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Smt. Chandaben Mohanbhai Patel Institute of Computer Applications (CMPICA)

Faculty of Computer Science and Applications

Case Study

B.Sc. IT – Semester II

CA407:Advance Programming In C

Title of Case Study

Write a Program To calculate area of different shape using pointer, call by reference, user define function, void pointer, Pre-processing directive and Dynamic memory allocation

Submitted To: Vivek Patel

Submitted By		
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C Program Code

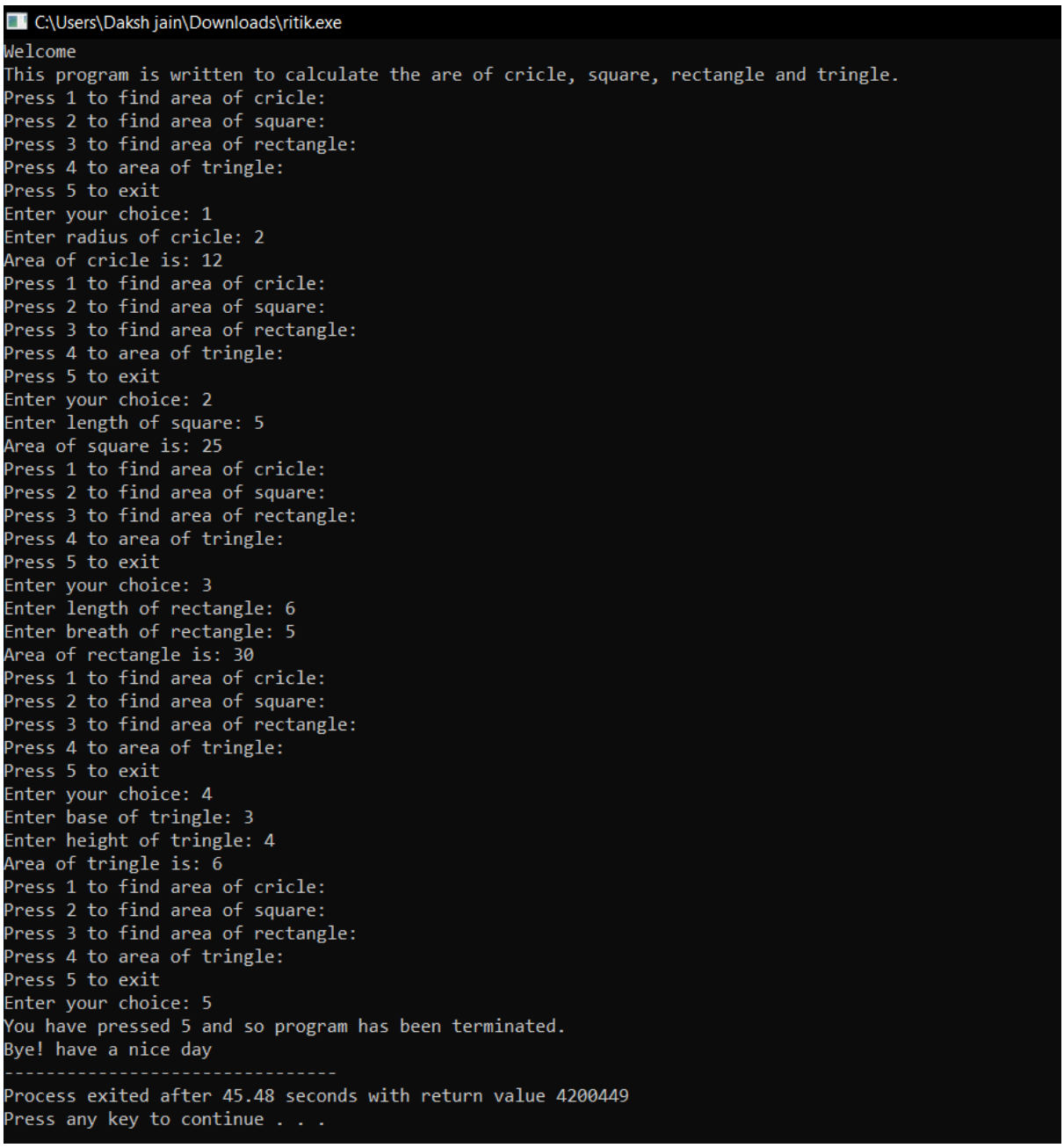
```
#include<stdio.h>
#define PI 3.14
int x;
int add(int *ptr1,int *ptr2,int *ptr3,int *ptr4,float *ptr5);
void functon1();
void function2();
void __attribute__((constructor)) function1();
void __attribute__((destructor)) function2();
void main()
{
   int i=1,total,choice,a=0,l=0,b=0,h=0;
   float r=0.0;
   void *p1;
   total=calloc(10,sizeof(int));
   do
   {
      printf("\nPress 1 to find area of cricle: ");
      printf("\nPress 2 to find area of square: ");
      printf("\nPress 3 to find area of rectangle: ");
      printf("\nPress 4 to area of tringle: ");
      printf("\nPress 5 to exit");
      printf("\nEnter your choice: ");
      scanf("%d",&choice);
      if(choice==1)
      {
         printf("Enter radius of cricle: ");
```

```
    scanf("%f",&r);
}
else if(choice==2)
{
    printf("Enter length of square: ");
    scanf("%d",&a);
}
else if(choice==3)
{
    printf("Enter length of rectangle: ");
    scanf("%d",&l);
    printf("Enter breath of rectangle: ");
    scanf("%d",&b);
}
else if(choice==4)
{
    printf("Enter base of tringle: ");
    scanf("%d",&b);
    printf("Enter height of tringle: ");
    scanf("%d",&h);
}
switch(choice)
{
    case 1:
        x=1;
        total=add(&a,&l,&b,&h,&r);
        printf("Area of cricle is: %d",total);
```

```
            break;
        case 2:
            x=2;
            total=add(&a,&l,&b,&h,&r);
            printf("Area of square is: %d",total);
            break;
        case 3:
            x=3;
            total=add(&a,&l,&b,&h,&r);
            printf("Area of rectangle is: %d",total);
            break;
        case 4:
            x=4;
            total=add(&a,&l,&b,&h,&r);
            printf("Area of tringle is: %d",total);
            break;
        case 5:
            i=3;
            break;
        default:
            printf("Enter a valid choice");
      }
   }while(i==1);
}
int add(int *ptr1,int *ptr2,int *ptr3,int *ptr4,float *ptr5) // a,l,b,h,r
{
   int sum;
```

```
    if(x==1)
    {
        sum= PI* *ptr5 * *ptr5;
    }
    if(x==2)
    {
        sum= *ptr1 * *ptr1;
    }
    if(x==3)
    {
        sum= *ptr2 * *ptr3;
    }
    if(x==4)
    {
        sum= 0.5* *ptr3 * *ptr4;
    }
    return sum;
}
void function1()
{
    printf("Welcome \nThis program is written to calculate the are of cricle, square, rectangle and tringle.");
}
void function2()
{
    printf("You have pressed 5 and so program has been terminated. \nBye! have a nice day");
}
```

Output


C:\Users\Daksh jain\Downloads\ritik.exe
Welcome
This program is written to calculate the are of cricle, square, rectangle and tringle.
Press 1 to find area of cricle:
Press 2 to find area of square:
Press 3 to find area of rectangle:
Press 4 to area of tringle:
Press 5 to exit
Enter your choice: 1
Enter radius of cricle: 2
Area of cricle is: 12
Press 1 to find area of cricle:
Press 2 to find area of square:
Press 3 to find area of rectangle:
Press 4 to area of tringle:
Press 5 to exit
Enter your choice: 2
Enter length of square: 5
Area of square is: 25
Press 1 to find area of cricle:
Press 2 to find area of square:
Press 3 to find area of rectangle:
Press 4 to area of tringle:
Press 5 to exit
Enter your choice: 3
Enter length of rectangle: 6
Enter breath of rectangle: 5
Area of rectangle is: 30
Press 1 to find area of cricle:
Press 2 to find area of square:
Press 3 to find area of rectangle:
Press 4 to area of tringle:
Press 5 to exit
Enter your choice: 4
Enter base of tringle: 3
Enter height of tringle: 4
Area of tringle is: 6
Press 1 to find area of cricle:
Press 2 to find area of square:
Press 3 to find area of rectangle:
Press 4 to area of tringle:
Press 5 to exit
Enter your choice: 5
You have pressed 5 and so program has been terminated.
Bye! have a nice day

Process exited after 45.48 seconds with return value 4200449
Press any key to continue . . .