Symbolic Calculator Proposal

**Project Statement:**

Design symbolic calculator that accepts variables with assigned values, and algebraic equations. I. e a^2 + log(b)

**Stakeholders:**

Development team, and Professor.

**Users:**

Students, Professors, Accountants, e.t.c.

**Risks:**

1. Delay in project completion due to time mismanagement.

2. Stagnation of project status due to steep learning curve.

**Assumptions:**

Users have trouble running the programming application. Will it be “user friendly” Think about the users’ ability. Time assigned to each tasks, goal and experience.

**Vision Statement:**

The program application should be user friendly and easily understanding. The users should be able to use the application without any confusion.

**List of Features:**

Computing basic calculations

Recognize variable assignments

Computation of algebraic equations

**Sample Use Cases:**

(x + y; x=1, y=1) = 2

(x\*y; x=3, y=4) = 12

**Requirements**

**Functional**

Perform simple arithmetic equations e.g +, -, \*, /(division), %(remainder)

**Non-Functional**

Ease of Use: It’s easy to use and does not require knowledge of complex arithmetic

Cross-functionality & portability: To be coded in Java which enables software to be run across multiple devices such as desktops, mobile phones, and embedded systems.

**Design**

**Modules:**

Parser

Utilize an existing library that can enable parsing in the programming language that we use.

Calculation Engine:

Build the basic structure of a calculation engine using Java

Enables the user to enter their formulas or expressions

**Error Management**

Handles arithmetic errors by throwing arithmetic exceptions and handling them appropriately.

**UI**

Default UI will feature basic arithmetic functions

An alternate button will enable access to more scientific functions