北京理工大学计算机学院
School of Computer Science and Technology,BIT

Web开发基础

赵刚

集中上课时间表

- 8-25　　周三　上午综教A205
- 8-26　　周四　上午综教A205
- 9-1　　周三　上午综教A205
- 9-2　　周四　上午综教A205

课程实践

- 课程实践要求鼓励用自己电脑完成，同时也给同学们预定了机房
- 机房地点：文三楼裙楼西北角
- 机房预留可用时间
  - 8-26 周四下午 221 四机房
  - 9-3 周五 下午 221 四机房
  - 9-9 周四 下午 221 四机房
  - 9-10 周五 下午 221 四机房

请在乐学上选课

- 首先确认你的教学班
- http://lexue.bit.edu.cn/user/index.php?id=8404
- 课程ID 8404
- 请在今日12:00前确认选课。
- 最终实验报告将通过乐学提交。

本课程内容摘要

- 网站开发基础知识
- 网站环境构建
- 管理和配置网站
- HTML &CSS
- JavaScript
- Asp服务端编程
- 数据库连结与访问

网站开发基础知识

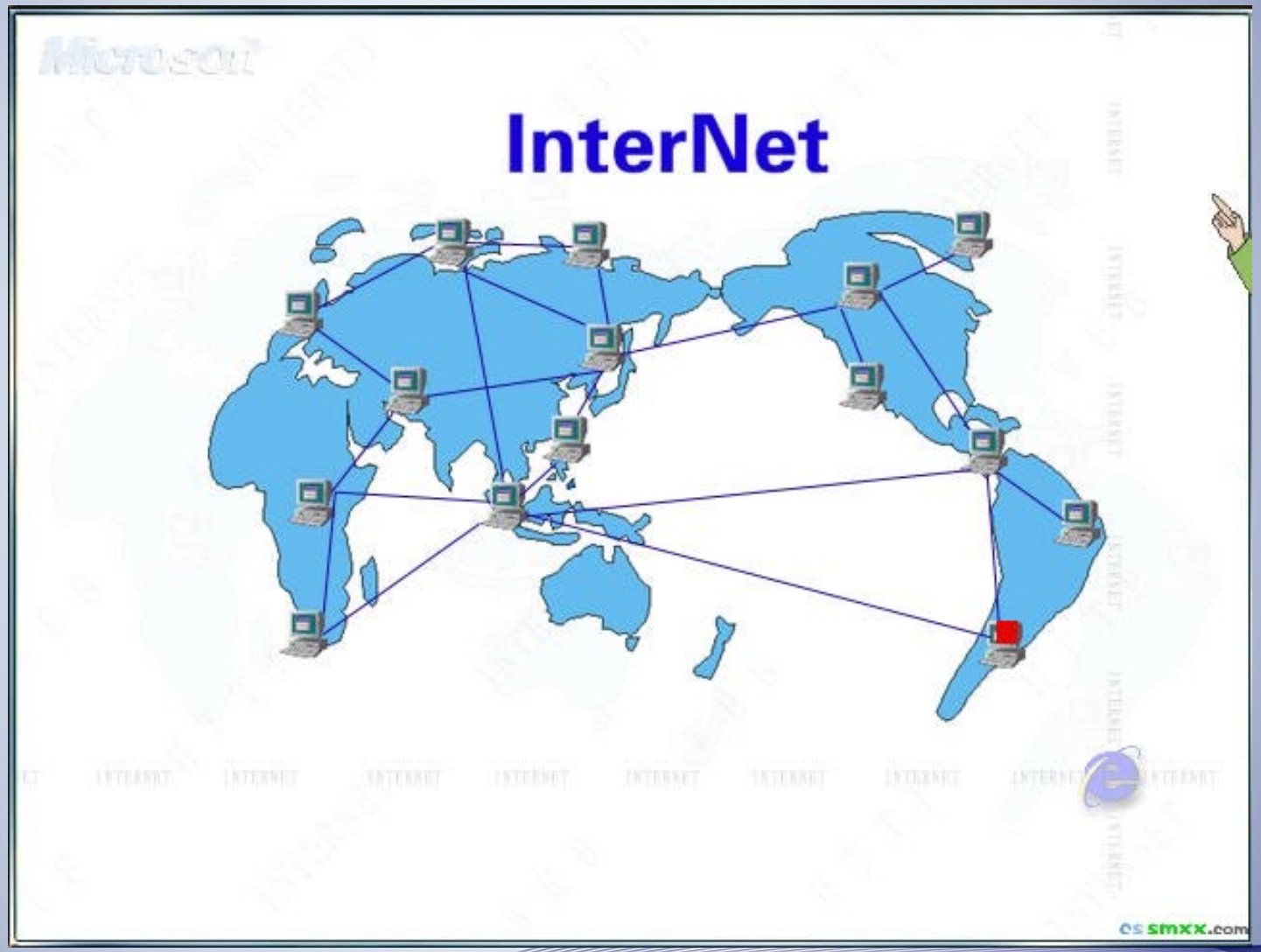
- 计算机网络基础
- 网站的含义
- 网站访问的原理
- 网页的类型
- 动态网站技术

计算机网络基础

- Internet Vs intranet
- 计算机网络的标准模型
- TCP/IP 协议
- 服务器和客户机
- 域名
- 端口

Internet VS Intranet

- The **Internet** is a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billions of users worldwide
  - It is a *network of networks*
- An **intranet** is a private computer network that uses Internet Protocol technologies to securely share any part of an organization's information or network operating system within that organization.


InterNet

And WWW

- WWW（亦作“**Web**”、“**万维网**”、“**W3**”，英文全称为“**World Wide Web**”）
  - 是一个由许多互相链接的超文本文档组成的系统，通过互联网访问。万维网联盟（英语：World Wide Web Consortium，简称W3C），又称W3C理事会。1994年10月在麻省理工学院（MIT）计算机科学实验室成立。万维网联盟的创建者是万维网的发明者蒂姆·伯纳斯-李。
- What's the difference between the Internet and the World Wide Web (WWW)?
  - WWW = HTML* + HTTP(S)
    - * including CSS, JavaScript, and other browser enabled content
  - WWW 是Internet应用之一

Brief History

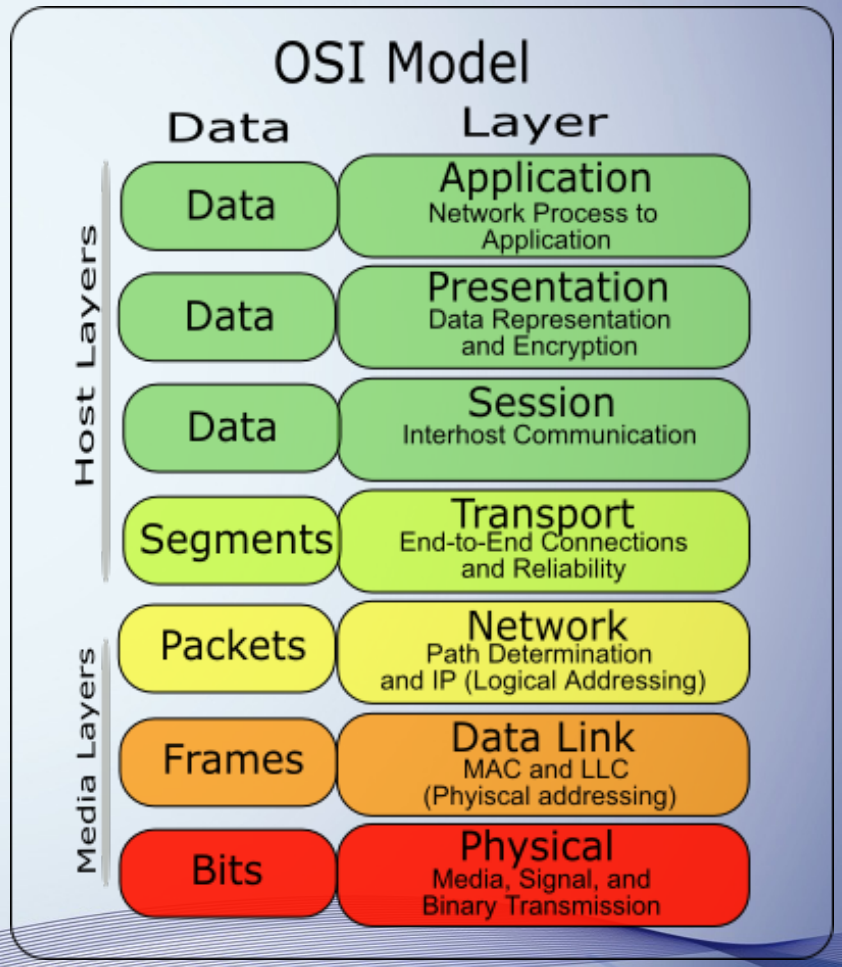
- began as a US Department of Defense network called ARPANET (1960s-70s)
- initial services: electronic mail, file transfer
- opened to commercial interests in late 80s
- WWW created in 1989-91 by Tim Berners-Lee
- popular web browsers released: Netscape 1994, IE 1995
- Amazon.com opens in 1995; Google January 1996
- Chinese First Connection with Internet： Chinese Academics Net, by Computer Applying Technology Institute of Beijing1986，
- First email, Sep. 14 1987, from CATIB,“Across the Great Wall we can reach every corner in the world”
- Chinese First Full Internet Connection： NCFC (National Computing and Networking Facility of China) 1994
- Baidu1999； Taobao 2003

Key aspects of the Internet

- Internet is for freedom of information
- subnetworks can stand on their own
- computers can dynamically join and leave the network
- built on open standards; anyone can create a new device
- lack of centralized control (mostly)
- everyone can use it with simple, commonly available software

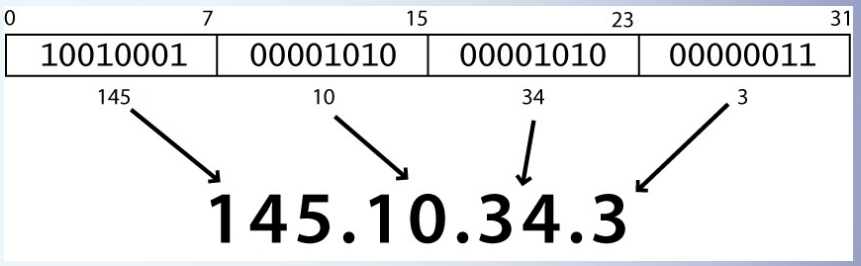
Layered architecture

- The internet uses a layered hardware/software architecture (OSI model):
- **physical layer:** devices such as coaxial cables, fiber-optic lines, modems
- **data link layer:** basic hardware protocols (Ethernet, Wi-Fi, DSL, ATM, PPP)
- **network / internet layer:** basic software protocol (IP)
- **transport layer:** add reliability to network layer (TCP, UDP)
- **application layer:** implements specific communication for each kind of program (HTTP, POP3/IMAP, SSH, FTP))



Internet Protocol (IP)

- the IP is the underlying system of communication for all data (packets) sent across the internet.
- each device has a 32-bit IP address as four 8-bit numbers (0-255)
- find out your internet IP address: whatismyip.com
- find out your local IP address:
  - in a terminal, type: ipconfig (Windows) or ifconfig (Mac/Linux)
- IP v4 vs. IP v6 (32-b vs. 128-b)



Transmission Control Protocol (TCP)

- adds multiple, guaranteed message delivery on top of IP
- **multiplexing:** multiple programs using the same IP address
  - **port:** a number given to each program or service
  - 80: Web browser (443 for secure browsing)
  - 25: email
  - 22: ssh
  - 21: ftp
  - more common ports
- some programs (QQ, games, streaming media programs) use simpler UDP protocol instead of TCP
- find out ports used:
  - in a terminal, using netstat (Windows) command
  - using CurrPorts

Web servers and browsers

- Web server: software that listens for Web page requests
  - part of Windows)
- C/S Vs B/S model

- Web browser: fetches/displays documents from Web servers
  - Microsoft Internet Explorer (IE)
  - Mozilla Firefox
  - Apple Safari
  - Google Chrome
  - Opera

Domain Name System (DNS)

- a set of servers that map written names to IP addresses
  - Example: www.bit.edu.cn 219.143.204.38
  - using Windows command **nslookup** to find out IP address
- many systems maintain a local cache called a host file
  - Windows: C:\Windows\system32\drivers\etc\hosts
  - Mac: /private/etc/hosts
  - Linux: /etc/hosts

Uniform Resource Locator (URL)

- an identifier for the location of a document on a web site
- a basic URL:
  http://www.aw-bc.com/info/regesstepp/index.html
  ~~~~ ~~~~~~~~~~~~~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~
  protocol host path
- upon entering this URL into the browser, it would:
  - ask the DNS server for the IP address of www.aw-bc.com
  - connect to that IP address at port 80
  - ask the server to GET /info/regesstepp/index.html
  - display the resulting page on the screen
  ~~~~

More advanced URLs

- **anchor:** jumps to a given section of a web page
  http://www.textpad.com/download/index.html**#downloads**
  - fetches index.html then jumps down to part of the page labeled downloads
- port: for web servers on ports other than the default 80
  http://www.bit.edu.cn:**8080**/
- query string: a set of parameters passed to a web program
  http://www.google.com/search**?q=miserable+failure&start=10**
  - parameter q is set to "miserable+failure"
  - parameter start is set to 10

Hypertext Transport Protocol (HTTP)

- HTTP is the foundation of data communication for the World Wide Web.
- the set of commands understood by a web server and sent from a browser
- some HTTP commands (your browser sends these internally):
  - GET *filename* : download
  - POST *filename* : send a web form response
  - PUT *filename* : upload
  - DELETE *filename* : remove entity
  - HEAD *filename* : only status information, not entire content
  - …

HTTP error codes

- when something goes wrong, the web server returns a special "error code" number to the browser, possibly followed by an HTML document
- common error codes:
- 200 OK
- 301-303 page has moved (permanently or temporarily)
- 403 you are forbidden to access this page
- 404 page not found
- 500 internal server error

complete list

Terms

- Internet Service Provider
  - enterprises or organizations who provide Internet access to you,
  - who? please identify your ISPs
- Web Hosting
  - provide a place for consumers to store pages designed to be consumed by the Web surfing public
  - ISPs often offer Web hosting services along with their standard connectivity packages.
- Client/Server vs. Browser/Server

Web 1.0 vs. Web 2.0

- Web 1.0 is about publishing
  - users are limited to the passive viewing of information that is provided to them
- Web 2.0 is about interaction
  - allows its users to interact with other users or to change website content
  - information sharing, interoperability, user-centered design and collaboration
  - hosted services, web applications, social-networking sites, video-sharing sites, wikis, blogs

网站的含义

- 网页是网站的基本单位
  - 用标准的HTML语言将图片、文字、多媒体信息组织起来的格式文档
- 一般意义上的网站
  - A group of related pages?
  - A dedicate server?
  - A group of servers?

虚拟网站

- 多个网站可以同时运行在一个单一服务器上
  - 利用不同的端口号
  - 利用不同的ip地址
  - 利用不同的域名

网站访问的原理

- 网站中的两种角色-浏览器 & 服务器
- 网站使用的协议-HTTP
- 浏览器
  - HTML语言解析器
  - 图片解析器
  - 声音播放器
  - 视频播放器
  - …
- 网站的访问过程
  - 没有域名的网站
  - 有域名的网站

网页的类型

- 静态网页
  - 设计人员设计成什么样子，用户看到的就是什么样子
- 动态网页
  - 根据访问者当时的访问环境通过服务器端程序实时生成的网页
- 以数据库做为后台的动态网页

动态网站技术

- Apache服务器+PHP技术
- WebLogic+JSP技术
- IIS服务器+ASP技术

网站环境的构建

- 本课程以IIS+ASP技术做为实例
- 典型ASP网站实现方式
  - 服务器操作系统平台
  - IIS版本 5.0 Vs 6.0
    - IIS 5.0 隔离模式
    - 工作进程隔离模式

IIS服务器安装配置

- 设置本机IP地址
- 安装IIS
- 检测服务器是否正常工作
- 测试asp开发环境
- 运行第一个ASP程序

IIS服务器的配置和管理

- IIS服务器的启停
- 新建立网站
- 配置网站的基本参数
- 配置ASP网站网页的组织方法
- 配置ASP网站的访问方法
- 配置ASP网站的性能
- 虚拟目录设置方法

Lab1 实践项目

- 1 配置计算机的IP地址
- 2 查看计算机使用端口的情况
- 3 安装IIS服务器
- 4 配置IIS服务器
- 5 创建第一个网站
- 6 配置网站相应参数
- 7 运行你的第一个ASP程序

实践如何启停服务器

实践如何启停一个asp网站

设置网站日志，查看网站日志

熟悉匿名访问网站的设置

熟悉虚拟目录的设置

在上述基本技能基础上，设计一个你自己网站，规划网站的各项设置参数，并实现