

Commission Problem

Problem Definition: The Commission Problem includes a salesperson in the former Arizona Territory sold rifle locks, stocks and barrels made by a gunsmith in Missouri. Cost includes

Locks- \$45

Stocks- \$30

Barrels- \$25

The salesperson had to sell at least one complete rifle per month and production limits were such that the most the salesperson could sell in a month was 70 locks, 80 stocks and 90 barrels.

After each town visit, the sales person sent a telegram to the Missouri gunsmith with the number of locks, stocks and barrels sold in the town. At the end of the month, the salesperson sent a very short telegram showing --1 lock sold. The gunsmith then knew the sales for the month were complete and computed the salesperson's commission as follows:

On sales up to(and including) \$1000= 10%

On the sales up to(and includes) \$1800= 15%

On the sales in excess of \$1800= 20%

The commission program produces a monthly sales report that gave the total number of locks, stocks and barrels sold, the salesperson's total dollar sales and finally the commission

Steps to be followed for the above lab program.

1. Write a program for the above problem statement
2. Prepare the test Input for the program
3. Write the test-cases in the lab test-case Template
4. Execute the test-cases
5. Compare the Expected output and Actual output and write the status in the test-case table.
6. Show few failed test cases by following the mutation testing.

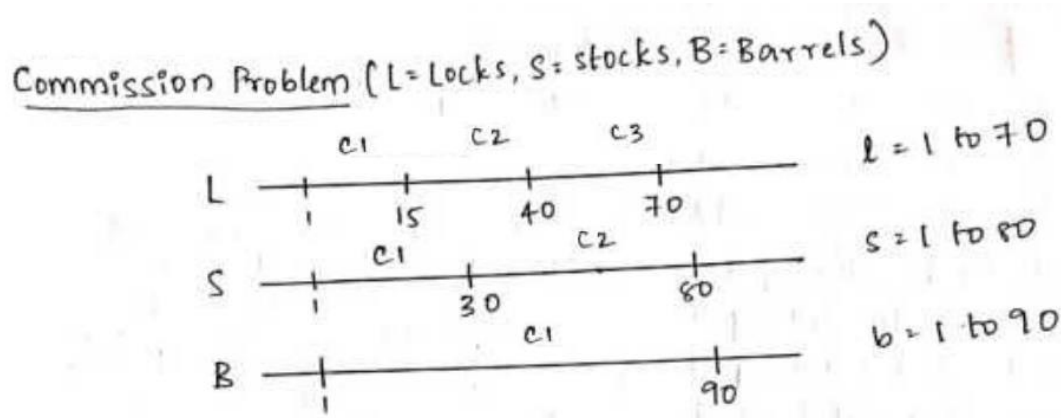
program for the above problem statement

PROGRAM CODE:

```
1  #include<stdio.h>
2  main()
3  {
4
5      int locks,stocks;
6      int barrels,t_sales,flag=0;
7      float commission;
8      printf("ente the total number of locks stocks and barrels");
9      scanf("%d %d %d", &locks, &stocks, &barrels);
10     if(((locks<=0) || (locks>=70)) || ((stocks<=0) || (stocks>=80)) ||
        ((barrels<=0) || (barrels>=90)))
11     {
12         flag = 1;
13     }
14     if(flag==1)
15     {
16         printf("invalid input");
17         exit(0);
18     }
19     t_sales = (locks * 45) + (stocks * 30) + (barrels * 25);
20     if (t_sales <= 1000)
21     {
22         commission = 0.10 * t_sales;
23     }
24     else if (t_sales < 1800)
25     {
26         commission = 0.10 * 1000;
27         commission = commission + (0.15 * (t_sales - 1000));
28     }
29     else
30     {
31         commission = 0.10 * 1000;
32         commission = commission + (0.15 * 800);
33         commission = commission + (0.20 * (t_sales - 1800));
34     }
35     printf("the total sales is %d \n the commission is
        %f", t_sales, commission);
36     }
37
```

Prepare the test Input for the program

Expected Output is 10% 15% and 20% hence partition any one of the variable input domain into 3 classes.



Procedure: Suppose to pick only one input value from each class of the variable to form the test input.

Prepare Test case for

1. Weak Normal ECT
2. Strong Normal ECT
3. Weak Robust ECT
4. Strong Robust ECT

Test-case Table for Commission Program using Equivalence Class Testing

Project Name	Commission Program								
Module Name	Salesperson_Commission								
Creation By									
Creation Date									
Reviewed By									
Reviewed Date									
Test Scenario ID	Test Scenario Description	Test Case ID	Test Case Description	Test Steps	Pre-conditions	Test Data	Expected Output	Actual Output	Status
TS_Salesperson_Commission	Check how much Commission has been Received sales person	TC_Tri_001	Test for 10% commission	Enter the Input for locks stocks and barrels from C1	atleast 1 lock/stock/Barrel should sold	l=5 s=10 and b=10	t_sales=775 Commission=77		
		TC_Tri_002	Test for 15% commission						
		TC_Tri_003	Test for 20% commission						