Web Application Development

Introduction and regulations

Contents

- ❏ Course Objectives
- ❏ Work Environment
- ❏ Projects, Exams, Assignments
- ❏ Grading Scale
- ❏ Information and Regulations
- ❏ Basic Concepts

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Course Objectives

- ❑ Understand the concepts: **internet**, **web**, **browser**,....
- ❑ Front-end development skills
    - ❑ **HTML**
    - ❑ **CSS**, **Bootstrap**
    - ❑ **Javascript**, **jQuery**
- ❑ Back-end development skills
    - ❑ **Node.js**
    - ❑ **MySql / PostgreSQL / MongoDB**
    - ❑ **MVC framework**

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Work Environment

- ❏ Foundation: **HTML** (4, 5), **Javascript** (ES6)
- ❏ Programming languages: *html*, *css*, *javascript*,…
- ❏ Recommended **IDE**: **Visual Studio Code**.
- ❏ Other **IDEs** (*Integrated Development Environments*) can be used, but primarily, students are expected to explore on their own (with the teacher providing support if there is available time).

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Projects, Exams, Assignments

- ❑ Group project
    - ❑ Maximum of 4 students per group (only allowing a maximum of 2 groups with fewer than 4 members).
    - ❑ Start time: mid-semester.
    - ❑ Assessment method: oral examination.
- ❑ Individual assignments: 4 exercises.
- ❑ Weekly assignments.

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Grading Scale

- ❏ Attendance score: 1 point (assessed based on weekly assignments).
- ❏ Individual score: 6 points.
- ❏ Group project score: 3 points.

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Information

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Class registration

❏ Fill out the information in the form at the following link:
https://forms.gle/AEHuu2u2JnWe6joT8
❏ The registration deadline is **16/10/2023**.
❏ *Students who do not register will not be able to access the shared folder on Drive.*

Regulations

❏ Deadlines are only announced in class, and the possibility of extending a Deadline is very limited.
❏ Submissions are only accepted as per the prescribed deadlines; submissions via email are not accepted.
❏ When sending an email to contact the teacher, the prefix **[21clc_ktpm3-Web]** must be included in the Subject.

   ❏ For example: **[21clc_ktpm3-Web] Hỏi về vấn đề x…**

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Internet

Concept

❏ **The Internet** is a global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to communicate between networks and devices. It is a network of networks consisting of private, public, academic, business, and government networks, linked by a broad array of electronic, wireless, and optical networking technologies.

Key Features of the Internet

❏ **Global Accessibility**: The Internet is accessible from almost any point on Earth, providing a platform for global communication and information exchange.
❏ **Information Sharing**: It allows for the easy dissemination and access to a plethora of information, including text, images, audio, and video.
❏ **Interconnected Networks**: It comprises millions of smaller domestic, academic, business, and government networks, which together carry various information and services.

- ❏ **Data Transmission**: It utilizes packet switching to send and receive data. Data is broken down into packets, sent to the destination, and reassembled at the other end.
- ❏ **Protocols**: The Internet relies on protocols such as Transmission Control Protocol (TCP) and Internet Protocol (IP) to function.
- ❏ **Services and Applications**: The Internet hosts a myriad of services and applications, including email, file transfer, web browsing, social media, online gaming, and many more.
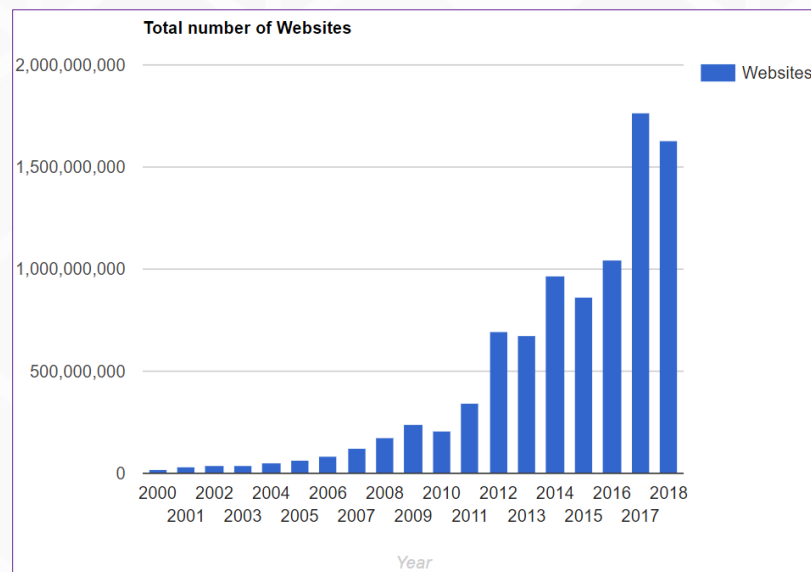
Importance

- ❏ The Internet has had a profound impact on society, influencing the way we communicate, learn, work, and entertain ourselves. It has democratized information, enabled global connectivity, and fostered innovation in various fields, making it an integral part of modern life.

What is the Web?

❏ It refers to the distributed services providing multimedia information based on hypertext

   ❏ Distributed: Information is located on multiple servers around the world

   ❏ Multimedia: Information includes text, graphics, sound, video

   ❏ Hypertext: It is the technique used to access information

Statistics on the number of websites

Total number of Websites

The operation of the Web

❏ **Web** = **protocol** + **language** + **naming infrastructure**
❏ **HTTP**: HyperText Transport Protocol

  ❏ It is the communication protocol between the WWW client and server.

❏ **HTML**: HyperText Markup Language

  ❏ The language used to represent WWW documents

❏ **URL**: Uniform Resource Locator

  ❏ Web address (uniquely identified)

IP Address – Domain name

❏ **An IP Address** is a 32-bit number (V4), divided into four 8-bit numbers, for example: 203.162.33.44 (comprising two parts: network address and host address). It identifies the object sending and receiving information on the Internet.

  ❏ To find out IP: ping www.intel.com

❏ **A Domain name** is the transaction name of a company or organization on the Internet.

❏ The mapping between the domain name and IP address is handled by the DNS server – Domain Name System (service).

Browser

❏ Display (if possible) various resources.
❏ Display capabilities:

  ❏ Text-only (Lynx, ...)

  ❏ Graphic (IE, Safari, Chrome, ...)
❏ Able to display various types of images:

  ❏ TEXT, GIF, JPEG, sound, video, postscript,...
❏ Supports multiple protocols:

  ❏ HTTP, FTP, SMTP, POP, ...
❏ Can "plug-in" various tools into the browser to enhance features (3D animation, SWF, ...).

Common web browsers

URL - Uniform Resource Locator

❏ **A URL** is a unique identifier for Internet resources.
❏ It specifies:

    ❏ The method of access

    ❏ The location of the resource

❏ General syntax:

protocol://host_name[:port_num][/path][/file_name]

http://www.microsoft.com:8080/en/us/default.aspx

protocol   *server name*   *port*   *directory/file name on the server*

Exercise

❏ Research common web services and provide examples.
❏ Explore tools for utilizing Internet resources and give examples.
❏ Explain the following terms:

    ❏ Website, Webpage, Web browser, Homepage, Hyperlink

    ❏ IAP (Internet Access Provider), ISP (Internet Service Provider)

    ❏ Search engines

    ❏ HTTP, FTP, SMTP, POP3,...