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

Selected RQ1s

- Some webpage names do not have the www (World Wide Web?) in their URL. Why is this and why are they allowed a different naming scheme? Is it because they are categorized into more secure institutions, such as UBC or TD Bank?

(submitted by Dasha)

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?

  CAD_per_EUR = 1.3597;
balance_in_EUR = 100;
balance_in_CAD = balance_in_EUR * CAD_per_EUR;

Exercise

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

  CAD_per_EUR = 1.3597;
balance_in_EUR = 100;
balance_in_CAD = balance_in_EUR * CAD_per_EUR;

Answer:

  CAD_per_EUR = 1.3597;
balance_in_CAD = 100;
balance_in_EUR = balance_in_CAD / CAD_per_EUR;

Exercise

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

  CAD_per_EUR = 1.3597;
balance_in_EUR = 100;
balance_in_CAD = balance_in_EUR * CAD_per_EUR;

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:

  x = 1.3597;
y = 100;
z = y / x;

  (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 others 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?

```plaintext
balance = 123;
balance = balance + 100;
balance = balance - balance;
```

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

Clicker question

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

```plaintext
balance = 123;
balance_new = balance + 100;
difference = balance_new - balance;
```

(A) 123  
(B) 223  
(C) 0  
(D) 100

Clicker question

• What is the value of `your_balance` at the end of the following sequence of assignments?

```plaintext
my_balance = 123;

your_balance = 456;
my_balance = your_balance;

your_balance = my_balance;
```

(A) 123  
(B) 456  
(C) 0  
(D) undefined
Clicker question

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

```python
my_balance = 123;
your_balance = 456;
temp = my_balance;
my_balance = your_balance;
your_balance = temp;
```

(A) 123  (C) 0
(B) 456  (D) undefined

Exercise

```markdown
Marks:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>70</td>
<td>65</td>
<td>55</td>
</tr>
</tbody>
</table>
```

• What is Marks[3]?

• An action that might be performed on this table is to add a new amount to someone's grade:


  What would Marks[3] be after this action?

Tips and Tricks

• In Computing Science, the symbol “=” can be used in two meanings:

1) to express equality (as in math), e.g., 3=5 (false) or 3=5-2 (true)

2) to assign values to variables, e.g., X=5 (after doing this, variable X has value 5, and the equality X=5 is true)

• In HTML a statement like X=5 always refers to a variable (actually, attribute) assignment.

• Likewise, in JavaScript (covered in Module 3), a statement like X=5 always denotes variable assignment, while equality is written differently (X==5).

• In other contexts, ‘=’ is used to denote equality, and ‘:=’ or ‘<-’ to denote variable assignment.
Selected RQ2s

- Websites like Twitter use certain programs to shorten URLs so links for videos, and articles and pictures. How is this done so we can still access the original links?

  (submitted by Arash)

- It has been stated in the assigned module readings that in the course web page URL, the public_html folder is not shown in the URL by default. Are you able to hide multiple folders at once in the URL? For instance, are you able to "tell" the computer to hide both the wmst201 folder and public_html folder by default from the URL?

  (submitted by Adrienne)

Selected RQ2s

- Since variables are used to describe data that changes over time, is a file name considered to be a variable since a person may be saving each new version of the document under the same name?

  (submitted by Sandra)

Learning Goals [revisited]

**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