This assignment will involve solving problems and writing code related to integer/floating point representation and arithmetic. For ease of submission, please submit a .zip file containing a single solution document for non-coding exercises (.txt, .doc, or .pdf) and individual source files for coding exercises (see naming conventions below). Your code and answers need to be documented to the point that the graders can understand your thought process. Full credit will not be awarded if sufficient work is not shown.

1. [10] B&O’H 2.57. Also write a main() method to test your procedures. Name your source file 2-57.c

2. [15] B&O’H 2.59. Also write a main() method to test your expression. Name your source file 2-59.c

3. [15] B&O’H 2.60. Also write a main() method to test your function. Name your source file 2-60.c

4. [15] B&O’H 2.71. Also write a main() method to test your function. Name your source file 2-71.c

5. [15] B&O’H 2.83. Also write a main() method to test your function. Use the following code for f2u:

```c
unsigned f2u(float x) {
    void *y = &x;
    return *(unsigned*)y;
}
```

Name your source file 2-83.c

6. [15] Convert the following hex values to decimal assuming that they are encoded as IEEE 754 single-precision floating-point numbers:

   a. (5) 0x40b80000
   b. (5) 0x41360000
   c. (5) 0xc1360000

Write your answers in your solutions document.
7. [15] Convert the following decimal numbers to a 16-bit format based on IEEE 754 single-precision floating point but with 6 exponent bits and 9 fraction bits (also 1 sign bit). Write your answers in your solutions document.

a. (5) 314.0

b. (5) 3.75

c. (5) -11.375

Write your answers in your solutions document.

Upload .zip file to Blackboard (see Course Documents section for submission link).