Some general advice

• Look and play with examples found on the web

• Experiment fearlessly (web browsers don’t break easily)

• Save your work frequently!

Clicker question

Web pages are written in HTML, then delivered to me with formatting, looking like a picture. Who computes that change from the HTML language to the finished product?

(A) my computer
(B) the server
(C) some computer somewhere else connected through the internet
(D) no idea

Selected RQs

• How complicated is HTML? How do you make complicated stuff with it? (i.e., how can I make Facebook with HTML!?!??!?!?!!)

• Should we be making sure to memorize every line of code that we encounter or does it eventually come natural to us?

• In your opinion, how similar is learning HTML to learning a ‘traditional’ second language? Does it seem easier or harder?

Selected RQs

• I used to think when doing HTML and making a webpage, you’d enter what you’d like to be on the webpage into some kind of program and it spits out the customized alien language we know as HTML, and you'd just copy and paste that. Do we actually have to type out every little tag manually? Or does a program like this exist. i.e., is there a faster way of creating HTML? If this is the case, what (in your opinion) is the point of learning basic HTML at all?
Module I: Data Organization

Names and Variables

Learning Goals

you should be able to

• explain how names convey properties and/or structure of data, with particular attention to names in computing environments such as domain names, file names, URLs or e-mail addresses

• explain how variables are used to ease data management and to describe actions on data, and be able to use variables for these purposes in familiar contexts

Exercise

• Here’s a URL:

  http://www.publicaffairs.ubc.ca/2009/09/01/ubc-this-is-your-first-year-class/

• Which part of the URL is a domain name?

Domain names

• http://www.publicaffairs.ubc.ca/2009/09/01/ubc-this-is-your-first-year-class/

• The following are also (higher-level) domain names:

  ▪ publicaffairs.ubc.ca
  ▪ ubc.ca (2nd-level domain)
  ▪ ca (top-level domain, TLD)
Exercise

Draw the hierarchical relationship between domain names that can be inferred from the following domains:

- www.ubc.ca
- www.cs.ubc.ca
- ugrad.cs.ubc.ca
- remote.cs.ubc.ca
- interchange.ubc.ca

Solution

```
.  
  ca  
  
  ubc.ca

  www.ubc.ca
  cs.ubc.ca
  interchange.ubc.ca

  www.cs.ubc.ca
  ugrad.cs.ubc.ca
  remote.cs.ubc.ca
```

Selected RQs

I do not understand why you would provide two different names for a website. It makes sense that you would change the ending, have a website with .com, .org, and .html, inorder to direct everyone to your page despite the domain they are used to using. I don't see any sense in changing a middle part of the web address (csc101 to wmst201), why do that?

Exercise

- Draw a hierarchical diagram showing relationships between folders and files that can be inferred from the following URLs. (Hint: the root of the diagram is the folder called "ALUMNI".)

  hkin.educ.ubc.ca/ALUMNI/Home.html
  hkin.educ.ubc.ca/ALUMNI/documents/OurPast.html
  hkin.educ.ubc.ca/ALUMNI/documents/sixty.htm
  hkin.educ.ubc.ca/ALUMNI/PDFs/2008 Grads.pdf
Exercise

• What is the value of the variable "balance_in_CAD", after the following sequence of variable assignments?

\[
\begin{align*}
\text{CAD\_per\_EUR} &= 1.32; \\
\text{balance\_in\_EUR} &= 100; \\
\text{balance\_in\_CAD} &= \text{balance\_in\_EUR} \times \text{CAD\_per\_EUR};
\end{align*}
\]

Exercise

• How can you modify the following sequence of variable assignments to convert 100 CAD (Canadian dollars) into EUR (Euros)?

\[
\begin{align*}
\text{CAD\_per\_EUR} &= 1.32; \\
\text{balance\_in\_EUR} &= 100; \\
\text{balance\_in\_CAD} &= \text{balance\_in\_EUR} \times \text{CAD\_per\_EUR};
\end{align*}
\]

Exercise

• How can you modify the following sequence of variable assignments to convert 100 CAD (Canadian dollars) into EUR (Euros)?

**Answer:**

\[
\begin{align*}
\text{CAD\_per\_EUR} &= 1.32; \\
\text{balance\_in\_CAD} &= 100; \\
\text{balance\_in\_EUR} &= \text{balance\_in\_CAD} / \text{CAD\_per\_EUR};
\end{align*}
\]

Exercise

• **Note:** The following sequence of assignments has exactly the same function as the one shown previously, but is much less human-readable, and therefore inferior:

\[
\begin{align*}
x &= 1.32; \\
y &= 100; \\
z &= y / x;
\end{align*}
\]

(In fact, you could use ‘alice’ for ‘x’, ‘bob’ for ‘y’, etc., and still get the same function.)
Exercise

- **Key CS concept:** Computer scientists often have the freedom to choose names for object (e.g., variable). In order to make it easier for themselves and other to understand what’s going on, they like to use names that convey the meaning of an object to a human reader.

Clicker question

- What is the value of balance at the end of the following sequence of assignments?

  balance = 123;
  balance = balance + 100;
  balance = balance – balance;

  (A) 123  (C) 0
  (B) 223  (D) 23