# BAN410/510 Individual Lab 9

Examine the attached program. Rewrite the program so that the appropriate parameters are passed to subroutines within which the mathematical calculations take place. You must use interfaces with your subroutines, you can only use formal parameters inside your subroutines, and the names of your formal parameters must be different from the names of the actual parameters already being used in the program. No write statements are allowed inside your subroutines. After being rewritten, it should look and function exactly the same as the original from the user's perspective. When complete, submit a text file of your completed program in Canvas.

```
*-------------- parameters ----------------------------------------*

PARAMETERS par_num1(2) TYPE p.
PARAMETERS par_num2(2) TYPE p.
PARAMETERS par_code(1) TYPE c.

*-------------- variables -----------------------------------------*

DATA calc_result(6) TYPE p decimals 2.

*-------------- constants -----------------------------------------*

CONSTANTS con_num1(12) TYPE c VALUE 'Number One: '.
CONSTANTS con_num2(12) TYPE c VALUE 'Number Two: '.

CONSTANTS con_result(8) TYPE c VALUE 'Result: '.

CONSTANTS con_add(1) TYPE c VALUE 'A'.
CONSTANTS con_sub(1) TYPE c VALUE 'S'.
CONSTANTS con_mult(1) TYPE c VALUE 'M'.
CONSTANTS con_div(1) TYPE c VALUE 'D'.

CONSTANTS con_error(17) TYPE c VALUE 'Invalid Operation'.

* ------------- main program ---------------------------------------*

* performing the calculation using a case

CASE par_code.

* perform the add

   WHEN con_add.
       COMPUTE calc_result = par_num1 + par_num2.

       FORMAT COLOR 1 INVERSE.

          WRITE: /, con_num1, par_num1.
          WRITE: /, con_num2, par_num2.
          WRITE: /, con_result, calc_result.

       FORMAT COLOR OFF INVERSE OFF.
```

```
* perform the subtract

   WHEN con_sub.
       COMPUTE calc_result = par_num1 - par_num2.

       FORMAT COLOR 2 INVERSE.

          WRITE: /, con_num1, par_num1.
          WRITE: /, con_num2, par_num2.
          WRITE: /, con_result, calc_result.

       FORMAT COLOR OFF INVERSE OFF.

* perform the multiply

   WHEN con_mult.
       COMPUTE calc_result = par_num1 * par_num2.
       FORMAT COLOR 3 INVERSE.

          WRITE: /, con_num1, par_num1.
          WRITE: /, con_num2, par_num2.
          WRITE: /, con_result, calc_result.

       FORMAT COLOR OFF INVERSE OFF.

* perform the divide

   WHEN con_div.
       COMPUTE calc_result = par_num1 / par_num2.

       FORMAT COLOR 4 INVERSE.

         WRITE: /, con_num1, par_num1.
         WRITE: /, con_num2, par_num2.
         WRITE: /, con_result, calc_result.

       FORMAT COLOR OFF INVERSE OFF.

* invalid operation code

   WHEN OTHERS.
       WRITE / con_error.
       FORMAT COLOR 5 INVERSE.

          WRITE: /, con_num1, par_num1.
          WRITE: /, con_num2, par_num2.
          WRITE: /, con_result, calc_result.

        FORMAT COLOR OFF INVERSE OFF.

ENDCASE.

* end of program
```