# Lab 12 (subroutines)

## The problem

Create an assembly program that can read in 2 integers from the user and store the maximum of the 2 into the label ANSWER.

## MAX

First implement the MAX subroutine:
- takes 2 arguments A and B
- returns the maximum of A and B

Make sure you are following the calling convention, there are lots of comments to help you along the way but make sure to refer to the REFERENCE_SHEET.pdf on T-Square as well.

When you are done with this section you can verify that you have done it correctly by running the tests in max_test.xml.

## Debugging

"Simulate Subroutine Call" tool.

To use this go to debug → Simulate Subroutine Call, choose your subroutine (MAX) and your parameters (separated by commas). This will set up the stack and call the subroutine correctly allowing you to walk through your code.

Get a second memory view with View → New View (or ctrl+v) and use it to inspect memory with ctrl+g to go to a specific memory address.

## GET_MAX

Now that you have the MAX subroutine we want to actually get 2 numbers from the user and return the max. Notice that we have already implemented a function for you called GET_INT which does all the IO for you.

GET_INT will try to read in an integer until it discovers a non-digit character (comma, letter, newline …) and then return the parsed integer on the stack.

General pseudocode for this would be:

A = GET_INT()
B = GET_INT()
C = MAX(A,B)

RETURN C

When you are done you can verify the correctness of your code with the tests in get_max_test.xml.