
Description

Create a new program called “**A3-SalesComm**”.

This program will read records from a data file named “**A3.dat**”; perform calculations and formatting based on the values of fields in the data records and write a formatted report output to a file named “**A3-SalesComm.out**”.

This assignment requires you to use IF/ELSE and PERFORM statements for processing the input data records.

Input File

Download the required data file (**A3.dat**) from DC Connect.

This sample data does not exactly match the data in the file provided.

The following is intended to provide the column layout of the file:

NO.	NAME	SALES	MIN. COMM.	MAX. COMM.	COMM. %
COL. 1-3	4-11	12-17	18-23	24-29	30-32
110	Jim	444000	300000	600000	105
127	Beth	056000	500000	809999	205
531	Gerry	007999	000600	000700	55
739	Cindy	003751	004400	006600	195

Specification

- 1) A cobol starter file “**A3-SalesComm-starter.cbl**” has been provided. This is not a complete program but has some of the basics that might be useful for this assignment. It is your choice whether to use it all, part of it, or ignore it altogether and write your own code.

- 2) There should be paragraphs for the topics listed below. You can add more paragraphs and you can use your own names for the paragraphs.
 - a) Main
 - b) Process-Pages
 - c) Print-Headings
 - d) Process-Lines
 - e) Bonus-Greater-than
 - f) Bonus-Less-than
 - g) Bonus-Under-Minimum
 - h) Bonus-Over-Maximum
 - i) Print-Totals

- 3) ALL paragraphs should have a number as a prefix # at the beginning (e.g. 100-HEADINGS), and that number must be in ascending sequence as you go through the Procedure Division.

- 4) You must produce a structure chart to document your program.

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- 5) Use WORKING-STORAGE variables for ALL output.
 - a) Use 77 level variables in WORKING-STORAGE to contain any values or text strings needed in any IF statements or calculations. These serve as named constants.
 - b) Do not use 01 level variables for this purpose.
 - c) In the Procedure Division use the named constants you created in the Working-Storage section in place of the actual values, or text strings.
 - d) There should be NO constant numbers or constant literals in the procedure division.

 - 6) In calculations you may use any of the following statements:
 - COMPUTE
 - ADD
 - SUBTRACT
 - MULTIPLY
 - DIVIDE

 - 7) The program should process the data from the input file provided and calculate each salesperson's earned and paid commission.

 - 8) Calculations are to be made as accurately as possible and the salesperson's final earned commission is rounded to the nearest dollar.

 - 9) All printed values are to the nearest dollar (so use ROUNDED wisely). For each salesperson print out the following:
 - a) Salesperson's No.
 - b) Salesperson's Name
 - c) Minimum Commission
 - d) Maximum Commission
 - e) Commission Rate with a % sign (When input data is 105 output as 10.5%. This is accomplished by printing % as a literal.)
 - f) Earned Commission
 - g) Paid Commission

10) Use a combination of nested IF/ELSE and PERFORMs for the commission calculations:

a) Earned Commission Calculation:

- If the Sales is \leq \$300,000 then Earned = Sales * Rate
- If the Sales is $>$ \$300,000 then Earned = Sales * Rate + a bonus of 15.25% of the amount over \$300,000

For example:

- I. SAMMY gets 10.5% of his \$55,000 in sales = earned of \$5,775
- II. BETH gets 20.5% of her \$555,000 in sales = earned of \$113,775 + 15.25% of (555,000 – 300,000) = 113,775.00 + 38,887.50 = \$152,662.50 = \$152,663 Rounded

b) Paid Commission Calculation:

- If the sales are more than \$300,000 then PAID = EARNED unless Earned is $>$ MAX.
- If Earned is $>$ Max then PAID = MAX.

Note: they CAN earn less than their minimum and no check is made on it. Count and print out with a title the number of salespersons in the sales over \$300,000 category who earn more than their maximum. Check HARVEY.

- If Sales \leq 300000 then PAID = EARNED unless Earned is $<$ MIN.
- If Earned is $<$ Min then PAID = MIN.

Note: They CAN earn more than their maximum and no check is made on it. Count and print out with a title the number of salespersons in the no bonus category who earn less than their minimum. Check GEORGE.

11) For the report example shown on the last page:

a) Report Header lines consist of:

- blank line
- your name
- blank line

b) Page Header lines consist of:

- a report title (SALES COMMISSION REPORT)
- blank line
- column headings
- underlines using hyphens for the column headings
- blank line

c) Detail lines consist of:

- a detail line with the fields listed above
- blank line

d) Total lines consist of:

- a total line with a literal "Totals" and totals for Earned and Paid Commission
- a blank line

e) Summary lines consist of:

- a summary line with a literal for each summary calculation and the calculated number (see sample report)
- blank lines between the various groups (see sample report)

12) You **DO NOT** have to match the number of spaces in the column headings.

13) You **DO** need to have column headings align with the detail line items.

14) Print **10** detail lines per page.

15) Only the first page should have the report header lines.

The report header lines should not appear on the other pages.

- 16) Each page should have page header lines before the detail lines.
- 17) The program is to accumulate and print out the total commission earned and paid to all salespersons.
- 18) For sales staff who get the bonus (> 300,000) print out the remarks

“BONUS EARNED” and for those with no bonus print
“BONUS NOT EARNED.”

Print this remark to the right of the last data field (PAID) with an appropriate column heading.

- 19) Calculate and print each of the following with a short title.
The percentage should have 2 decimal places and the % sign
(e.g. 75.56%)
 - a) The number of salespersons who get the BONUS (> 300000)
 - b) The number of salespersons who do not get the BONUS
(≤ 300000)
 - c) The number of salespersons
 - d) The number of salespersons who are paid the amount they earned
 - e) The percentage of salespersons who are paid the amount they earned
- 20) Print your name/date/time report heading and column headings on each page. You will need to use the “after page” option on your WRITE statement as outlined in class.

21) Print a total at the end of the program indicating the percentage of salespeople above and below \$300,000 in sales. The percentage should have 2 decimal places and the % sign (e.g. 75.56%).

For example, if there were a total of 10 salespeople with 6 above 300,000 and 4 below, the percentages would be:

Percent > 300,000: 60.00%

Percent <= 300,000: 40.00%

Place the percentages below the others on the output.

They should sum to exactly 100%.

You must calculate these 2 values independently of one another.

You will need two separate counters for over 300,000, & <= 300,000.

22) There should be one blank line after Your Name line, and after Sales Commission Report line.

23) There should be two blank lines after each group of summary lines. (see sample format)

NOTES

1) In order to understand the logic of this program, I suggest you manually calculate the answers shown below.

2) When you do get output, I suggest that you check your calculations for salesman *PHIL*.

3) EDITING as follows:

a. Use Z and , for all except paid.

b. Use \$, and * (asterisk) for paid.

c. Use a floating \$ sign and , for the totals.

SALES COMMISSION REPORT

NO.	NAME	SALES	MIN	MAX	RATE	EARNED	PAID	BONUS/NO BONUS
111	JIM	444,000	50,000	100,000	10.5%	68,580	***68,580	BONUS EARNED
---lines not shown---								
523	PHIL	205,002	999	2,000	19.5%	39,975	***39,975	BONUS NOT EARNED

SALES COMMISSION REPORT

NO.	NAME	SALES	MIN	MAX	RATE	EARNED	PAID	BONUS/NO BONUS
600	WILLIAM	99,003	75	950	8.5%	8,415	****8,415	BONUS NOT EARNED
----lines not shown----								
818	BOB	2	10	900	49.5%	1	*****10	BONUS NOT EARNED

SALES COMMISSION REPORT

NO.	NAME	SALES	MIN	MAX	RATE	EARNED	PAID	BONUS/NO BONUS
852	FRANKIE	99,999	1	1,000	1.5%	1,500	****1,500	BONUS NOT EARNED
----lines not shown----								
994	CHRIS	275,000	60,000	80,000	17.0%	46,750	***60,000	BONUS NOT EARNED

Totals \$1,234,567 \$1,234,567

NUMBER WITH BONUS MORE THAN MAX 999
 NUMBER WITH NO BONUS LESS THAN MIN 999
 NUMBER OF SALESPEOPLE WITH BONUS 999
 NUMBER OF SALESPEOPLE WITHOUT BONUS 999
 NUMBER OF SALESPEOPLE 999
 NUMBER WITH PAID EQUAL EARNED 999
 PERCENT WITH PAID EQUAL EARNED 999.99%
 PERCENT WITH BONUS >300,000 999.99%
 PERCENT WITHOUT BONUS <=300,000 999.99%