IngleNook Sidings

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Abstract

An implementation of Client/Server communication using the IngleNook Sidings problem. We look at how to connect create connections between a server and client, passing information between them. Includes file handling and algorithmetic work. Data conversion concepts Object oriented work.

1 Introduction

Problem Analysis We are introduced with the problem of creating a program which Allows an operator to manipulate wagons in a railway yard. This is based on the inglenook sidings problem. We are asked to create Signal Box and Sidings Logistics implementations that connect and communicate with each other through a TCP connection and custom protocol.

Requirements We are required to implement a system capable of reading in text files, containing information in the form of strings and integers in one system and in the other we are asked to handle any errors based on commands recieved from the user.The system is written in C and C++ respectively.

Program Execution The program execution is explained in the screen cast and readme file.

Functionality Upon compiling the programs you are presented with a server that keeps a log of information based on the communication between the server and client. I implemented this because I felt that it would be neccessary to visually see the server performing. The C++ side also displays messages and allows user input. The Client connects to the server automatically because I felt as though the user may not be as technical as the developer and may struggle in making a connection. The program reads editable text files but specifies to the user in the README file that the server is very rigid and not flexible. Because I was unable to adjust my programs for additional functionality I was forced to specify what a user should not do.

some commands can cause the program to break, such as typing in 3 letters or 3 strings. My code is incapable of understanding these commands.

2 Evaluation

Based on the work produced and after a thorough evaluation I believe I have produced a very steady piece of work. There is definatley alot of thought and effort put in to this project but, bottom line is that it fulfills most of the expected criteria and performs acceptably. There are many things I could have possibly changed such as certain algorithms used in C++ and C which are maybe too robust or too convoluted. During the process of creating this software, I encountered alot of compiler issues and technical issues with C and C++ in both netbeans and the terminal. I often had difficulties in casting variables from one type to another and sometimes used the wrong type of algorithm or data types for specific tasks. Though I had many issues, I am a very confident in this solution. I still believe the program is not finished and will definatley look at it once again in future to try and make improvements.