

F13 ITEC1000A Assignment #1

This assignment asks you to complete the questions based on the textbook and present the solution, as a Web page using validated HTML 4.01 coding.

- For this assignment, manual coding using a plain text editor is only allowed; do not use a code generator of any kind whatsoever.

The [basic page template](#) is provided below; you may copy-paste into your editor to begin your coding.

PC users Note:

- You may use any plain text editor such as **Notepad** typically found in the **Accessories** program folder of Windows; alternatively, you may prefer to download and install others such as **Notepad++**.
- When saving your html document in **Notepad**, choose the **Save-as** option and be sure to specify "**All files**" as the *type* and **UTF-8** for the *encoding*.

Mac users Note

- You may use the **TextEdit** program found in the **application** folder; again alternative programs such as **Text Wrangler** are available.
- You must ensure that your html document is saved in **plain text** format -- (a) you may set it as the default format in the program **preferences**, or (b) when the document is ready to be saved, select and format the entire text as plain text before saving.

In both cases ensure that the file names are precisely as specified in the instructions below.

Tasks: Be sure to complete all tasks below as best as you can.

1. **Construct** a home page named "**index.html**" -- to be uploaded to your **itec1000a/a1/** folder using standard HTML 4.01, -- **fully presenting** questions and your solutions for items listed at the bottom of this page.

This page must include:

- A title tag in the head with the text, "Assignment #1" followed by the course number and your full name; do not include your student #.
- An introductory paragraph stating the purpose of your page;
- Logically designed page layout;

- An embedded image example appropriate for your site.
 - Elements samples for appropriate text formatting;
 - Appropriate example of a defined table and a list format of your choice.
 - Hyperlink examples: **internal** or **local** link to your question & solution section/page, and external resources used where appropriate, e.g., #17.
 - This file must be named “**index.html**” – All in lowercase.
2. **Upload** your pages to the remote site:
- **index.html** to the *itec1000a/a1/* folder;
 - your image file(s) to the *itec1000a/images/* folder.

3. **Test** uploads by browsing your site. The format of your URL for browsing the home page is:
- <http://www.students.yorku.ca/~yourusername/itec1000a/a1/>

Replace "*yourusername*" with your **real** username.

Tips for troubleshooting common faults: If you page does not display at all but defaults to, e.g., a python server page, check spelling, syntax, etc. If your page displays the HTML codes, it was not saved as specified; resave and re-upload.

4. **Validate** your code: copy-paste your URLs to the validator at the [w3c.org code validation site](http://www.w3.org) -
- Debug your codes as necessary to achieve a **PASS** status to receive the validation sticker icon codes for HTML 4.01 which will be displayed at the bottom of the page;
 - Append (copy-paste) the validation icon codes at the bottom of your *passed* pages.
 - Do the best you can to remove the errors identified; under no circumstances append the validation icon codes to pages that have not passed validation – presenting a bogus validation icon is a violation of academic integrity and invalidates your entire submission, i.e., the entire assignment mark will be a **zero**.

5. **Submit** your assignment by sending the URL for your index page to the instructor via the *Moodle Messages* facility.

- First open a message box to Paul Kashiya in Moodle messages.
- Next copy-paste of your URL from the browser’s address bar to the message area - no other text is required – and **send**.

Note: Moodle message is the only accepted method for submitting your assignment; do not send by direct email to the instructor. It goes without saying then that the uploading of the files via FTP by itself does not count as 'submitting' the assignment. Also, receipt confirmation of your submission will not be sent by the instructor but your *submission* is recorded by the Moodle Message system automatically so you may verify submission by viewing your message history to the instructor.

Questions:

1. Determine the place digits for four-digit numbers in base-16.
E.g., from right to left, the right most place digit is 1.
2. In relation to your answer for #1, which base-2 digits have the same power?
E.g., from right to left, the right most place digit has the power of 0, i.e., 2^0 or the 0th digit.
3. Convert the hexadecimal number **9E3** to decimal,
4. Convert the binary number **011100111011** to Base-4.
5. Convert the binary number **10111010001** to Octal.
6. Convert the binary number **111100011100111110** to Hexadecimal.
7. Convert the binary number **11110101** to Decimal.
8. Convert the hexadecimal number **F6DA** to binary.
9. Convert the binary number **0.1010001** to Decimal.
10. Convert the binary number **110010.10** to Decimal.

11. Add the binary numbers

$$\begin{array}{r} 1\ 1\ 0\ 1\ 1\ 1\ 1\ 1\ 1 \\ +1\ 1\ 0\ 1\ 1\ 0\ 1\ 1\ 1 \\ \hline \end{array}$$

12. Add the binary numbers

$$\begin{array}{r} 1\ 1\ 0\ 1 \\ 1\ 0\ 0\ 0 \\ 1\ 1\ 1 \\ +\ 1\ 0\ 1 \\ \hline \end{array}$$

13. Using the minimum required number of bits addition in 2's complement notation, perform the operation, 11 -9 by preserving addition. Show the process for deriving the final decimal number.
14. Convert the ASCII code to hexadecimal.

```
01010111 01100101 01101100 01101100 00100000 01100100 01101111
01101110 01100101 00100001
```

15. Now refer to the ASCII table on page 102 of the Englander text 4th ed. , and decode the message.
16. On average, a typical page of text holds roughly 2000 characters. Approximately how many pages of Unicode text can a storage media with 700MB of free space hold?

17. Use the Web as a resource to investigate MPEG-2 and summarize what it does and how it does it in your own words; cite the resource site(s) appropriately.

18. Complete the table below.

property	GIF	PNG	JPEG
Type of image			
Type of compression			
File size			
Color capability			
Strengths and weaknesses			

Web Page Template.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<html>
<head>
<meta content="text/html; charset=iso-8859-1" http-equiv="Content-Type">
<title>Web Site Test Page</title>
```

```
<body>
<p>Hello world!!</p>
<p>This is my remote Web site test web page. If you can see this, my remote site is successfully
activated.</p>
</body>
</html>
```