

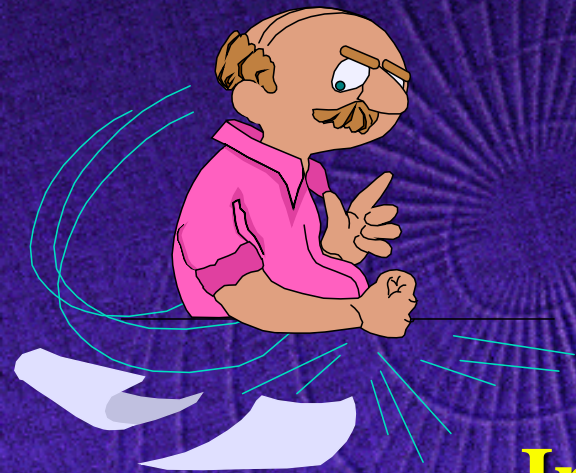
Internet Client-Server Systems

4020 A

Instructor: Jimmy Huang

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<http://www.yorku.ca/jhuang/4020A.html>



Motivation

- ◆ **Web-based Knowledge & Data Management**
 - A huge amount of Web data
 - how to organize, retrieve them, how discover interesting patterns and how to make a recommend from them
- ⇒ **Web Search Engine**
- ⇒ **Uber Taxi and Didi Chuxing**
- ⇒ **Amazon, Alibaba, Tencent, JD.com**
- ⇒ **Web Blog Analysis**
- ⇒ **Spam Email Detection**
- ⇒ **Online Electronic Medical Data Analysis**
- ⇒ **Electronic Health Care and eHealth**
- ⇒ **Social Network Analysis**

Examples of Web Search Engines

Google™

YAHOO!®

msn® 

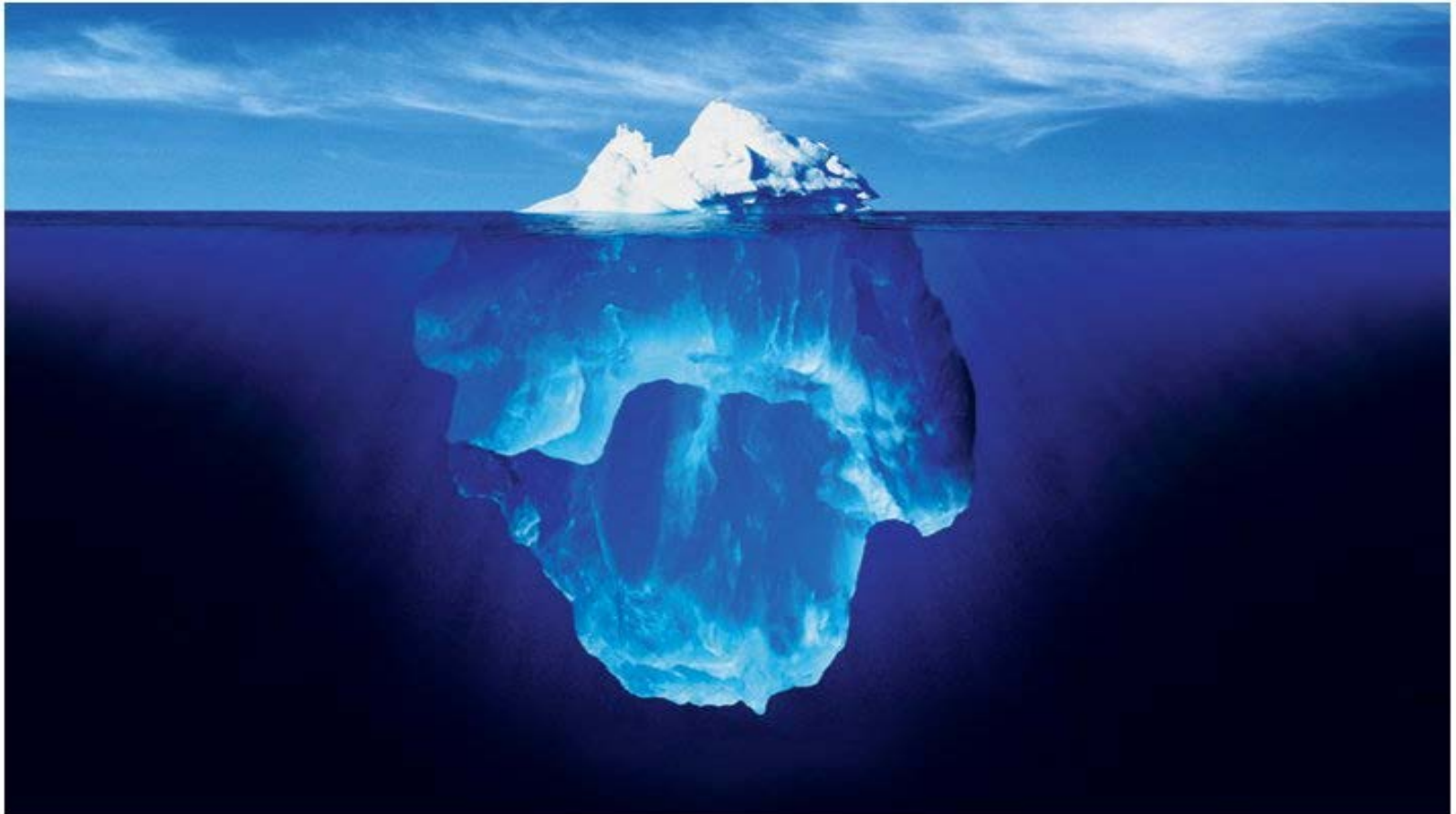
 AOL

Ask Jeeves®
Ask.com

alltheweb
• • • find it all • • •


altavista™

Examples of Web



Some Internet Related Research Projects for Students

- ◆ **“Context-Sensitive and Task-Oriented Adaptive Information Retrieval”**. This project is supported by NSERC Individual Discovery Grant (2007 - 2019)
- ◆ **“Analyzing and Searching Medical Data for Cost Effective Health Care”**. This project is supported by Early Researcher Award/Premier’s Research Excellence Award
- ◆ **“Finding Best Evidence for Evidence-based Best Practice Recommendations in Health Care”**. This project is supported by NSERC Collaborative R&D Grant
- ◆ **Other research projects will also be available such as IBM SUR and OCE projects etc.**
- ◆ **Advanced Data Mining and Machine Learning Technologies for Next Generation eHealth Decision Support Systems**



Course Objectives

- ◆ This course will cover both programming aspects of internet applications and advanced topics of Web technology, such as information retrieval, Web search and Web mining.
- ◆ The major objective of this course is for the students to learn how to analyze, design and implement internet applications and obtain a solid grasp of how techniques in Web technology can be applied to solve problems.

Course Content

- ◆ Introduction to client-server systems, WWW and Web technology
- ◆ HTML, XHTML and XML
- ◆ Servlets and Java Server Pages (JSP)
- ◆ JDBC and Java Script
- ◆ E-business and E-commerce
- ◆ Web mining, Web server logs and Web session
- ◆ Information Retrieval (indexing, search and ranking)
- ◆ Web search and Web crawler

Recommended Reading

- ◆ *Internet and World Wide Web: How to Program (2nd edition)*
 - Deitel M., Deitel J., Nieto T. R.
 - Prentice Hall, 2002
- ◆ *Advanced Java 2 Platform: How to Program*
 - Deitel M., Deitel J., Santry S. E.
 - Prentice Hall, 2002
- ◆ *Foundations of Web Technology*
 - Sarukkai R.
 - Kluwer Academic Publishers, 2003
- ◆ *Mining the World Wide Web: An Information Search Approach*
 - Chang G., Healey M. J. et al.
 - Kluwer Academic Publishers, 2003

Evaluation and Grading

- ◆ **3 assignments** (due through the term)
 - Assignment 1: will be announced soon (25%)
 - Assignment 2: TBA (25%)
 - Assignment 3: TBA (20%)
- ◆ **Final Exam** (30%) Dec

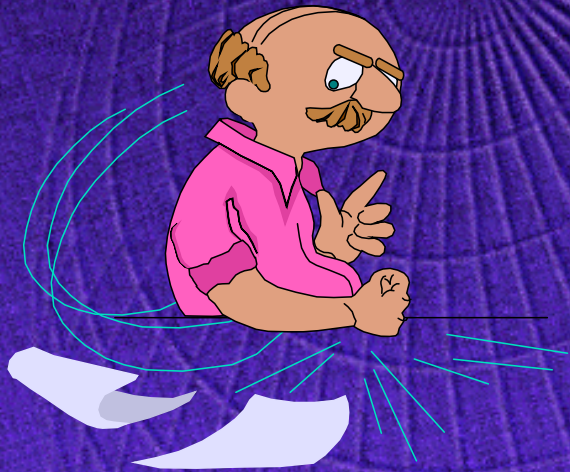
Group Assignments

- ◆ Each group consists of 4 or 5 members.
- ◆ There is a team leader in each group.
- ◆ The team leader should send me an email telling me how many people are in the group, their names, student Ids, email addresses and course section ID as soon as possible (before Sept 12).
- ◆ Your group assignments will be evaluated in terms of your programs, assignment reports and class presentations.

Class Time and Office Hours

- ◆ **Class time:**
 - **Thursday: 19:00pm – 22:00pm**
- ◆ **Class location: Accolade West 008**
- ◆ **Office hours (TEL 3048)**
 - **By appointment**
- ◆ **TA name: Sadra Abrishamkar (PhD candidate)**
- ◆ **TA office hours: to be arranged**

Introduction to Client-Server Systems, WWW and Web Technology

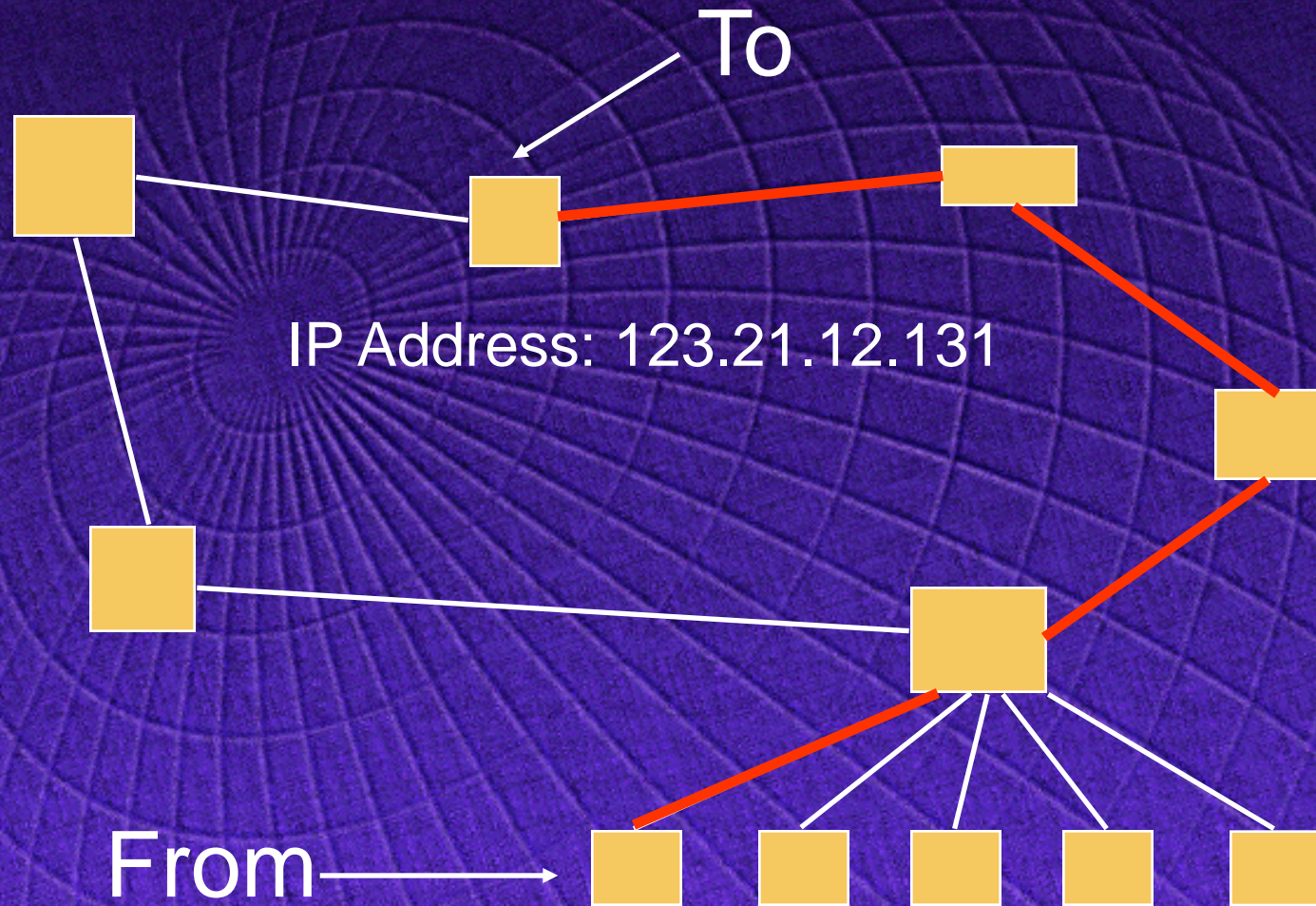


Week 1

Outline

- ◆ The Internet
- ◆ The Web
- ◆ What makes the Web work?
 - HTTP
 - URL
 - HTML
 - CGI
- ◆ Example of a Web page
- ◆ Summary

The Internet



The Internet

Worldwide collection of interconnected networks.

- ◆ Began in late '60s in ARPANET, a US project, investigating how to build networks that could withstand partial outages.
- ◆ Starting with a few nodes, Internet estimated to have over 100 million users in 1997, and over 270 million users in over 100 countries in 1998, with one million new users joining each month.

Historical View: Internet

- ◆ 1969 - Telnet
- ◆ 1970 - 4 computers
 - Stanford, UCLA, UC Santa Barbara, U Utah
- ◆ 1971 - FTP
- ◆ 1983 - 562 computers on the internet
- ◆ 1993 - 1.2 million computers on the internet
- ◆ 1999 -

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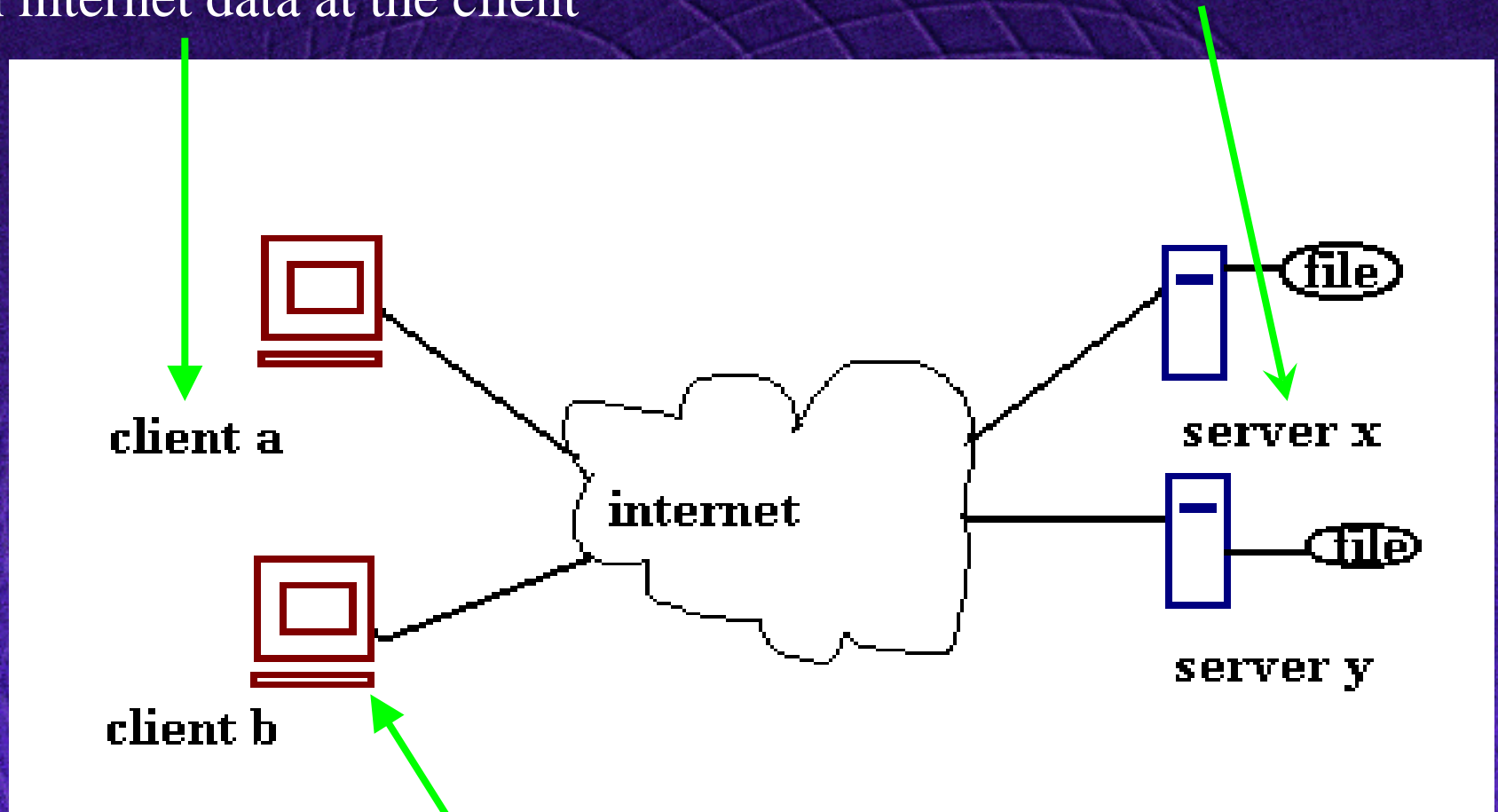
The Web

- ◆ World-Wide Web (Web, WWW)
 - networked information system that provides a simple way of browsing different types (text, pictures, video, audio, etc.) of information on the Internet using hyperlinks.
- ◆ Web pages
 - electronic documents that typically contains several types of information accessible via the World Wide Web
- ◆ Web sites
 - a collection of related Web pages of a certain individual, group, or organization.
- ◆ The Web uses a client/server model

Client-Server Model

Browser - software to interact with internet data at the client

machine that services internet request



machine that initiates internet request

Client/Server Interaction

