Vision & Scope Document

Calculator Project

10/11/2017

Texas Southern University

Lawrence Thomas

Introduction:

The goal of this collaboration is to design and develop a calculator program. The first focus of the project is to design a basic calculator then eventually upgrading it to the

Requirements:

* Functional
  + Calculate basic arithmetic
    - Add variables specified by the user.
    - Subtract variables specified by the user.
    - Multiply variables specified by the user.
    - Divide variables specified by the user.
  + Calculate the power of a variable
  + Calculate square root of a variable
  + Change the sign from + to – of a variable and vice versa
  + Allow user to enter combined variables using the symbols (0-9) ex. 90, 50, 10000, 17, etc.
  + Calculate fractions and decimals
* Non-Functional
  + GUI that shows the calculations the user entered as well as the resulting variable
  + User will enter expression and values of variables
  + After the user finish one calculation the program should stay running until the user types off or press the off button
  + If the user enters a variable like string the program should return an error
  + The decimal place should only go out to 5 digits such as 1.00000

Use Cases:

* Addition (+), subtraction (-), multiplication (\*), and division(/) are the three main functions of the calculator
* Could also use constants (c) variables that are setup by the user
* Program should also be able to do power of a variable specified by the user.

Design:

* Modules
  + Parser
    - C++
  + Calculation Engine
    - Calculator should be in the format (x+1; x= 1), (x+y+2; x =1, y = 2)
  + Error Management
    - Program should inform the user that the values that they entered are not accepted and then allow the user to try again.
* UI
* Division of task
  + Time (phases)
  + Personnel (division of data)
    - Since I am the only member on this project all of the division of work shall be my responsibility.
* Prototype
  + Project alpha
    - This version of the project is able to do basic arithmetic for two numbers.
  + Project Beta
    - This version of the project is able to do basic arithmetic for three numbers.
  + Final build
    - This version of the project is able to calculate basic arithmetic in the format (x + y; x =1, y =2).