Introduction to Internet Technology and Web Programming

Computer Science 103
Boston University
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Lecture 1-1

BU CS 103, Spring 2019

Today's Materials

- CS 103 Course overview
- Domain names, URL & IP address
- What will be done in Lab 0 assignment
  - ✓Start your web-hosting by
    - ➢Registering your CS account
    - ➢Creating your web hosting through BU CS servers
- What you have to do for next lecture and lab

CS 103 Goals!

- Main goal:
  - ✓Learn how to build a website from scratch

    - ➢https://natcharewicz.com by Natalie Charewicz
    - ➢https://angelahuphotography.online by Yjie Hu
    - ➢https://cs-people.bu.edu/vranjbar/alisha by Alisha Kothari

CS 103 Goals!

- Other goals:
  - ✓Learn coding with …
    - ➢HTML: Hypertext Markup Language
    - ➢CSS: Cascading Style Sheets
    - ➢Web Programming Languages such as JS and PHP

CS 103 Goals!

- Some other goals:
  - ✓Learn also about …
    - ➢Domain names
    - ➢File Transfer Protocol (FTP) and Secure Sell (SSH)
    - ➢character encoding to interpret text languages other than English
    - ➢deploying free tools other than building from scratch (CSS templates, Lightbox, forms, TypeIt, charts, maps …)
    - ➢Optimizing for search engines

About CS 103: Lectures …

- In lecture, we will explore these skill and discuss related issues of:
  - ✓ Web **Accessibility**: Removing barriers for people with disabilities
  - ✓ Web **Findability**: Easily find materials of a website from outside or inside
  - ✓ Web **Performance**: handling more users at the same time
  - ✓ Web **Security**: security of websites, web applications and web services.
  - ✓ Web **Usability**: ease of use of a website.

About CS 103: Labs …

- In lab, we will get hands-on practice with these skills and use them to build individual web pages and, eventually, **websites** & **weblogs** by HTML/CSS programming.

About CS 103: when & where?

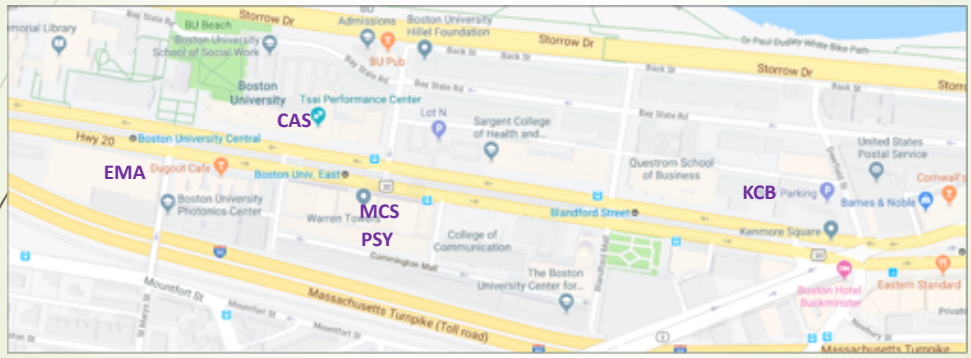
Lecture is here, in CAS B18, Monday and Wednesday 6:30-7:45pm.

Lab is on Thursday:

- Session A2: Thursdays 9:30-10:20am, KCB 104
- Session A3: Thursdays 11:15am-12:05pm, KCB 102
- Session A4: Thursdays 12:30pm-1:20pm, KCB 102

You must register for both the lecture (section A1) and one lab section (A2, A3 or A4).

Where is everything at BU placed???



About CS 103:
Instructor: Vahid Azadeh-Ranjbar [**vranjbar@bu.edu**]

About CS 103:
other teaching staffs!

- Graduate Teaching Fellow:
  - Ali Raza
- Undergraduate Course Assistants:
  - Xinyuan Zhang
  - Jia Jia Shen
  - Shizhan Qi

About CS 103: who are the teaching staffs? When are their office hours?

- Find all of us at BlackBoard under "staff" tab

About CS 103: Course Website

Find it at https://learn.bu.edu

- All assignments and readings
- Turn in your online assignments
- Lecture notes will be posted on Course Documents page
- Exam solutions
- Syllabus is on the Course Documents page

About CS 103: required course material

What was needed to purchase in previous semesters:

~~1. Register a domain name and buy web hosting~~

- Cost was about **$60**.

~~2. A Turning Point clicker~~

- Cost was about **$30**.

Now, what you need to register:

1. A free classroom response system provided by Piazza
2. A free web hosting account provided by CS department at BU
3. At the second half of the class (about end of March), a domain name and an external web hosting which cost **¢99** to **$9.99** after reimbursement.

About CS 103: Textbook

No paper textbook

- Online readings will be posted on the Blackboard course website

About CS 103: computer science computer lab

- As a CS 103 student, you can work in the Computer Science Undergraduate Lab (EMA 302), which has all the software you will need
- This lab is open all day, every day, except University holidays and Monday and Wednesday mornings. Lab hours: http://www.bu.edu/cs/resources/laboratories/undergraduate-lab/
- You will need a CS account to use the computers in EMA 302
- Get your account in person in EMA 302. Bring your BU ID.

Using Your Own Computer

- Since all recommended software is installed on the computers in EMA 302 and EMA 304, you do not need to use your own computer.
- But you can if you wish. See the Course Materials page of course website.
- DOWNLOAD SOFTWARE ONLY FROM THE OFFICIAL WEBSITES! (Links given on Course Materials page.)

About CS 103: grading

Homework assignments	10%
Lab (including challenges and assignments)	20%
Mid-Term Exam 1	10%
Mid-Term Exam 2	15%
Final project (website + Presentation)	10%
Final exam	25%
Class participation (including lecture and lab)	10%

Final Exam Scheduling

- Date will be confirmed later in the semester
- Please wait to make travel plans until we know for sure

More on Assignments

- Lab sections meet **Thursdays** and include two parts; **lab challenge** and **lab assignment**.
  - Lab challenges are supposed to be done during the lab.
  - Lab challenges are due **the same day** as lab section at **8:00 pm**.
  - Lab assignments are due the following **Wednesday** at **6:00 pm**.
- Homework assignments will be posted on Blackboard on Mondays and will be due the following Monday at **6:00 pm** (start of class)

- Either can be submitted up to 48 hours late with a **10% penalty per day**
- No assignments accepted after that
- Remember that lowest HW and lowest lab assignment grade will be replaced by the final exam grade if the replacement helps.

More about Class Participation

Class Participation recognizes actions you take that enhance learning by the class. This includes:

- Attendance
- Presenting on Show and Tell Day
- Regular Participation in class discussions
- Regular Participation in polling using clicker
- Attendance/contribution in lab sections

If you must miss class or need to leave early, please notify me in advance by email (vranjbar@bu.edu)

If You Have Any of These…

- Planned absences for religious observance
- Planned absences for BU athletics
- Disability accommodation for tests or assignments

Please let me know as soon as possible so that we can plan for them.

About CS 103: Collaboration Policy

You are encouraged to work together to understand general concepts…

… but all homework assignments, lab assignments, and exams must represent your own work.

Laptops & Devices in Class

- Use for note-taking or polling or coding only
- No social media, email, games, homework (even for CS 103), etc.
- Submit homework and lab assignments BEFORE class, not during class

More on Final Project

Build your own website

Great websites from previous terms include:

- Resume / portfolio site for job hunting
- Website for BU Outing Club
- Reviews
  - ✓ Young adult fiction
  - ✓ Restaurants
    - Best Ramen in Boston
- Guide to your neighborhood – here or at home
- Website for mom's company, dad's company, or your own company

Considerations for Choosing Your Final Project

1. Choose a topic you really care about.
2. Choose a topic for which you can create your own content
3. Make it specific.
   - Instead of "News about sports," focus on a specific team— even one that doesn't have a website yet
   - Instead of "Restaurant reviews," how about "Greek restaurants in Boston?"
   - More focused sites are easier to write for

Lab 0: how to connect to the World Wide Web (WWW)

- WWW is a world including more than 50 billion web pages.
- If you want to take a look websites and webpages, you can use a browser like Firefox.
- But if you want to
  - change something in one of the web pages,
  - Remove a page or create a new page …

you need to have access to that webhost (if you host any).

Lab 0: how to connect to the World Wide Web (WWW)

- There are two methods to access to your webhost:
  - ✓ Using SSH (Secure Shell)
  - ✓ Using an FTP software (File Transfer Protocol)
- The way WWW is made is the same as your computers.
  - It includes files and folders.

Lab 0: connect to your account in WWW through SSH

- To use SSH, you need to use Terminal (mac users) or Secure Shell App (windows users).
- To use Terminal or Secure Shell App, you need to learn some specific commands.
  - For example if I want to connect to my account through Terminal, I need to use the following command:

    ssh vranjbar@csa1.bu.edu

    - ✓ **ssh** is the command to connect to your account
    - ✓ **vranjbar** is a username
    - ✓ **csa1.bu.edu** is the server name that you have an account in.
  - Then you need to enter a password to connect to your account.

Lab 0: connect to your account in WWW through SSH

- When you connected to your account, to see your files (any thing with extension is a file) and folders, you need to use another command called "ls".
- SSH is not like your computer where you drag files and folders.
- You need to use commands to move from one folder to the other folders or creating a new folder.
- The following is a short list of basic SSH commands:
  - ✓ *ls* show directory contents (list the names of files)
  - ✓ *cd* move forward or backward between folders)
  - ✓ *mkdir* create a new folder (short for make directory)
  - ✓ *touch* create a new file (such as text files or html files)

A demonstration for Lab 0

Watch the video on Blackboard at
Assignments → Lab 0 → Pre-Lab Tasks

Next Steps

- Accomplish the 5 actions at "Required Course Materials" on BlackBoard