

14. Arithmetic using ADD, SUBTRACT, MULTIPLY and DIVIDE

Another method of doing arithmetic in COBOL is to use the commands: ADD, SUBTRACT, DIVIDE and MULTIPLY.

1. ADD

e.g. (1) ADD OVERTIME-PAY TO TOTAL-PAY.

OVERTIME-PAY is added to whatever number is already in TOTAL-PAY.

e.g. (2) ADD OVERTIME-PAY BASIC-PAY GIVING TOTAL-PAY.

The values of OVERTIME-PAY and BASIC-PAY are added and the result is stored in TOTAL-PAY without changing other items.

NOTE - THE FIRST VERSION USES 'TO' - THE SECOND DOES NOT.

2. SUBTRACT

e.g. (1) SUBTRACT TAX FROM TOTAL-PAY.

TAX is deducted from whatever value is stored in TOTAL-PAY.

e.g. (2) SUBTRACT TAX FROM GROSS-PAY GIVING NET-PAY.

TAX is taken from GROSS-PAY and the answer stored in NET-PAY. (Note - the value of GROSS-PAY is not altered).

3. MULTIPLY

e.g. (1) MULTIPLY NUMBER1 BY NUMBER2.

The result will overwrite the contents of NUMBER2.

e.g. (2) MULTIPLY HOURLY-RATE BY 2 GIVING OVERTIME-RATE.

The result is stored in OVERTIME-RATE without changing other items.

4. DIVIDE

e.g. (1) DIVIDE NUMBER1 INTO NUMBER2.

The result overwrites NUMBER2.

e.g. (2) DIVIDE NUMBER-OF-STAFF INTO TOTAL-BONUS
GIVING STAFF-BONUS

e.g. (3) DIVIDE TOTAL-BONUS BY NUMBER-OF-STAFF
GIVING STAFF-BONUS

The result is placed in STAFF-BONUS without change to the other data-items.

DIVIDE ... REMAINDER.

The computer can also be asked to give a whole number and a remainder as the answer to a division if appropriate.

e.g. (1) DIVIDE NO-OF-CHILDREN INTO NO-OF SWEETS
GIVING NO-OF-SWEETS-PER-CHILD
REMAINDER SWEETS-LEFT-OVER.

e.g. (2) DIVIDE NO-OF-SWEETS BY NO-OF-CHILDREN
GIVING NO-OF-SWEETS-PER-CHILD
REMAINDER SWEETS LEFT-OVER.

Exercise

Repeat the questions in Lesson 13 using the commands ADD, SUBTRACT, MULTIPLY and DIVIDE instead of COMPUTE.