

## Design Document for Vector Calculator

### Problem:

Calculating multiple vectors in physics can be a somewhat annoying and tedious process.

### Solution:

Using Python we plan to create an algorithm that accepts the input of multiple 2d vectors and can process that data either with addition or dot product (multiplication).

### Execution of Solution:

The Python algorithm will be functional through a chat-style interface, where the user will be presented with options that can then be input by typing in the text box. The user will first be asked about what sort of calculation they want to be performed. Then they will be asked to input all vector data. After storing the input data the algorithm will use a variety of equations and calculations to modify the input data and to either add or multiply (depending on what was previously chosen). The program will then output said data in a notation suitable for the requested calculation, after this the program will end. The problem and solution were created using the bottom-up solution as the idea for a vector calculator was the start.

### Flow Chart:

