The University of Alabama in Huntsville
Electrical and Computer Engineering
Project 7 (40 points, perfect match +10% bonus)

Submit Your Solution Using Canvas by 10:00 PM, Friday October 19, 2019 (late submissions will be accepted on 10/19/19 from 10pm to 11:59pm)

Global variables are not allowed.

All variable declarations must be made in the body of a function making the variables local to that particular function only.
Below is an example showing where global variable declarations would occur – do not do this.

```
#include <iostream>
using namespace std;

// function prototypes go here
// any variable declared anywhere outside of main or other functions is a global variable.
// global variables are not allowed in this course

int main()
{ …
}
// all user defined function definitions go below main
```

Recursive function calls (a function calls itself) are not allowed for this project.

All user defined functions are to be called from main with one exception – the PrintMenu function may be called from within the function used to obtain an integer(see the functional decomposition below).

The PrintMenu function should not read in a value or return a value. All the printMenu function should do is print out the menu.

All user defined function definitions must go below main. Function prototypes must be used and should be put in the global area between using namespace std; and int main();

The functional decomposition/programming steps shown on the next page may help with this project.

For the main function using a <u>do-while loop</u>:

Obtain the random seed value and use srand(seed) to initialize the random number generator
Start a do while loop
    PrintMenu
    ObtainInteger
    Process integer for choices 1,2,3 and 4 using if-then-else-if or switch – else clause and default label handle the invalid integer case(integer value not equal to 1,2,3 or 4). For choices 1,2,3 a function call is made to the appropriate function for the calculation
End of do-while loop (while choice is not exit)
End of program

For the main function using a <u>while loop</u>:

Obtain the random seed value and use srand(seed) to initialize the random number generator
PrintMenu
ObtainInteger
Start a while loop (while choice is not exit)
    Process integer for choices 1,2,3 and 4 using if-then-else-if or switch – else clause and default label handle the invalid integer case(integer value not equal to 1,2,3 or 4). For choices 1,2,3 a function call is made to the appropriate function for the calculation
    PrintMenu
    ObtainInteger
End of while loop
End of program