# https://encrypted-tbn3.google.com/images?q=tbn:ANd9GcTLAZpQzmzAPnXtyNCq1onsRE4y0bvoWlMvd3YA8Lt715oLXEJxWAIT 5443 Web Technologies Study Guide **Module 1: Web Technologies and Applications Overview**

# Prepared by Jack G. Zheng, Last Updated by Zhigang Li

## Overview and learning outcomes

In this very first module, we need to have an overall understanding of the World Wide Web architecture and how different pieces work together. We will focus on the most basic web architecture; more recent developments and advances in the domain will be covered in more advanced courses.

Learning objectives:

1. Articulate the differences between the Web and the Internet
2. Explain the basic web architecture and each of its components, and how they work together:
   1. Client/server
   2. Web server
   3. Web client (browser)
   4. HTML
   5. HTTP protocol: request, response, header, body
   6. Domain and DNS
   7. URL
3. Describe the concepts of dynamic web page and its driving technologies at the client side and server side.

This module is related to course level learning objective 1.

## Task list

1. Complete the core readings listed in learning materials for have some general understanding of the Web. Use the questions below to guide your readings.
2. Review and research. You are welcome to post your response to the discussion board.
   1. Ask a non-IT person (your friend, child, spouse, or parent) how the Web is different from the Internet. Quote the most interesting part of their answers and then critique it based on what you have learned in this module.
   2. Explain the process of a complete cycle of webpage request and response.
   3. What are the examples of server-side web technologies? Client side?
   4. What is the difference between web design and web development?
3. Use the lecture notes as a learning guide to review key points; follow the resources presented in the notes for further information and additional learning.
4. Follow the “Setting up the Web Development Environment” tutorial to prepare software and services needed for this class.

## Learning materials

1. Core readings:
   1. Introduction to Web as a Platform:
      1. Read the article at <https://msdn.microsoft.com/library/bb330932.aspx>
   2. HTTP basics <http://www.httpwatch.com/httpgallery/> - read the **first three sections** for some basics.
   3. DNS: <http://computer.howstuffworks.com/dns.htm>
2. Lecture notes
   1. Introduction to World Wide Web (located in D2L in the module)
3. Lab 1: Setting up the Web Development Environment (lab guide docx and tutorial PPT)
4. Addition readings and resources
   1. <http://itwebtutorials.mga.edu/html/chp1/serving-pages.aspx>
   2. <https://developer.mozilla.org/en-US/docs/Learn/Common_questions/What_software_do_I_need>
   3. <https://developer.mozilla.org/en-US/docs/Learn/Common_questions/What_is_a_web_server>
   4. More about browsers
      1. <https://www.html5rocks.com/en/tutorials/internals/howbrowserswork/>
      2. <https://hacks.mozilla.org/2017/05/quantum-up-close-what-is-a-browser-engine/>
   5. URL: <https://eager.io/blog/the-history-of-the-url-path-fragment-query-auth/>
   6. 25 years of the World Wide Web: Tim Berners-Lee explains how it all began: <http://www.independent.co.uk/life-style/gadgets-and-tech/news/25-years-of-the-world-wide-web-the-inventor-of-the-web-tim-bernerslee-explains-how-it-all-began-9185040.html>
   7. The Web at 25 in the U.S.: <http://www.pewinternet.org/2014/02/27/the-web-at-25-in-the-u-s/>