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**ADDIS ABABA INSTITUTE OF TECHNOLOGY**

**CENTER OF INFORMATION TECHNOLOGY AND SCIENTIFIC COMPUTING**

**DEPARTMENT OF** **SOFTWARE ENGINEERING**

FUNDAMENTALS OF WEB DESIGN AND DEVELOPMENT

# ASSIGNMENT 1

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# Acknowledgment

I would like to express my special thanks of gratitude to my teacher Mr Fitsum Alemu as well as our department software it gave me the golden opportunity to do this wonderful assignment on the topic about internet, web and websites which initiated me in doing a lot of Research and I have known so many new things. I am really thankful to them.

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Abstract

The Internet is not synonymous with World Wide Web. The Internet is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet the first thing we will cover in this document is about internet and its historical development. While a website (also written as web site) is a collection of [web pages](https://en.wikipedia.org/wiki/Web_page) and related content that is identified by a common domain name and published at least one server. Notable examples are wikipdia.org, google.com and amazon the other thing we are going to cover in this document about website its example with description and what is changed in different year. All publicly accessible websites collectively constitute the www. There are also private websites that can only be accessed on a private network, such as a company's internal website for its employees.

Websites are typically dedicated to a particular topic or purpose, such as news, education, commerce, entertainment, or social networking. Hyperlink between web pages guides the navigation of the site, which often starts with a home page.

Finally, we will cover the guidelines of website and based on that guidelines we will describe different websites.

# Contents

[ASSIGNMENT 1 i](#_Toc34390871)

[Acknowledgment: ii](#_Toc34390872)

[Abstract iii](#_Toc34390873)

[Contents iv](#_Toc34390874)

[Introduction 1](#_Toc34390875)

[History of Internet 2](#_Toc34390876)

[Observation of websites on different year 5](#_Toc34390877)

[Google 5](#_Toc34390878)

[YouTube 7](#_Toc34390879)

[Facebook 8](#_Toc34390880)

[BBC 8](#_Toc34390881)

[Twitter: 9](#_Toc34390882)

[Website categories and their description 10](#_Toc34390883)

[Informational websites: 10](#_Toc34390884)

[Business/Marketing website: 11](#_Toc34390885)

[Educational: 11](#_Toc34390886)

[Entertainment: 12](#_Toc34390887)

[Wiki: 13](#_Toc34390888)

[Social Network: 13](#_Toc34390889)

[Content Aggregator: 14](#_Toc34390890)

[Guidelines for evaluating the value of a Web site? 15](#_Toc34390891)

[1. AUTHORITY 15](#_Toc34390892)

[2. COVERAGE 15](#_Toc34390893)

[3. PURPOSE 16](#_Toc34390894)

[4. CURRENCY 16](#_Toc34390895)

[5. OBJECTIVITY 16](#_Toc34390896)

[6. ACCURACY 16](#_Toc34390897)

[Evaluating website using the above guidelines 16](#_Toc34390898)

[Facebook 16](#_Toc34390899)

[You tube 17](#_Toc34390900)

[Reference 18](#_Toc34390901)

Introduction

Internet has come a long way in a short period of time. There are many elements allow that fast evolution of Internet. For instance, one of them is cold war beginnings influence its design to decentralized, indestructible communication network; development of rule of communication for computers that enable the machines to turn raw data into useful information.

It is a global communication system that links together thousands of individual networks. It allows exchange of information between two or more computers on a network. Thus, internet helps in transfer of messages through mail, chat, video & audio conference, etc. It has become mandatory for day-to-day activities: bills payment, online shopping and surfing, tutoring, working, communicating with peers, etc.

# History of Internet

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The US Department of Defense had created the Advanced Research Projects Agency known as ARPA, to keep its technology a step ahead of the soviets. A computer enthusiast named Joseph Licklider helped convince ARPA to fund research into a computer network connecting scientists and engineers throughout the country. A few key colleges agreed to be involved, and ARPA started building the network in 1969. They called it ARPANET. It started fairly small, as a sort of messaging service between computers at UCLA, UC Santa Barbara, Stanford University, and the University of Utah. But it was the first network of its kind. As ARPANET grew over the next couple decades, its engineers would add features and solve problems that still shape everything we do online. One of ARPANET’s first big innovations was what is known as packet switching.

Computer would only be able to connect to one other computer at a time, and it would take extra time whenever you tried to connect somewhere else. Some modern websites might connect you to ten different computers from around the world at the same time. All of them need to respond immediately if you click, all the while connecting and monitoring hundreds or thousands of other visitors at once. So circuits all over the place would constantly be flipping around, connecting somewhere for a split second before switching away and connecting elsewhere. It just would not work. Even back in the 1960s, engineers knew that computers send messages far too quickly to make circuit switching practical. So instead, they invented an alternative packet switching, where different computers send messages along the same set of wires instead of each getting one. To communicate with each other, they just send a message, called a packet, along the wires. Every packet had a kind of address label, a string of numbers representing the computers where it was headed. The computer where it started would look up the address on a table with all the addresses in the network on it, and then send the packet toward whatever nearby computer was closest to the destination. The second computer would get the packet, look up the destination address, and again send the packet in the right direction. This process would repeat over and over until the packet finally got where it is going. No moving circuits or wires, no one conversation at a time requirement.

ARPANET used packet switching from the start, and its packets traveled over phone lines. At first, packet switching worked exactly as planned, but there were problems over the next couple of years as dozens of new computers from around the country joined because the way the packet switching system was set up meant that every computer always had to keep an updated list of all the other computers’ addresses. Otherwise, they would get packets and would not know where to send them, or they would try to send the packet somewhere that might not be around anymore, but the network kept getting bigger and bigger, and sometimes a computer’s address might change if they temporarily disconnected from the network or a connection stopped working. Different computers ended up with different address books if they did not update fast enough. ARPANET’s engineers scrapped that system and selected Stanford as the official record keeper of everyone’s address in 1973. This quick fix let ARPANET keep growing throughout the seventies with sixty computers in 1974 and over a hundred by 1977.

By the mid-seventies, ARPANET was not the only network in town. Similar networks were popping up around the world, and some had even more computers on them, but everyone formatted their packets differently even though you could connect different networks together, it was a real headache. The problem was mostly solved back in 1974, but it took until the early eighties before ARPANET and most of the other networks started using it. The solution was a set of programs called TCP/IP, which we still use today. The Transmission Control Protocol (TCP) was a standard way of formatting packets, so that everyone was speaking the same language. Internet Protocol (IP) was a standard way of assigning addresses, so there was not any confusion about where packets where headed. Once two networks used TCP/IP, connecting them became way easier.

Transmission Control Protocol (TCP) is one of the main protocols of the Internet protocol suite. It is connection oriented protocol which enables two hosts to establish a connection and exchange streams of data. It establishes the rules and standard procedures for the way information is communicated over the internet. It also guarantees transmission of data and helps the packets will be delivered in the same order in which they were sent. Internet Protocol (IP) is the address system of the internet which helps to deliver packets of information from the server to the client. IP is the part that obtains the address to which data is sent.

All the different networks were connected to one another forming what became known as the Internet – with ARPANET as the glue holding it all together, but with ARPANET growing so quickly and connecting to so many other networks, the record keepers at Stanford were getting overloaded. Hosts were always joining and changing addresses and trying to download the updated address book and occasionally the Stanford list would have errors that messed up communication throughout the network, and sending emails was becoming a real pain. Email was invented back in 1971, and by 1973 emails made up more than three quarters of ARPANET’s packets, but different computers had different email programs, and some required a list of every computer it would pass between sender and receiver, so people had to keep an updated map of the entire network by their desk and they had to type out the path of their email before they could send it. Hundreds of computers on ARPANET and over a thousand across the Internet keeping up those maps was getting impossible. Because of that ARPANET’s engineers realized that the entire structure of the Internet had to be reorganized, so they came up with the Domain Name System or DNS.

Domain Name System (DNS) is just the phonebook of the internet. It is one of the most fundamental instruments of the internet which translates domain names to IP addresses so browsers can load Internet resources. The process of DNS involves converting a hostname into IP address.

Instead of separating each host and storing their addresses in a random order, the hosts were arranged into domains. First came the top-level domains. Those dot-coms and dot-edus at the end of every website and email address. The new top level domains meant that instead of sending an email to me@example like you would have before DNS, you were emailing [me@example.com](mailto:me@example.com). Then, within these top-level domains, each host was called a second-level domain. So “aau.edu”, for example, now meant “the second-level domain ‘aau’ within the top level domain ‘dot-edu’”. The domain structure organized all those different hosts from all around the world in a way that computers could handle. Then, DNS added a whole new network to the Internet, whose whole job was to keep track of addresses and connections. One computer on the new network effectively stored all addresses within the dot-com top-level domain, another got all the dot-edus, and another got all the dot-orgs, and so on. Other new computers collectively mapped out the entire network, so when you wanted to send an email, you did not have to check your map and plan out all the connections yourself. That became the DNS’s job and it’s still the DNS’s job today. That is why your computer did not know how to get a message to YouTube when you clicked on different videos.

# Observation of websites on different year

## Google:

1. Observation and assessment on Google of 1999.

The interface of Google in 1999 seems like the above. As I observe, there are some things that should be mentioned.

* Tell us to use the Google for web search above the search box.
* Below the search box, there are 2 buttons namely ‘Google search’ and ‘I’m feeling lucky’. There is also an advertisement about the award it obtained.
* Near to the logo, there are two buttons, Jobs@Google and About Google to show job opportunities for the client and to give more information about the Google.
* The logo has blurred color.
* It has only search by word.

1. Observation and assessment on Google of 2000.

* It tells the total number of web pages that can be searched, and that is above the search box.
* It contains advanced search preference.
* It gives all about the Google and allows us to Google with our own language.
* It lets for advertisement and tries to give cool jobs.
* Under the search box there is Google Web Directory.
* There is no search by voice.

1. Observation and assessment on Google of 2001.

* It has web, images, groups and directory navigations above the search box.
* It allows advanced search preferences and language tools.
* It gives information about how many documents are there.
* It shows the number of web pages near to copy right symbol.
* The logo has different font text from the previous.
* Put links to advertise with them, to add Google on our website, and also news and resources.

1. Observation and assessment on Google of 2002.

* It is similar to 2001 except there is news on the navigation part.

1. Observation and assessment on Google of 2004.

* There are different links for different purpose like Web, Images, Groups, News, and more. In more, there are Google Home, About Google, Help Center and Google downloads option.
* Advanced search preferences and language tools are placed on the right of search box.
* Under the search box, there are Advertising Programs, Business Solutions, and About Google.

1. Observation and assessment on Google of 2005.

* It is similar to 2004, except there is Froogle and Local New!

1. Observation and assessment on Google of 2010.

* The logo is changed to GMMXIe with unique image.
* At the top left side of the page, there are options like Web, Images, Videos, Maps, News, Shopping, Gmail and more. On the right side IGoogle, Search settings, sign in are placed for different purposes.
* On the right side of search box, there are advanced search and Language Tools.
* Advertising programs, Business solutions and About Google are under the search box and above the privacy symbol.

1. Observation and assessment on Google of 2015.

* The logo font is changed and the color is not blurred.
* Advanced search and Language tools are placed right side of search box.
* Above the privacy term, there are Advertising programs, Business solutions, +Google and About Google. Above that there is 10 Google tips link.

1. Observation and assessment on Google of 2020.

* The logo is changed completely as you see above.
* Voice search is possible.
* Google Search and I’m feeling lucky are placed below the search box.
* About and Store are on top left side and also Gmail, Images, Google app menu, sign in are placed on top right side of the page.
* Advertising, Business, How search works are created on the bottom left side of the page and privacy, Terms, Settings are placed well on the bottom right side.

## YouTube:

1. 2005

* There are 5 pages on the navigation namely Home, Videos, Channels, Friends and upload.
* Sign up, sign in and help are placed on the top right side.
* There is search video box under the navigation.
* Recently viewed videos and different other videos are displayed top to bottom respectively.
* About us, Help, Developers, Terms of use, privacy policy and jobs are on the bottom of the page.

1. 2010

* To the right side of the logo, there is search box and then Browse, upload, create account and sigh in are put respectively.
* Different video types are listed with their images.
* About, press and blogs, copyright, creators and partners, advertising, developers, help, safety, privacy and terms are located at the end of the page.

1. 2015

* The logo, search box, upload and sign in are placed at the top of the page.
* The navigation is created on the left side of the page.
* Different videos are seen on the other part of the page.
* Different terms and items are placed at the end of the page.

1. 2019

* The logo color is change a little bit.
* 2Most of things are similar to 2015 except History, premium, YouTube TV are added on the navigation part of 2015.

## Facebook:

1. 2005

* It contains two small box and one large box. The small boxes are used to enter email and password. The larger one contains descriptions about Facebook, login, register, help, and about buttons.
* Jobs, advertise, terms and privacy are placed bottom.
* The name of the production company is put at the end.
* There is picture of someone above the small boxes.

1. 2010

* It is a little bit different from 2005.
* There is a picture on the left to show interconnection between people.
* On the right side, there is registration form for new users.
* For those who have account, there is form require email and password and possible to log in. This form is on the top part of the page.

1. 2015

* It is almost similar to 2010.
* The picture that was in 2010 is changed and have another options.
* For those who have account, there is a log in form at the top right part namely email, password and log in.
* Registration form for account creator is placed under the log in form.

1. 2020

* On the left side, there are logo and article which advertise to connect with others.
* On the right top side, there is log in form for those who have account and under that there is registration form for those who have no account.

## BBC:

1. 2005

* Seven pages namely home, news, sport, radio, TV, weather, and languages are on the navigation.
* Near to the navigation, there is a search box and button.
* Short descriptions are given in the home about elements on the navigation.
* At the end of the page, term of privacy and other elements are put.
* The page can’t fill the screen of computer, it is aligned on the left.

1. 2010

* It is aligned at center of computer screen.
* On the navigation, ‘travel’ and ‘more’ are added.
* There are links like explore the BBC and customize this page.
* The other things are like 2005.

1. 2015

* It takes all screen of the computer.
* Culture, capital, Earth and shop are added on the navigation.
* It is huge website and scroll up to down and reversed.

1. 2020

* It allows to create BBC account.
* Extra elements are added on the navigation.
* It is the latest upgrade and it covers so many information.
* The page is so wide.

## Twitter:

1. 2007

* It has a buttons like what? Why? How?
* To join twitter, click on Get Started---join!
* Links About us, contact, and privacy are added at bottom of the page.
* At the right side, there is sign in form.

1. 2015

* The background image is changed to image of some city.
* Some description is given to connect with others.
* Two tables are prepared.
* There is one table with white background color and is a sign in form, username and password are part of the form.
* Under the above table, there is also another table with white background and is sign up or registration form, contains full name, email, and password. There is pink background sign up button.
* Developers, policy and others are created at the bottom.

1. 2020

* The background is created with two colors. Right half side with white color and left half side with blue color.
* On the white background, log in form is created at the top; at the center, two buttons are placed namely sign in and sign out.
* On the blue part, three description statements are placed.