CMIS 102: Introduction to Programming

Assignment 2: Sequential Structure Programs

Summary:

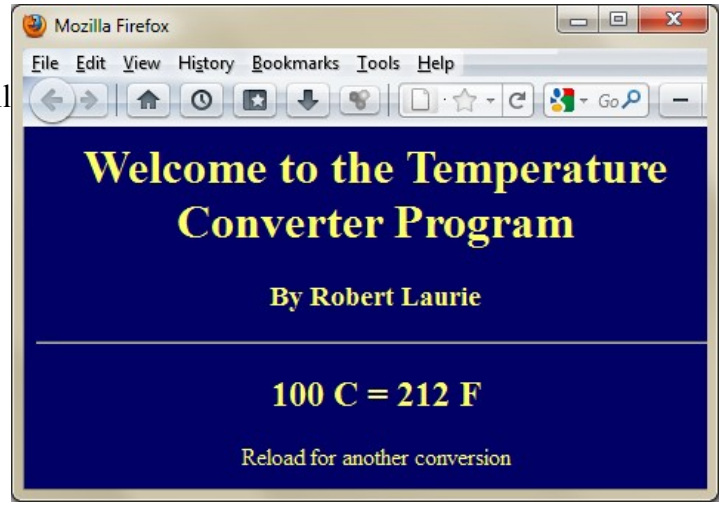
This assignment has two different parts and is worth at total of 15 points. All parts will require you to write a Program Design Document to include:

1. Written specifications
2. Algorithm design with flowchart description of sequential program process and equations
3. Known test data and expected results

Program Implementation needs to be demonstrated by creating JavaScript programs embedded in two HTML doucments.
To submit your assignment please submit a hyperlink to the HTML documents for each program and also upload your final design document. You will be given partial credit based on the completeness and organization of what is submitted.

Part A: Temperature Conversion Program – 6 Points

Program Requirements:



Design and implement a program will convert a temperature between Celsius and Fahrenheit temperature systems:

1. Create a program design document that includes program specifications, algorithm design, and known test data. You may use any vector graphics program to design the flowchart, but my suggested programs yEd, PowerPoint, or LibreOffice Draw. Save your Program Design Document as an MS Word doc file named **`C2FConverter-Design-YourName.doc`** The flow chart needs to be embedded in this document.
2. Do the implementation of the designed program by writing a JavaScript program embedded in the HTML document named **`C2FConverter-YourName.html`**
    a) Prompt for a Celsius temperature to convert
    b) Perform the conversion using the appropriate mathematical formula
    c) Write the Output to the body of the HTML document using the document.write( ) JavaScript object method. Display in the output both the input value and the results with units and your name as the programmer.
3. Verify your design using the test data and correct your design as necessary, which may require you to change your design document. Program design and implementation is often an iterative process.

Part B: Dynasty Casino – Chip Counter 9 Points

The Imperial Pacific Casino http://imperialpacificsaipan.com/en/ in Saipan has decided to automate the chip counting using a computer program. They have contracted with you to create a chip counting program that will assist in cashing out client's chips. They have agreed to fly you over for an all expense paid week to observe the casino in action.

You enjoy your time in Saipan, while doing your Design Phase. You have agreed that you will not leave Saipan until all parties agree with your Program Specifications and Design. Once the design is approved you will enter the Implementation Phase and return home to do your coding. The Dynasty Casino will pay you one red chip per hour until you complete the program.

The program will assist the cashier by calculating the value of chips based on their quantity. You observe that the general sequence of events at the cashier window is as follows:

The customer submits to the cashier all chips to cash out. Chips are counted and the total sum is calculated based on the following values:

- Black = $5
- Blue = $20
- Red = $50
- Green = $100

Display summary information to include the color, quantity, and value of each chip color. After all chip quantities are entered calculate and display the total number of all chips and total value of all chips. This summary web page will be printed out as a receipt for the customer.

Program Requirements:

Design and implement a computer program that will satisfy the described Imperial Pacific Casino requirements above.

1. Create a program design document that includes program specifications, algorithm design, and known test data. You may use any vector graphics program to design the flowchart, but my suggested programs yEd, PowerPoint, or LibreOffice Draw. Save your Program Design Document as an MS Word doc file named **`Casino-Design-YourName.doc`** The flow chart needs to be embedded in this document.
2. Do the implementation of the designed program by writing a JavaScript program embedded in the HTML document named **`Casino-YourName.html`**
   a. Prompt for quantity of each chip color
   b. Write the Output to the body of the HTML document using the document.write( ) JavaScript object method. Display summary information described above and also your name as the programmer.
3. Verify your design using the test data and correct your design as necessary, which may require you to change your design document. Program design and implementation is often an iterative process.