

Finding the area of a rectangle without using the actual formula

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Abstract: In this paper, I have devised a Program that calculates the area of a rectangle without the use of the formula. The General formula used is Area=Length*Breadth. I have used loops to solve the program

I. INTRODUCTION

The actual formula of finding the area of a rectangle is multiplying the given length into the given breadth. The result gives us the area of the rectangle.

The idea that I have used is that to fill the rectangle with squares of unit area and then count the number of squares which will give the area of rectangle.
Total Area = Area of unit square *
Number of unit squares
i.e. Total Area=1*Number of unit squares

II. ALGORITHM DESCRIPTION

This algorithm uses loops to count the number of unit squares inside the rectangle.

In this algorithm I have used nested loop. It has two stages.

- ❖ Stage 1: In this stage the loop re-iterates till the condition of the loop is true .

The variable i is initially given the value 0 and it helps us count the number of rows of unit squares in a rectangle.

- ❖ Stage2: In this stage we have a

nested loop inside the previous mentioned one wherein we count the number of unit squares in one row using the variable j.

- ❖ Stage3: We store the total number of iterations inside a variable num that was initialised as 0 outside the two loops.

The final value of num gives us the total number of unit squares inside the rectangle and hence we have the required area.

III. ALGORITHM AND ANALYSIS

Algorithm: Area of rectangle

Input: len, bred

Initialised variables: i=j=num=0

Output result :len*bred

Method:

- ❖ Step1: #include<stdio.h>
{
- ❖ Step2: int len,bred,num,i,j;
- ❖ Step3: num=0;
- ❖ Step4: printf(" Enter Length \n");
- ❖ Step5: scanf(" %d" ,len);
- ❖ Step6: printf(" Enter breadth \n");
- ❖ Step7: scanf(" %d" ,bred);

- ❖ Step8: for(i=0;i<bred;i++)
- ❖ Step9: for(j=0;j<len;j++)
- ❖ Step10: num++
- }
- ❖ Step11: printf(" Area of
Rectangle is:
 %d\n" ,num);
- ❖ Step 12: return 0;
- ❖ Step 13: }

formula and instead considering the figure to be a collection of squares of unit area and counting them.

REFERENCES

- ❖ Let Us C by Yashvant P. Kanetkar,
- ❖ Programming in ANSI C By E.Balagurusamy.
- ❖ Codeblocks IDE, for compilation and execution.

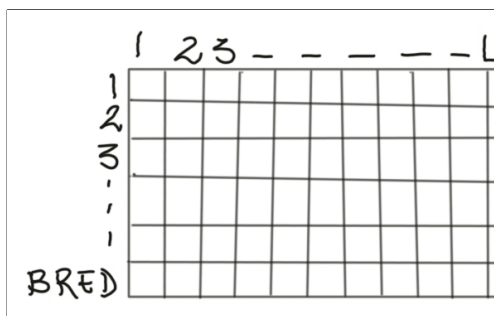


Figure1

Figure1: According to the above figure the small boxes represent the unit squares. The total number of rows (counted by i in loop 1) is equal to bred(input by user) and the number of unit squares in one row (counted by j in loop 2) is equal to len.

CONCLUSION

From this paper we can conclude that we can calculate the area of any figure without using the actual mathematical