**2.3.2 Software Lines of Code Estimation**

1. Overview

This section describes the methodology used to calculate the estimated number of hours of the project using lines of code, based on a wider base of knowledge gained from class lectures and working on the SPMP up until this point.

1. Estimation Methodology
   1. Lines of Code per Function (based on 1.3)
      1. An estimate for the lines of code for each piece of functionality in 1.3 is determined based on previous experience with computer science curriculum projects up until this point.
   2. Total Lines of Code
      1. The estimates generated in the Lines of Code per Function estimate above are summed up into a single number.
      2. Formula

* + 1. Where denotes the number of pieces of functionality and denotes the lines of code per piece of functionality.
  1. Lines of Code per Hour
     1. Each team member reviewed previous projects they had completed. They counted lines of code and divided by the estimated hours spent to come up with an average lines of code per hour.
     2. Criteria
        1. Projects Reviewed
           1. Any project-type assignments completed in any college programming courses from CIS200 (or equivalent) and higher-level courses.
        2. Programming Languages Considered
           1. C++
        3. Exclusions
           1. Assignments completed prior to CIS200

Team Feynman felt these assignments were not a representative measurement of lines of code, as in CIS200 and more advanced classes, a much deeper understanding of code and programming was obtained.

* + - * 1. Non-project type assignments, such as labs

Team Feynman felt these were a less representative sample for the average, as the lines of code tended to be much lower and the problems were often of trivial complexity.

* + 1. Formula

Where denotes the number of projects, denotes the lines of code for a specific project, denotes the estimated amount of time spent writing the code (by the team member's own recollection) and denotes an instance of a specific project.

* 1. Team Average Lines of Code per Hour
     1. Each team member's result from Lines of Code per Hour is summed up into a single number, and the number is divided by the number of team members, to get the average lines of code per person per hour.
     2. Formula

Where denotes the number of team members and denotes the lines of code per hour for team member .

* 1. Final Estimate
     1. The Total Lines of Code is divided by the Team Average Lines of Code per Hour, and this is the estimated number of hours based on lines of code.
     2. Formula

Where denotes the Total Average Lines of Code per Hour and denotes the Team Lines of Code per Hour.