

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“JnanaSangama”, Belgaum -590014, Karnataka.



## C PROGRAMMING LAB RECORD

*Submitted by*

**RAHUL P(1BM20CS119)**

*Under the Guidance of*  
**Prof. Rekha G S**  
Assistant Professor,  
Department of CSE,  
BMSCE

*in partial fulfillment for the award of the degree of*  
**BACHELOR OF ENGINEERING**  
*in*  
**COMPUTER SCIENCE AND ENGINEERING**



**B.M.S. COLLEGE OF ENGINEERING**

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**B.M.S. COLLEGE OF ENGINEERING**  
**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**



***DECLARATION***

I, Rahul p , student of 2nd Semester, B.E, Department of Computer Science and Engineering, B. M. S. College of Engineering, Bangalore, hereby declare that, this laboratory work for "C Programming" course has been carried out by us under the guidance of Prof. Rekha G S ,Assistant Professor, Department of CSE, B. M. S. College of Engineering, Bangalore during the academic semester April-2021-June-2021

We also declare that to the best of our knowledge and belief, the development reported here is not from part of any other report by any other students.

RAHUL P (1BM20CS119)

## DEVELOP A C PROGRAM TO CONVERT DEGREE FAHRENHIET To CELSIUS

```
#include<stdio.h>
#include<conio.h>
int main()
{
    float celsius,fahrenheit;
    clrscr();
    printf(" enter the temperature in fahrenheit:");
    scanf("%f",&fahrenheit);
    celsius=0.56*(fahrenheit-32);
    printf("%.2f fahrenheit=%.2f celsius",fahrenheit,celsius);
    getch();
    return(0);
}
```

### OUTPUT

A screenshot of a terminal window with a black background and white text. The text shows the execution of a C program. It starts with the prompt "enter the temperature in fahrenheit:" followed by the user input "56". The next line shows the output "56.00 fahrenheit=13.44 celsius\_".

```
enter the temperature in fahrenheit:56
56.00 fahrenheit=13.44 celsius_
```

## DEVELOP A C PROGRAM TO FIND THE AREA OF TRIANGLE GIVEN ITS SIDES AS INPUT USING FUNCTIONS

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
float area(float a,float b,float c);
int main()
{
    float x,y,z,res;
    clrscr();
    printf("\n enter the the length of the three sides of triangle:");
    scanf("%f %f %f",&x,&y,&z );
    res= area(x,y,z);
    printf("\n the area of triangle:%.2f",res);
    getch();
    return(0);
}

float area(float a,float b,float c)
{
    float area,s;
    s=(a+b+c)/2;
    area=sqrt(s*(s-a)*(s-b)*(s-c));
    return area;
}
```

## Output

```
enter the the length of the three sides of triangle:3 4 5  
the area of triangle:6.00
```

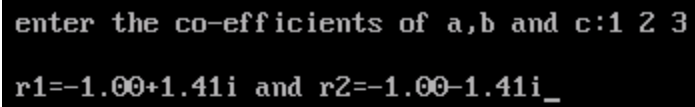
## DEVELOP A C PROGRAM TO FIND ALL THE POSSIBLE ROOTS OF AN QUADRATIC EQUATION

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

int main()
{
    int a,b,c;
    double discriminant,r1,r2,real_part,imaginary_part;
    clrscr();
    printf("\n enter the co-efficients :");
    scanf("%d %d %d",&a,&b,&c);
    discriminant=b*b-4*a*c;
    if(discriminant>0)
    {
        r1=(-b+sqrt(discriminant))/(2*a);
        r2=(-b-sqrt(discriminant))/(2*a);
        printf("\n r1=%.2lfand r2=%.2lf",r1,r2);
    }
    else if(discriminant==0)
    {
        r1=r2=-b/(2*a);
        printf("\n r1=r2=-b/(2*a)",r1);
    }
    else
    {
        real_part=-b/(2*a);
        imaginary_part=sqrt(-discriminant)/(2*a);
```

```
printf("\n r1=%.2lf+%.2lfi and r2=%.2lf-%.2lfi",real_part,imaginary_part,real_part,imaginary_part);  
}  
getch();  
return(0);  
}
```

## OUT PUT

A screenshot of a terminal window with a black background and white text. The first line shows the prompt 'enter the co-efficients of a,b and c:' followed by the input '1 2 3'. The second line shows the output 'r1=-1.00+1.41i and r2=-1.00-1.41i\_'.

```
enter the co-efficients of a,b and c:1 2 3  
r1=-1.00+1.41i and r2=-1.00-1.41i_
```

## DEVELOP A C PROGRAM TO DETERMINE WHETHER THE ENTERED CHARACTER IS VOWEL OR NOT USING SWITCH CASE STATEMENT

```
#include<stdio.h>

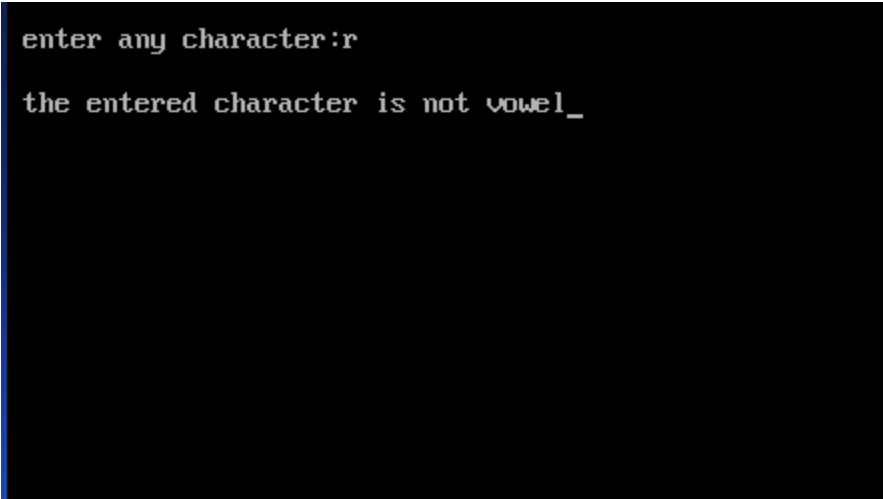
#include<conio.h>

int main()
{
    char ch;
    clrscr();
    printf("\n enter any character:");
    scanf("%c",&ch);
    switch(ch)
    {
        case 'A':
        case 'a':
            printf("\n the entered character is vowel");
            break;
        case 'E':
        case 'e':
            printf("\n the entered character is vowel");
            break;
        case 'I':
        case 'i':
            printf("\n the entered character id vowel");
            break;
        case 'O':
        case 'o':
            printf("\n the entered character is vowel");
            break;
```



```
case 'U':  
case 'u':  
printf("\n the entered character is vowel");  
break;  
default:printf("\n the entered character is not vowel");  
}  
getch();  
return(0);  
}
```

## OUTPUT



```
enter any character:r  
the entered character is not vowel_
```

## DEVELOP A C PROGRAM TO PRINT THE EVEN NUMBERS FROM M TO N

```
#include<stdio.h>

#include<conio.h>

int main()
{
    int m,n;
    clrscr();
    printf("\n enter the number m:");
    scanf("%d",&m);
    printf("\n enter the number n:");
    scanf("%d",&n);
    while(m<=n)
    {
        if(m%2==0)
        {
            printf("%d is a even number \n",m);
        }
        m=m+1;
    }
    getch();
    return(0);
}
```

## OUTPUT

enter the number m:3

enter the number n:9

4 is a even number

6 is a even number

8 is a even number

—

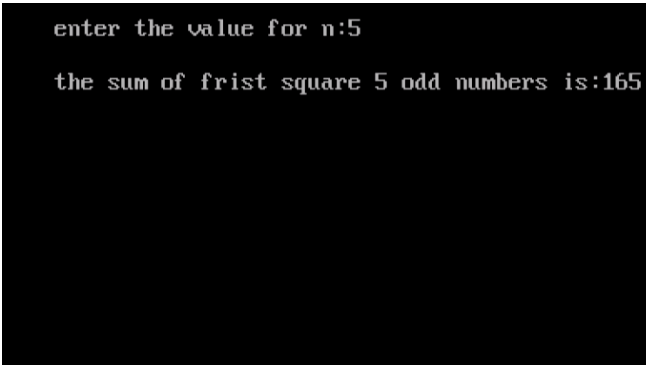
## DEVELOP A C PROGRAM TO CALCULATE THE SUM OF SQUARES OF FRIST N ODD NUMBERS

```
#include<stdio.h>

#include<conio.h>

int main()
{
    int i,n,value,sum=0;
    clrscr();
    printf("\n enter the value for n:");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        value=2*i-1;
        sum+=value*value;
    }
    printf("\n the sum of frist square %d odd numbers is:%d",n,sum);
    getch();
    return(0);
}
```

OUT PUT

A screenshot of a terminal window with a black background and white text. The first line shows the prompt 'enter the value for n:' followed by the user input '5'. The second line shows the output 'the sum of frist square 5 odd numbers is:165'.

```
enter the value for n:5
the sum of frist square 5 odd numbers is:165
```

## DEVELOP A C PROGRAM TO CALCULATE THE SUM OF TWO MATRICES

```
#include<stdio.h>

#include<conio.h>

#include<stdlib.h>

void main()

{

    int i,j,row1,row2,col1,col2,row_sum,col_sum,mat1[5][5],mat2[5][5],sum[5][5];

    clrscr();

    printf("\n enter the number of rows in the frist matrix:");

    scanf("%d",&row1);

    printf("\n enter the number of column in the frist matrix:");

    scanf("%d",&col1);

    printf("\n enter the number of rows in the second matrix:");

    scanf("%d",&row2);

    printf("\n enter the number of column in the second matrix:");

    scanf("%d",&col2);

    if(row1!=row2 || col1!=col2)

    {

        printf("\n the number of rows and columns should be equal to add matrices");

        getch();

        exit(0);

    }

    row_sum=row1;col_sum=col1;

    printf("\n enter the elements of frist matrix:");

    for(i=0;i<row1;i++)

    {

        for(j=0;j<col1;j++)

            scanf("%d",&mat1[i][j]);
```

```

}
printf("\n enter the elements of second matrix:");
for(i=0;i<row2;i++)
{
    for(j=0;j<col2;j++)
        scanf("%d",&mat2[i][j]);
}
for(i=0;i<row_sum;i++)
{
    for(j=0;j<col_sum;j++)
        sum[i][j]=mat1[i][j]+mat2[i][j];
}
printf("\n the addition of two matrices are:");
for(i=0;i<row_sum;i++)
{
    for(j=0;j<col_sum;j++)
        printf("\t %d",sum[i][j]);
}
getch();
return(0);
}

```

## OUTPUT

```
enter the number of rows in the frist matrix:2
enter the number of column in the frist matrix:2
enter the number of rows in the second matrix:2
enter the number of column in the second matrix:2
enter the elements of frist matrix:1
2
3
4

enter the elements of second matrix:1
2
3
4

the addition of two matrices are:      2      4      6      8
```

## DEVELOP A C PROGRAM TO COPY ONE STRING TO ANOTHER AND FIND ITS LENGTH WITHOUT USING BUILT IN FUNCTIONS

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int i=0,length;
    char s1[50],s2[50];
    clrscr();
    printf("\n enter the string:");
    gets(s1);
    while(s1[i]!='\0')
    {
        s2[i]=s1[i];
        i=i+1;
    }
    s2[i]='\0';
    printf("\n the copied string is :");
    puts(s2);
    while(s2[i]!='\0')
    {
        i=i+1;
    }
    length=i;
    printf("\n the length of the copied string is:%d",length);
    getch();
    return(0);
}
```



## OUT PUT

```
enter the string:RAHUL
```

```
the copied string is :RAHUL
```

```
the length of the copied string is:5_
```

## DEVELOP A C PROGRAM TO CREATE STUDENT STRUCTURE,READ TWO STUDENT DETAILS(STUDENT ROLL NUMBER ,NAME ,SECTION,DEPARTMENT,FEES AND RESULT)AND PRINT THE STUDENT DETAILS WHO HAS SCORED HIGHEST MARKS

```
#include<stdio.h>

#include<conio.h>

int main()
{
    struct student
    {
        int roll_no;
        char name[50];
        char section[10];
        char department[50];
        int fees;
        int total_marks;
    };
    struct student stud[5];
    int n,i,large=-34;
    clrscr();
    printf("\n enter the number of students :");
    scanf("%d",&n);
    for(i=0;i<n;i++)
    {
        printf("\n enter the roll number :");
        scanf("%d",&stud[i].roll_no);
        printf("\n enter the name of the student:");
        scanf("%s",stud[i].name);
```

```

printf("\n enter the sectionof the student:");
scanf("%s",stud[i].section);

printf("\n enter the department of the student:");
scanf("%s",stud[i].department);

printf("\n enter the fees paid by the student:");
scanf("%d",&stud[i].fees);

printf("\n enter the total marks entered by the student:");
scanf("%d",&stud[i].total_marks);
}

printf(" the details of students:\n");
for(i=0;i<n;i++)
{
printf("\n roll number of the student is:%d",stud[i].roll_no);
printf("\n name of the student is:%s",stud[i].name);
printf("\n section :%s",stud[i].section);
printf("\n department of the student:%s",stud[i].department);
printf("\n fees paid by the student:%d",stud[i].fees);
printf("\n total marks obtained by the student:%d",stud[i].total_marks);
}

printf("\n the highest marks is:");
for(i=0;i<n;i++)
{
if(stud[i].total_marks>large)
{
large=stud[i].total_marks;
}
}

printf("\n the student%d is scored %d",i,large);

```

```
getch();  
return(0);  
}
```

## OUTPUT

```
enter the name of the student:rahim  
  
enter the sectionof the student:c  
  
enter the department of the student:cse  
  
enter the fees paid by the student:23000  
  
enter the total marks entered by the student:568  
the details of students:  
  
roll number of the student is:119  
name of the student is:sam  
section :c  
department of the student:cse  
fees paid by the student:23000  
total marks obtained by the student:567  
roll number of the student is:120  
name of the student is:rahim  
section :c  
department of the student:cse  
fees paid by the student:23000  
total marks obtained by the student:568  
the highest marks is:  
the student2 is scored 568
```

## DEVELOP A C PROGRAM TO PERFORM ARITHMETIC OPERATIONS USING POINTERS

```
#include<stdio.h>

#include<conio.h>

void main()

{

    int num1,num2,sum,diff,product,mod;

    int*ptr1,*ptr2;

    float divi;

    clrscr();

    ptr1=&num1;

    ptr2=&num2;

    printf("\n enter any two numbers :");

    scanf("%d %d",ptr1,ptr2);

    sum=*ptr1+*ptr2;

    diff=*ptr1-*ptr2;

    product=*ptr1**ptr2;

    divi=(float)*ptr1/ *ptr2;

    mod=*ptr1 % *ptr2;

    printf("\n sum=%d",sum);

    printf("\n difference=%d",diff);

    printf("\n product=%d",product);

    printf("\n divison=%f",divi);

    printf("\n modulo=%d",mod);

    getch();

}
```

## OUTPUT

```
enter any two numbers :20 5
```

```
sum=25
```

```
difference=15
```

```
product=100
```

```
divison=4.000000
```

```
modulo=0_
```