Assignment 2 (Computer Architecture)

Numbers that were taken as inputs are stored at X. Using a loop these were copied to address Y. The copy of numbers at Y are sorted using bubble sort. The original numbers which were taken as input are not altered during this process.

We can execute the file using the command:- "**java -jar Mars4_5.jar nc mips1.asm**"

Each input should be given in a different line and should be given only in the following format:-

>> <number of integers = N>
>> <address X>
>> <address Y>
>> integer_1
>> integer_2
>> ...
>> integer_N

Java implementation of Bubble sort is given below. In this assignment this java code has been implemented in MIPS assembly language.

```
// This java code has been taken from GeeksForGeeks.
// https://www.geeksforgeeks.org/bubble-sort/
// Java program for implementation of Bubble Sort
void bubbleSort(int arr[])
   {
      int n = arr.length;
      for (int i = 0; i < n-1; i++)
         for (int j = 0; j < n-i-1; j++)
            if (arr[j] > arr[j+1])
            {
               // swap arr[j+1] and arr[i]
               int temp = arr[j];
               arr[j] = arr[j+1];
               arr[j+1] = temp;
            }
   }
```

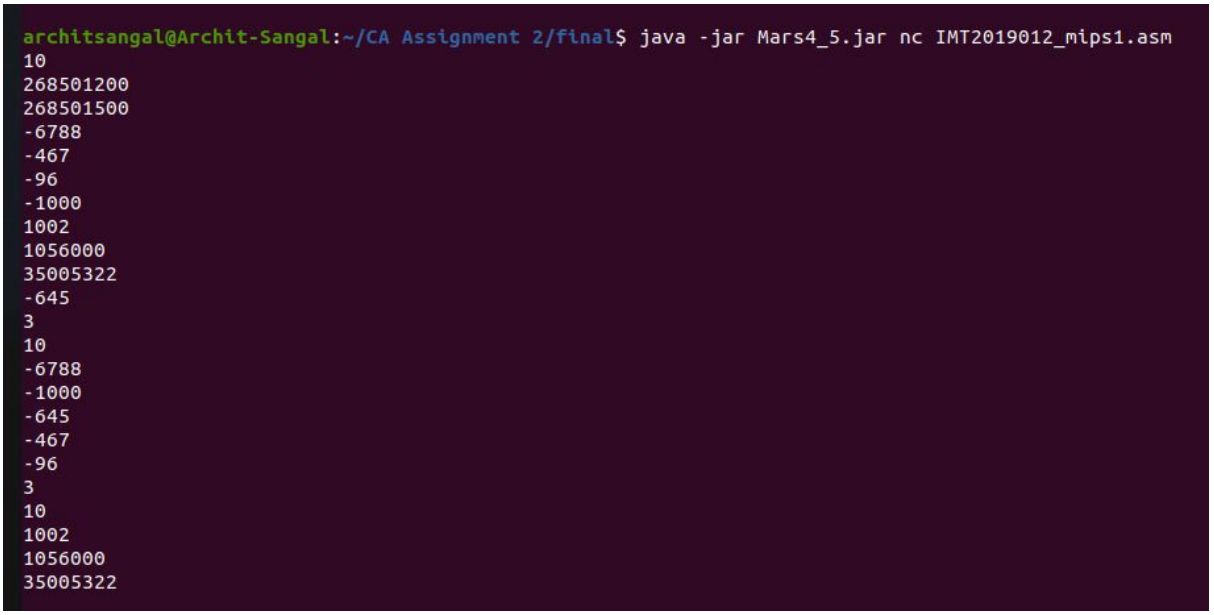
For the input-

```
10          // No.of numbers to be sorted
268501200 // address where the input elements should be stored
268501500 // address where the sorted elements should be stored
-6788       // number 1
-467        // number 2
-96         // number 3
-1000       // number 4
1002        // number 5
1056000     // number 6
35005322    // number 7
-645        // number 8
3           // number 9
10          // number 10
```

Output should be-

```
-6788
-1000
-645
-467
-96
3
10
1002
1056000
35005322
```

Screenshot for the same is given below-



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