www.devonstank.com/> in addition to the simple, clear welcome screen, stank does a stellar job of integrating information about his skills and abilities with just enough personality to stand out.
5. Kristi Hines: <http://kristihines.com/> Hines has managed to make the examples of her writing work visual with the help of publication logos—plus, her testimonials page is second to none.

## Guide lines for evaluating the value of a website

These six criteria deal with the content of Web sites rather than the graphics or site design. Apply these criteria when you research on the internet.

### 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: It should be clear who developed the site.
- ☐ **Contact information** should be clearly provided: e-mail address, snail mail address, phone number, and fax number.
- ☐ Credentials: the author should state qualifications, credentials, or personal background that gives them authority to present information.
- ☐ Check to see if the site supported by an organization or a commercial body

### 2. PURPOSE

The purpose of the information presented in the site should be clear. Some sites are meant to inform, persuade, state an opinion, entertain, or parody something or someone. Evaluating a web site for purpose:

- ☐ Does the content support the purpose of the site?
- ☐ Is the information geared to a specific audience (students, scholars, general reader)?
- ☐ Is the site organized and focused?
- ☐ Are the outside links appropriate for the site?
- ☐ Does the site evaluate the links?
- ☐ Check the domain of the site. The URL may indicate its purpose.

### 3. 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 a web site for coverage:

- ☐ Does the site claim to be selective or comprehensive?
- ☐ Are the topics explored in depth?
- ☐ Compare the value of the site's information compared to other similar sites.
- ☐ Do the links go to outside sites rather than its own?
- ☐ Does the site provide information with no relevant outside links?

### 4. CURRENCY

Currency of the site refers to: 1) how current the information presented is, and 2) how often the site is updated or maintained. It is important to know when a site was created, when it was last updated, and if all of the links are current. Evaluating a web site for currency involves finding the date information was:

- ☐ first written
- ☐ placed on the web
- ☐ last revised

Then ask if:

- ☐ Links are up-to-date
- ☐ Links provided should be reliable. Dead links or references to sites that have moved are not useful.
- ☐ Information provided so trend related that its usefulness is limited to a certain time period?
- ☐ the site been under construction for some time?

### 5. OBJECTIVITY

Objectivity of the site should be clear. Beware of sites that contain bias or do not admit its bias freely. Objective sites present information with a minimum of bias. Evaluating a web site for objectivity:

- ☐ Is the information presented with a particular bias?
- ☐ Does the information try to sway the audience?
- ☐ Does site advertising conflict with the content?
- ☐ Is the site trying to explain, inform, persuade, or sell something?

## 6. ACCURACY

There are few standards to verify the accuracy of information on the web. It is the responsibility of the reader to assess the information presented. Evaluating a web site for accuracy:

- ☐ Reliability: Is the author affiliated with a known, respectable institution?
- ☐ References: do statistics and other factual information receive proper references as to their origin?
- ☐ Does the reading you have already done on the subject make the information seem accurate?
- ☐ Is the information comparable to other sites on the same topic?
- ☐ Does the text follow basic rules of grammar, spelling and composition?
- ☐ Is a bibliography or reference list included?

[Evaluation of some websites based on the guidelines.](#)

BBC

Authority

Contact information: Phone number 020 8743 8000

Supported by: British government

Purpose

This site is a news site and it presents a breaking news for the readers. The presented information is geared to the general reader. It is highly organized and to the point. This site is not responsible for external links.

Coverage

This site covers many topics and as compared to other sites, it is the best and choose by most users. As I try to mention earlier this site doesn't support external link.

Currency

BBC website were developed in 1997 and updated every year. The last update was made in 2015 and now it looks beautiful compared to the past times.

Objectivity

This site is trying to announce new things for the reader.

Accuracy

As the site is public information provider for UK, the spelling errors and punctuation errors are somehow good because most authors are native English speakers.

## References

- Barry M. Leiner, Vinton G. Cerf, David D. Clark, Robert E. Kahn, Leonard Kleinrock, Daniel C. Lynch, Jon Postel, Larry G. Roberts, Stephen Wolff, " Brief History of the Internet", 1997
- Carolyn Duffy Marsan, Network World | Feb 9, 2009
- Moore, Roger D.; Packet Switching Networks of the 1970's.
- ENCYCLOpedia.com
- <https://www.liferay.com/>
- <https://www.lifehack.org/>
- <https://www.marketingeye.com.au/>
- <https://www.indiatoday.in/>
- <https://www.makeuseof.com/>
- <https://websitesetup.org/>
- <https://makeawebsitehub.com/>
- <https://aelieve.com/>