



## **CMIS 102: Introduction to Programming**

### **Assignment 3: Selection Structure Programs**

#### **Summary:**

This assignment has two different parts and is worth a total of 30 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 documents.

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 – 15 Points**

##### **Program Requirements:**

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

1. Create a flowchart for this program using yEd or a similar graphics program.
2. Create a program design document that includes flowchart and items described above.
3. Name an html file called **Temperature-YourName.html**
4. Prompt for which Conversion to perform F to C or C to F
5. Prompt for the temperature to convert
6. Perform the conversion using the appropriate mathematical formulas
7. Display both the input value and the results with units
8. Display your name as the programmer.
9. Verify your design using the test data and correct your design if necessary

#### **Part B: Pay Check Program – 15 Points**

Design and implement an employee's pay program that will prompt for the employee's name, social security number, wage in \$/hour, and total hours worked this week.

If the employee's hours exceed 40 hours they will be paid overtime at 1.5x normal pay rate for all hours after 40.

Withholding tax will be subtracted from the net pay at a rate of 15% for a paycheck less than \$1000 and at 25% for any pay that exceeds \$1000.

Display the employees name, social security number, hours worked, pay rate, gross pay, tax withheld, and net pay in results web page that can be printed. List your name in small text as the software creator at the bottom of the page. Name your file **Paycheck-YourName.html**

Write the Output to the body of the HTML document using the document.write( ) JavaScript object method. Display summary information described above and your name as programmer.