Fall '16 CIS 314 Assignment 7 – 100/100 points – Due Monday, 11/21, 11:59 PM

Please submit individual source files for coding exercises (see naming conventions below) and a single solution document for non-coding exercises (.txt or .pdf only). 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.

For problems 1-3 below, use the following code to aid in testing:

```
#define VECTOR_SIZE 8

typedef long long data_t;

typedef data_t *vec_ptr;


data_t * get_vec_start(vec_ptr v) {

      return v;

}

int vec_length(vec_ptr v) {

      return VECTOR_SIZE;

}
```

1. [30] B&O'H 5.15. Write your answers in your solutions document. Also write a main() function to test the *inner4* procedure.   Your main() method should also print the time elapsed during execution of the *inner4* function. Name your source file 5.15.c.

2. [30] B&O'H 5.16a. Write your answer for part A in your solutions document (you do not need to answer part B). Also write a modified version of *inner4* as specified by 5.16 and a main() function to test the modified *inner4* procedure. Your main() method should also print the time elapsed during execution of the *inner4* function. Name your source file 5.16.c.

3. [30] B&O'H 5.17a. Write your answer for part A in your solutions document (you do not need to answer part B). Also write a modified version of *inner4* as specified by 5.17 and a main() function to test the modified *inner4* procedure. Your main() method should also print the time elapsed during execution of the *inner4* function. Name your source file 5.17.c.

4. [10] Try running parts 1-3 above using various values for VECTOR_SIZE. What happens to the execution times of the three algorithms running on your machine as VECTOR_SIZE increases? Write your observations in your solutions document.

Zip the source files and solution document (if applicable), name the .zip file <Your Full Name>Assignment7.zip (e.g., EricWillsAssignment7.zip), and upload the .zip file to Canvas (see Assignments section for submission link).