CS 161 - Group 8, Assignment 6 (group part)

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Which program did your group decide on?

As a group we chose Jason DiMedio's assignment. First and foremost, the program compiled and ran successfully, which was a requirement. However, there were other factors that influenced our choice. For the most part, the programs all functioned well, but we all agreed that Jason's program had the best comments out of the group, making the code easy to understand. For example, every member function and class had great descriptions and definitions of how it works. Jason also did a good job of solving the problems required by the assignment efficiently. This helped keep the number of lines needed to a minimum, adding to the program's clarity.

What advantages do you think that program has over the others? (be detailed)

The importance of clarity in coding was apparent as soon as we were asked to read each others' code. Even knowing the requirements and purpose of the two classes ahead of time, we found that it is generally difficult to follow code written by another programmer.

The main advantage of this program was that it was self documented in greater detail than the others. The thorough commenting enabled us to see the flow of control throughout the program. Also, algorithms were displayed in a efficient and logical order that not only was well explained with comments, but also succinct. When looking specifically at the advantages of this program, we noticed that the classes and functions were well titled and described as to how they worked and what values, variables, and/or equations were used to make them work. Debugging could be done on this program with relative ease due to the previously mentioned visibility of the flow of control.

Many of these benefits were also observed throughout each member's program. These included well formatted code (especially with regard to spacing and indentation) that was easy to follow along, and source code that could easily be adjusted for maintainability and expanded if needed.

These advantages are important in a collaborative coding environment where classes can be designed by programmers that are very distant from the project at hand. In cases like these, where classes are "portable," being able to understand the code is almost as important as ensuring that the code functions.

What improvements do you think could be made to that program? (be detailed)

The source code was well written, but there are always ways to manipulate the source code to reduce the processor instruction calls and to increase its efficiency. For example, the default constructor for the Point class could have immediately assigned zero to each member variable, instead of calling two member methods to assign zero to each member variable. In a more complicated program, it might have been necessary to pass Point objects as arguments by constant reference (in the set functions of the LineSegment class, for example), similar to the way Points were passed into the distanceTo function of the Point class.

Also, the LineSegment class did not have a default constructor at all, only the constructor that takes two Points as arguments and assigns them to the end points of the line segment. A default constructor could have taken no arguments and initialized both of the Points at (0,0). Although this wasn't called for in the assignment, it would have made the class more versatile. In fact, Sagar's version of the assignment included this default constructor.