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Project 3 Report

1. Some obstacles that I overcame were finding the errors in the code. When I went through the spec and thought I accounted for every error, I found that my code didn’t provide the right error message for V86F since it was failing to perform the command before checking for any errors in the syntax. I fixed this by including another if statement in my code. Another error I found was when I was testing with the tester that was provided by Professor Smallberg. My code didn’t pass one of the tests and I couldn’t figure out why because I didn’t really understand what the tester was saying. After trying some things out though, I figured out that my code wasn’t failing when the character after H or V was not a digit. Instead, it was printing out one character and stopping. I fixed this with another if statement that returned if it was not a digit.
2. Pseudocode

performCommands function

repeatedly, through every character in the command string:

if there isn’t an appropriate character at the end of the command string

return

repeatedly, through every character in the command string:

if the next command is to clear the grid

reset all lines and settings for grid

if the next command is to change mode and character

set mode to foreground or background

set character to one given in command string if character is printable

if the next command is to draw a line

translates given string into an integer that can be used

calls function to plot the line

plotLine function

if parameters have values that are appropriate and the line falls within the grid

plots horizontal or vertical line

otherwise, returns false

1. Test Cases

|  |  |
| --- | --- |
| Command String | Reason |
| “” | checks that the program terminates if the string is empty |
| “h12f\*v10b?v-5ch-7” | checks to make sure each command runs normally |
| “h12v7h-5h23” | checks that the program terminates if the line falls outside the grid |
| “h15ch15” | checks that the current position is reset to (1,1) when calling C |
| “h?” | checks that the program terminates if the number after h is not a digit |
| “v-?” | checks that the program terminates if there is a negative sign but the number after isn’t a digit |
| “h44b” | checks that the program gives a syntax error even if the program cannot plot a command |
| “H5c7” | checks that the report gives a syntax error if the next command does not start with h, v, f, b, or c |
| “h86?” | My program does not deal with this command correctly. Although the program does not run with this command, it says that it cannot perform the command instead of stating that there is a syntax error at position 4. |