Indian Institute of Information Technology Allahabad

ITP Assignment-‘2’

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Abstract:

This paper contains an analysis concerning the task of writing a program in C to implement a method that returns a structure including calling the method and using its value.

I. INTRODUCTION:

To conduct the task of composing a program in C to carry out a technique that profits a structure including calling the technique and utilizing its worth.

Structure in C writing computer programs is exceptionally useful in situations where we really want to store comparable information of various elements. Structure is another client characterized information type accessible in C that permits to join information things of various types.
Structures are utilized to address a record. Assume you need to monitor your books in a library.

i) SYNTAX OF STRUCTURES:

```
struct structName

{

  // structure definition

  Data_type1 member_name1;

  Data_type2 member_name2;

  Data_type2 member_name2;

};
```

ii) HOW TO DECLARE STRUCTURE VARIABLES:

1. Declaration of Structure Variables with Structure Definition
2. Declaration of Structure Variables Separately

iii) Function Calling:

A function call is an important part of the C programming language. It is called inside a program whenever it is required to call a function. It is only called by its name in the main() function of a program. We can pass the parameters to a function calling in the main() function.

iv) Call by Value:

When single or multiple values of an actual argument are copied into the formal parameter of a function, the method is called the **Call by Value**. Hence, it does not alter the function's actual parameter using the formal parameter.

II. LOGIC:

In this problem we have to write a program in C to implement a method that returns a structure including calling the method and using its value. Some keywords are used in this problem like char which declares a character and int which declares integer and array which is used to store a collection of variables of the same type. Mainly we used the structure function so that we can group the variables easily under one name in a block of memory by just declaring “struct”.

The useful components of this project are structures and user defined functions. A structure is a user defined data type in C. A structure creates a data type that can be used to group items of possibly different types into a single type.At the very beginning we create a structure named dim and initialised a variable for the same after which we created a second structure subject. Here ‘void’ is used as a function return type, it indicates that the function does not return a value.We passed one parameter for each of the function and a total of four.

III. PSEUDOCODE:

```
struct dim
    int l;
    float b;
    float peri;
    float area;

struct dim func(int l,float b)
    struct dim rect1;
     rect1.l=l;
     rect1.b=b;
     rect1.peri=2*(rect1.l+rect1.b);
     rect1.area=(rect1.l*rect1.b);

     rect=func(l,b);
```

IV. ACTUAL CODE:

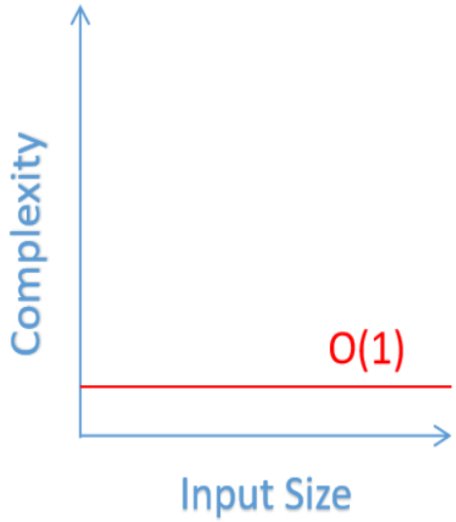
```c
#include<stdio.h>
#include<math.h>

struct dim{
    int l;
    float b;
    float peri;
    float area;
};


struct dim func(int l,float b) {
    struct dim rect1;
    rect1.l=l;
    rect1.b=b;
    rect1.peri=2*(rect1.l+rect1.b);
    rect1.area=(rect1.l*rect1.b);
    return (rect1) ;
};

int main(){
    int l;
    float b;
    struct dim rect;
    printf("Enter integer length: ");
    scanf("%d", &l);
    printf("Enter float breadth: ");
    scanf("%f", &b);

    rect=func(l,b);
    printf("length: %d\n", rect.l);
    printf("breadth: %f\n", rect.b);
    printf("area: %f\n", rect.area);
    printf("perimeter: %f\n", rect.peri);

    return 0;
}
```

V. OUTPUT:

```
Enter integer length: 6
Enter float breadth: 5.45
length: 6
breadth: 5.450000
area: 32.699997
perimeter: 22.900000
```

VI. TIME COMPLEXITY:

Time complexity is a function describing the amount of time a program takes in terms of the amount of input to the function.



VII. CONCLUSION:

For implementing a method that returns a structure including calling the method and using its value through this program we created the method by using user defined structure, variable, void function. It takes data from user and store it into the structure function .Hence we get the desired output.

VII. ACKNOWLEDGEMENT:

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VIII. REFERENCES:

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