Internet Programming CSci 4131

Course Overview

Available at:

http://www.cselabs.umn.edu/classes/Spring-2015/csci4131

Course Website

All information related to this course will be available on the course website at:

http://www.cselabs.umn.edu/classes/Spring-2015/csci4131

You will be able to access:

- Schedule for exams and assignments
- Assignments
- Assignment submission site link on Moodle
- Lecture Notes
- Example programs
- Link to Moodle Forum

Contact Information

Course Instructor:

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Office Hours: Wednesdays 3:30 -- 4:30 pm

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Teaching Assistants

Koorosh Vaziri   vaziri@cs.umn.edu
  Office Hours: Mondays 2:15 – 3:15 pm
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  Office Hours: Thursdays 1:15 – 2:15 pm

Teaching Assistant Office Hours are held in Keller Hall 2-209

Email Contact for Help

Please use this email address instead of sending email to us individually:
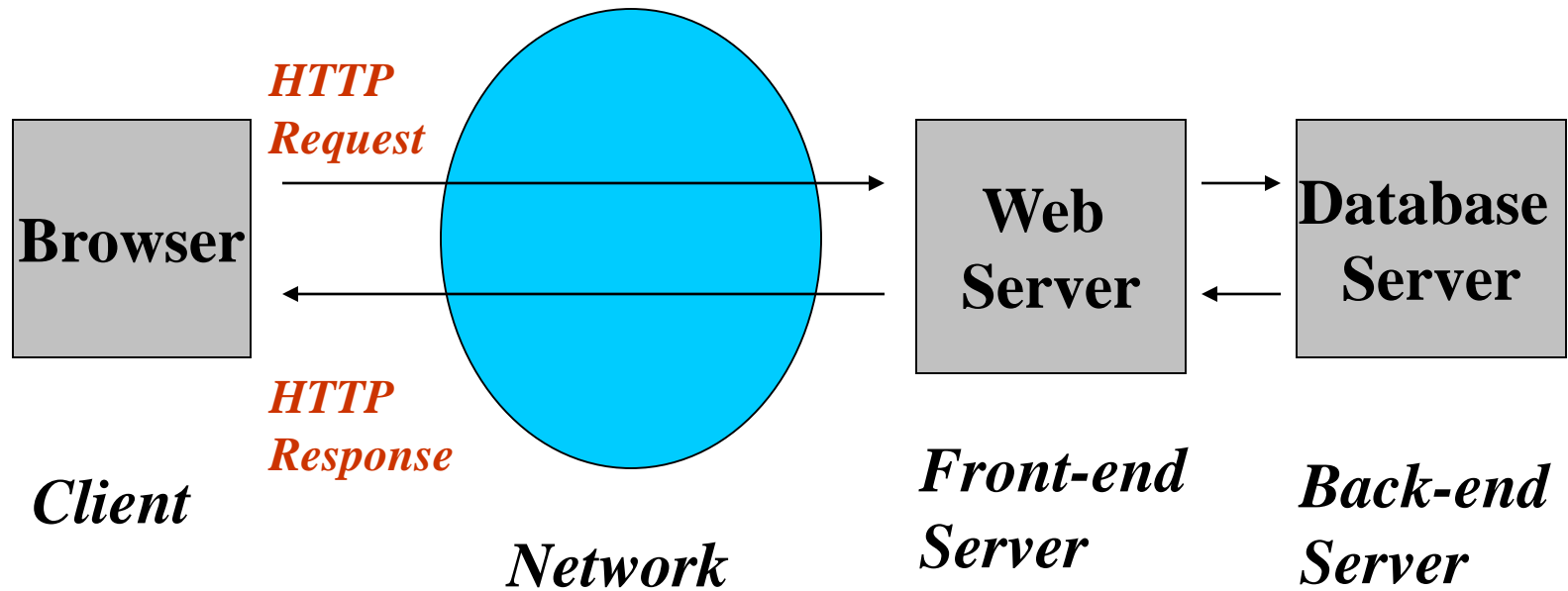
csci4131-help@cs.umn.edu

This is the preferred way to contact us and a get quick response.

Background

- Background from a systems programming course and familiarity with concurrent programming is required.
  - CSci 4061 or some equivalent course on Systems Programming.
- You should have good familiarity with Java programming.
- Some familiarity with TCP/IP network programming (CSci 4061 level)
- This is a programming intensive course, therefore you must have competence in dealing with medium size programs.

Overview

Browser

HTTP Request

HTTP Response

Web Server

Database Server

Client

Network

Front-end Server

Back-end Server

Course Objectives

Objective of this course is to learn the foundational structures and programming technologies for Web applications.

- Client-Server Interaction Protocol
  - HTTP 1.1, Common Gateway Interface (CGI)
- Client side programming
  - Code executes on the client side in the browser
  - HTML, HTML 5, Cascaded Style Sheets, JavaScript
- Server-side programming
  - Code executes on the sever or the backend computers
  - Dynamic generation of webpage contents
  - PHP, Python, Perl, Java Servlets, JSP
  - Connecting to backend database server

Course Topics

- Basics of HTTP protocol.
- Development of webpages and web applications using HTML5 and Cascaded Style Sheets (CSS)
- JavaScript for executing code at the browser-side for dynamic content generation and user interactions
- Google Map APIs
- Form processing and dynamic generation of webpage contents using Perl, Python, and PHP
- Maintaining application state and data in mysql server
- XML schemas.

Course Topics

- Introduction to HTTP 1.1 Protocol
  - TCP/IP programming using Java
- Client-side programming:
  - HTML5, Cascaded Style Sheets, JavaScript, AJAX (asynchronous operations)
  - Document Object Model (DOM)
- Server-side programming:
  - Python for CGI (Common Gateway Interface) programming
  - PHP for Dynamic HTML generation and CGI programming
  - Database Connectivity to a mySQL server using PHP and Python
- Introduction to XML
  - XML Schema, XSLT (Extensible Style Sheets)

Course Objective

At the end of this course you should at a comfortable level of knowledge and understanding of the foundations of web technologies.

You would be able to:

- Easily develop web applications using these technologies
- Easily learn new technologies, tools, and languages which will emerge over the coming years

Text Book

Internet & World Wide Web - How to Program   (Fifth Edition)

Author: Deitel, Deitel, and Deitel Publisher: Prentice-Hall

Online Resource:
http://www.deitel.com/books/iw3htp45

You can download the example programs in this book from the Deitel's website.

Web Resources

- This course involves learning many different technologies.

- Therefore we will use several resources on the web.

- Web is the best resource to learn many of the topics.

- Use the "Reference" link for useful websites.

Useful Reference Books

There are several useful reference books that are available online through U of M library system.

1. JavaScript - The Definitive Guide by David Flanagan
2. Building Web Services in Java

Course Resources

- Lecture notes will be available in the PDF format on the course website.
  - You will need password: login "student"
  - Password???

- Visit U of M library course page for CSCI 4131 for the reference books available online.
  http://www.lib.umn.edu

- You will find many helpful example programs on the course website.

Resources on Moodle

- Course News Forum page on Moodle
  - We will frequently post important notifications on this New Forum
  - You should frequently (once in couple days) check this forum
- Assignment submission will be through Moodle
- Grades will be posted through Moodle

Assignments and Exams

- You will be doing 8 programming assignments.
  - **Example of JavaScript assignment (photo slide show)**
    - Upload photo files for slide-show
  - **Example of Google Map assignment (marking info on map)**
    - Get location data and information for useful places and mark their locations on map
- All assignments MUST be done individually except for the ones for which group of two students are allowed.
  - **Please must read the policies for scholastic misconduct on the course webpage**
- We will have two in-class midterm exams
- There will be one final exam (in-class)

GRADING

- 10%   First midterm (October 20 in-class)
- 10%   Second midterm (November 24, in-class)
- 20%   One Final   (December 17 – 4:00-6:00pm)
- 60%   Eight Assignments
  - See the course webpage for the assignment schedule

- For grade cutoff see the class homepage.

Important

- All assignments involve substantial programming
  - Each assignment will require about 12-20 hours of work

- Please see the policies defining cheating and scholastic misconduct. These are posted on the course webpage.

- You will need an account on the CSE Lab machines for assignment that need access to mySQL server.

Student Conduct Code and Scholastic Dishonesty

- All students are expected to abide by the "Student Conduct Code". See Board of Regents Student Conduct Code

Please be cognizant of the following documents related to policies on scholastic dishonesty.

- Academic Conduct Policies for Students in Computer Science & Engineering Department Classes

- FAQ on Academic Conduct in Computer Science

- Office for Student Conduct and Academic Integrity FAQ

All cases will be reported to the Office for Student Conduct and Academic Integrity (OSCAI).

Student Conduct Code and Scholastic Dishonesty

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University.

Student Conduct Code and Scholastic Dishonesty

- Consulting and seeking help from others (students or non-students) on assignments and exams when asked to do an assignment problem individually.

- Consulting and seeking help from others not in your group (students or non-students) on assignments when asked to do an assignment problem in a designated group.

- Cheating on exams. Consulting others or using any material which is not permitted on the exam.

- Copying material from some source, such as the Internet or books, and presenting it as you own solution or design when asked to solve a problem yourself.

- Attempt to change an already graded assignment and asking for re-grading of that material.

Student Conduct Code and Scholastic Dishonesty

- Attempts to fabricate the submission date/time of a late assignment to make it appear like an on-time submission.

- Stealing some other student's solution or program.

- Submitting solutions prepared by the TAs and the instructors during the prior years of the course offering.

- Obtaining information through the Internet and submitting it as your own work on an assignment.

- Purchasing a solution for your assignment from someone.

- All group programming assignments must be done together and each group member must be fully involved in all aspects of programming.

Student Conduct Code and Scholastic Dishonesty

- You are responsible for protecting your assignment files, program code irrespective of the medium and place where it is stored.

- You are responsible for protecting your assignment program files on your personal computer, laptop, or mobile device.

- Giving access to your personal computer or U of M account to another student thereby enabling the student to access to your assignment work will amount to scholastic misconduct on your part.

Questions?