CECS 130
Assignment 5
Assignment due on or before 9:00 p.m. Friday, July 14, 2017

In vector algebra we define a three dimensional vector v to be a on ordered triple

$$v = (x, y, z)$$

where x, y and z are real numbers. We also define vector addition to be component wise this means that :

If $v = (s, t, u)$
and $w = (x, y, z)$
then $v + w = (s+x, t+y, u+z)$.

1. Create a new vector class in C++ that has a constructor that initializes its instances to (0, 0, 0).
2. Add a set Components function that will mutate (modify) the vector instance and set its components to the three parameters x, y, z passes to the function respectively.
3. Add a display function that displays the vector as triple (x, y, z).
4. Overload the + symbol to become vector addition.
5. Write a function called length() that returns the length of the vector as give by the formula:

   $$length(v) = \sqrt{s^2 + t^2 + u^2}$$

   meaning that the length is the square root of the sum of the components squared
6. Overload the rational == to yield true if v and w has the same length.
7. Write a main function that creates two instances and correctly add them display all three vectors and the length of the each vector.

My Complex class should serve as a good guideline.

<u>A note about assignments and reports:</u>

Your report must conform to the following rules:

1. All reports have to be submitted as a **PDF** report that contains:
   1.1. Title page with your name, assignment number and the day you are actually submitting this report (Not the assignment due date)
   1.2. A comprehensive set of snapshots showing the inputs submitted and outputs obtained in the case of a successful output or a failure.
2. A text file that contains all source code, please concatenate all source code in one text file.
3. Make sure that you include as a comment at the top of your file your name and section:

   As an example:

```
/*************************/
/* John Q. Public        */
/* CECS 130-11           */
/* Assignment 35         */
/*************************/
```

   Failure to do this will cost you points.

4. Please zip both the PDF document with the source code and submit one zip file.
5. Please do not submit your eclipse or bloodshed project or any IDE project that you may be using. I will be compiling and testing your source code from the text file in part 2 above to test running your applications and to verify that they run.
6. Remember that you must only access BlackBoard using section 130-01