COMP-206
Software Systems
Assignment #4

Due: March 30, 2009 at 23:55 on Web CT

<u>CGI, HTML and C</u>

Our goal in the last two assignments of this course is to explore distributed processing. The STORE you will build here will be upgraded again in your subsequent assignment. You are required to work in teams of 2 or 3 students, for assignments #4 and #5. You must work with the same students for each assignment. Select your teammates well. You are permitted to do these assignments alone, but I suggest you do not. Part of the motivation of these assignments is to get you to use the RCS tools, and you best experience that in a team environment. Each team member will hand in the same files to WEB CT. You must also provide an extra file named TEAM.TXT that identifies who your team members are. List their full name and student ID numbers. You are also required to indicate what sections of the assignment you worked on specifically.

The following resources are available for you:

- McGill Set-up personal web page: http://www.cs.mcgill.ca/socsinfo/webpage/

- McGill Set-up CGI interface page: http://www.cs.mcgill.ca/socsinfo/cgiperl/ (also for Perl)

- Web Tutorial: http://www.cs.tut.fi/~jkorpela/forms/cgic.html#get

SETUP

To get this assignment functional you must first set-up your McGill web page and you can try out the sample CGI and Tutorial above to help you further.

You must go to the second floor ENGMC and speak to the support staff in room 209N so that they can set-up a group name for your team. With this group name you will be able to create the RCS repository for your code. Provide this group name in TEAM.TXT.

This version of your store must have three pages. Divide the work envenly among yourselves. The next page describes what each web page should do.

Note that you will store all your files in the RCS repository: html, css, c, h, java, and txt.

Enoy this assignment, be creative. You are permitted to go beyond the scope of the assignment but you will ONLY be graded on what was asked for. The additional elements are for glory, not grades. Do not replace requirements that give you grades for glory features because you could lose points.

HOME PAGE

The first page is the introduction page and should be programmed in HTML, CSS and Java. It will introduce the store, provide a flashy graphic and a CSS menu to the other two web pages – you **cannot** use a web-authoring tool to write the code. This page must have: Company Name, CSS menu with links to the other pages, at least one graphic and at least one paragraph providing advertising. Your web page must also implement a Java clock that ticks (in text or graphic) while on this page. You are permitted to download a free Java clock from the web. Make the page attractive. You will be graded on "prettiness" and professionalism. To get ideas, google some companies to see how their sites are developed. Do not select a mediocre site. Select a well design site and use it as inspiration. Do not steal code from them! Provide the name and address of the web site that inspired you in TEAM.TXT, so we can check it out and compare it with your code.

WEB CATALOGUE

The second page will be the store's catalogue detailing the products the customer can purchase. It must be programmed using HTML, CGI and C. It will contain the products the customer can purchase. The page will have a title for each product, a graphic of each product, and a paragraph description for each product (minimum 3 items). Each product will have a checkbox on the left-hand side so the customer can indicate if they would like to purchase that item. The checkbox is initialized as unchecked. On the right-hand side there will be a textbox for quantity. It should be initialized to zero. A submit-button at the bottom of the page will process this CGI form. This page should be attractive. I suggest to use the <table></table> or CSS style sheet commands.

At present the submit-button will call a C program, called submitWebsite.c. This program will append the query string into a text file named queryCatalogue.txt. Each time the submit-button is invoked the query string is added as a new line in the text file. A special string-flag will be sent through the CGI parameter list to identify that this request has come from the catalogue submit button. This string will be: command=catalogue.

When the C program is completed a new web page is displayed with two selection links: one to return to the catalogue and the other to return to the Home Page. This page will be generated by your C program. We will expand the functionality of this page on the next assignment.

LOGIN PAGE

The third page will be the login page. It will be a simple HTML and CGI page that will ask the user for a user name and password. The password textbox should not display what the user is typing. A submit-button will call a program called submitWebsite.c. It is the same program used for the catalogue. Since more than one of you will be editing this same file you will need to be careful. You must use the RCS features. To identify that the request has come from the login page a special string-flag will be sent through the CGI parameter list to identify that this request has come from the login page submit button. This string will be: command=login. This program will verify that the user name and password entered on the web page is valid. To do this the program will open a pre-existing text file called USERS.TXT. This file will contain user names and passwords. Each user will be on one line in this text file. The user name will be a single word and will come first. A space will separate the single word password. A carriage return will denote the end of the record. If the user name and password is valid the screen displays WELCOME otherwise it displays TRY AGAIN. In either case a link to the login page and another link back to the home page will also be displayed.

Note: the USERS.TXT file is an encrypted text file. You can use anything from ass#2 or #3 to help you.

WHAT TO HAND IN

Given that your web site is online, the TA will be able to run it using a normal web browser from anywhere. Do the following: ZIP everything and submit to WEB CT as normal. In addition, submit to WEB CT a simple HTML file with a single link to your operational web site. The TA will only need to click on it to get to your site. Also submit to WEB CT the TEAM.TXT file. To help us divide the work among the TAs also email ME on WEB CT the TEAM.TXT file, but only one team member from your group needs to do this. ALL team members will submit the same work to WEB CT.

Submit the following files (everyone in your team submits the same things):

- An HTML file that only contains a single link to your functional web site

- Your three HTML documents with supporting CSS files, graphic files and txt files

- Your one C program

- Your one Java program

- Your output files

- The password file

- TEAM.TXT – Also email to my WEB CT account

To help organize grading, please also make a printout of TEAM.TXT and hand it in to me in class.

HOW YOU WILL BE GRADED

- This assignment is worth a total of 20 points

- +5 Setup:

    - +1 CVS Usage

    - +1 Group user name

    - +1 PUBLIC_HTML setup

    - +1 Inspirational web site

    - +1 TEAM.TXT and work division

- +4 Introductory page (+3 HTML/CSS, +1 Java)

- +5 Catalogue page (+2 HTML/CSS, +3 C)

- +6 Login Page (+2 HTML, +4 C)