**Criterion A: Planning**

**Defining the Problem**

I want to make a calculator that can perform various functions on matrices, mostly 3 by 3, including addition and multiplication between two, diagonalization, and taking the determinant.

**Rationale for the Proposed Solution**

I’ve decided to create a stand alone application for this application, because it is the easiest way to implement a program that is user friendly to the high school audience that I am aiming for and compatible on the range of devices a high school student would have access to.

I will be using java to create this application because java is available across multiple platforms and I am required to by IB.

**Success Criteria (in order of importance)**

1. The application will be able to do simple 3x3 matrix functions- addition multiplication determinant and print the answer
2. The application will be able to diagonalize a 3x3 matrix and print out eigenvalues and eigenvectors
3. The application will be capable of working with matrices of varying sizes.
4. The application will be able to find the inverse of a given matrix.