# Report:

I created a matrix computer, which performs some basic operations like multiply, add and subtract. I did the coding in JAVA and made the unit test cases for this assignment using JUnit. The code takes inputs from the file. It reads it line by line. When it reads a line, it performs tokenization on it to break it down into components. The semicolon is used in the text file to dentote the no of rows and the spaces are used to denote the number of columns of a particular matrix. i.e.

4 5 6; 9 8 7

1 1 2; 8 2 5

Now how it works is that it tokenizes the file and adds it to a 2 Dimensional array. I hard coded the main array which is used to read input from files to a large number i.e. 100 by 100. After the 2D array is constructed, I put a for loop to put the particular matrix into a temporary array. I also crated a list to store multiple matrices made of 2D arrays. When an entire line is read i.e. a matrix is read. It is then added to a list. This list contains matrices which were read from the file and further functions of the program use this list to get matrices and perform computations on them. Also the test cases that are implemented are adding 3 matrices and multiplying matrices.

For computation in the test cases, the matrix is extracted out of the list using the get command and then a FOR loop is used to put the extracted integers into a 2D array. Then from there the multiply subtract and add functions are called which can then be performed easily and after computation a resulting matrix is returned.

Github link: https://github.com/asadqureshee/matrixcomputer.git