

Exercise 1

Subject: **Bubble sorting**

Store a numeric list of data in the data memory. The size of each datum is one **word**. The address of the list should be stored in \$a0 and its length in \$a1.

Allow for the data list to be signed.

Write a program that sorts the list of data by bubble sort. Then print the now sorted list to the screen.

Reminder:

Bubble Sort is an algorithm that scans the data list and compares each pair of data. If the value given on the left is greater than the value of the right, the algorithm will switch them. In each scan of the array the largest number "bubbles" to the top of the list.

Exercise 2 **Detecting Progressions**

Create a numeric list of data where each data is one **byte**. The address of the list should be stored in \$a0 and its length should be stored in register \$a1.

Allow for the data list to be signed.

Write a program that scans the data list and checks whether the data is an arithmetic progression or a geometric progression or both or neither (i.e. the list does not constitute a progression at all).

The program should also print a message about the scan conclusion.

It should print the initial value of the progression and for an arithmetic progression it should print "d = " followed by the difference between each element. If the list is a geometric progression, it should print "q = " followed by the quotient.

If the list does not constitute a progression at all, print "Not a progression".