# **Mainframe Development I - 2018 - Lab 9**

You can download the starter code from DC Connect, it contains everything you will need to get started. You will only need to create a new project and modify as specified below.

This lab has been designed to focus upon the use of arrays, as such, you will find that **MOST** of the provided code is working. There are however many omissions and a few bugs. Attempt to fix these first before filling in the parts that deal with arrays, calculations and counts.

## Description

This program is to report on the activity of our call centre operators. We have many different operators, some full-time, some part-time or contract. Each month we calculate the number of calls that each operator has answered and produce the data file your program will use, which shows data from the past 6 month. It is formatted as follows:

Op # Op. Name July August Sept. Oct. Nov. Dec.

X(3) X(12) 9(3) for each month

A12 JOHN 100 129 88 92 111 74

A14 ANNE 92 114 112 77 121 80

B10 ADAM 0 0 0 0 0 0

B12 JOANNE 104 129 88 92 0 0

Note that the input file actually contains more records than shown here.

## General Notes

* You MUST use OCCURS on record descriptors for the monthly volume values as specified below. (July – December)
* The program is to produce the report shown on the last page of this document.
* Textbook Reference: Murach’s Structured Cobol – Chapter 11

### Processing Rules

1. Print your name/lab at the top of the page in the usual manner.   
   No line counting is required, double space each item line.
2. Use an OCCURS CLAUSE on the input record and a second occurs on the detail line to access the sales values and to print them out.
3. Use PERFORM… VARYING as outlined in class and in the textbook reference above to process the monthly volume values.
   1. Add the 6 values in the array to calculate and print out the operator volume total for this 6 month period.
   2. Also calculate and print the operator monthly average calls as shown.   
      1. For any month when the value is zero, that month is **not** to be included in the average calculation. See Joanne #B12 in the data above where we would divide by 4, not by 6.
      2. Use the REMAINDER option on the DIVIDE statement to calculate the remainder (rather that a percentage). Print a remainder of zero as 0.
      3. If a record has 0 for all 6 values the average cannot be calculated because it would be division by zero. The program is to print the word ZERO (use the REDEFINED variable for this) for the average and leave the remainder blank. See Adam #B10 in the data file and output.
4. Also count and print out, with a short title, the number of records with no calls (zero for all 6 months). In the sample data this answer would be 1 (Adam, #B10 has all zeroes).
5. Also count and print out the total number of calls for all operators and all months.

YOUR NAME HERE LAB 9

CALL CENTRE VOLUMES FOR JULY - DECEMBER

OPERATOR OPERATOR JUL AUG SEP OCT NOV DEC TOTAL AVG REM

# NAME

A12 JOHN 100 129 88 92 111 74 594 99 0

A14 ANNE 92 114 112 77 121 80 596 99 2

B10 ADAM 0 0 0 0 0 0 0 ZERO

B12 JOANNE 104 129 88 92 0 0 413 103 1

----- more lines of output here -----

NUMBER OF OPERATORS WITH NO CALLS: Z9

OVERALL TOTAL CALLS: ZZZ99