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C PROGRAMMING LAB RECORD

Submitted by

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Under the Guidance of

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in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

in

ELECTRONICS AND COMMUNICATIONS ENGINEERING

B.M.S. COLLEGE OF ENGINEERING

(Autonomous Institution under VTU)

BENGALURU-560019

April-2021 to June-2021

B.M.S. COLLEGE OF ENGINEERING

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS

DECALARATION

I,DANIAFIRDAUS,student of 2nd Semester, B.E, Department of Electronics and Communications, 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.

DANIA FIRDAUS (1BM18EC034)

1.) **CONVERTION OF DEGREES FAHRENHEIT INTO DEGREES CELSIUS.**

PROGRAM CODE-

```
#include<stdio.h>
 int main()
 {
 float fah, cel;
 printf("Enter a temp in fah: \n");
 scanf("%f", &fah);
 cel = (5.0/9) * (fah - 32);
 printf("%.2f°F is same as %.2f°C", fah, cel);
 return 0;
}
```

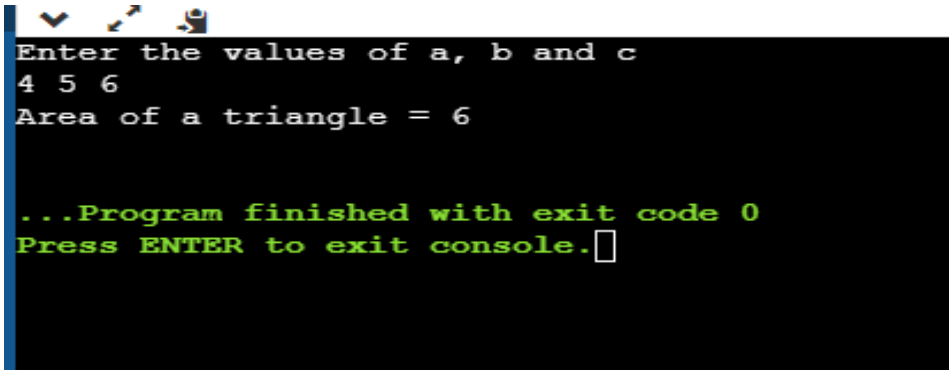
OUTPUT:

2.) AREA OF A TRIANGLE USING FUNCTIONS

PROGRAM CODE-

```
#include<stdio.h>
#include<math.h>
float Area_of_a_triangle(float , float , float );
int main()
{
float a, b, c, Area;
printf("Enter the sides of triangle= ");
scanf("%f%f%f",&a,&b,&c);
Area = Area_of_a_triangle(a, b, c);
printf("Area of triangle = %f", Area);
return 0;
}

float Area_of_a_triangle( float a, float b, float c )
{
float sum, Area;
sum = (a+b+c)/2;
Area = sqrt(sum*(sum-a)*(sum-b)*(sum-c));
return Area;
}
```

OUTPUT:

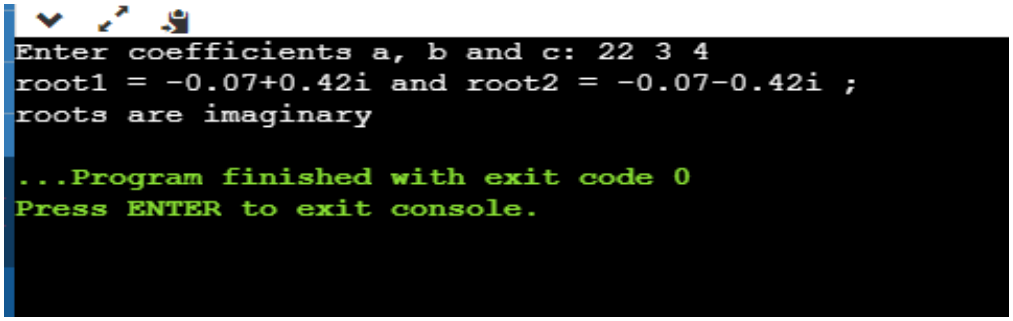


3.) ROOTS OF QUADRATIC EQUATION

PROGRAM CODE-

```
#include <math.h>
#include <stdio.h>
int main() {
   double a, b, c, discriminant, root1, root2, realPart, imagPart;
   printf("Enter coefficients a, b and c: ");
   scanf("%lf %lf %lf", &a, &b, &c);

   discriminant = b * b - 4 * a * c;


   if (discriminant > 0) {
      root1 = (-b + sqrt(discriminant)) / (2 * a);
      root2 = (-b - sqrt(discriminant)) / (2 * a);
      printf("root1 = %.2lf and root2 = %.2lf; \n", root1, root2);
      printf("roots are real and unequal");
   }

   else if (discriminant == 0) {
      root1 = root2 = -b / (2 * a);
      printf("root1 = root2 = %.2lf;\n", root1);
      printf("roots are real and equal");
   }

   else {
      realPart = -b / (2 * a);
      imagPart = sqrt(-discriminant) / (2 * a);
      printf("root1 = %.2lf+%.2lfi and root2 = %.2f-%.2fi ; \n", realPart, imagPart, realPart,
imagPart);
      printf("roots are imaginary");
   }

   return 0;
}
```

OUTPUT:

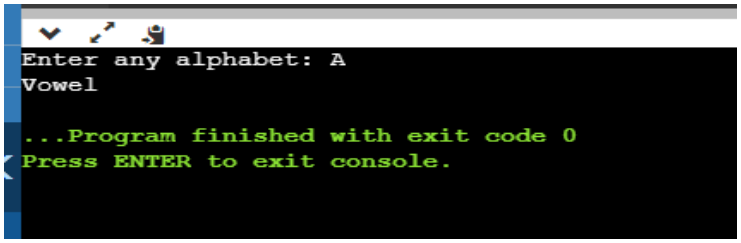


4.) VOWEL OR CONSONANT USING SWITCH CASE

PROGRAM CODE-

```
#include <stdio.h>
int main()
{
 char ch;
printf("Enter any alphabet: ");
   scanf("%c", &ch);
   switch(ch)
   {
      case 'a':

      case 'e':

      case 'i':

      case 'o':

      case 'u':

      case 'A':

      case 'E':

      case 'I':

      case 'O':

      case 'U':
         printf("Vowel");
         break;
      default:
         printf("Consonant");
   }

   return 0;
}
```

OUTPUT:

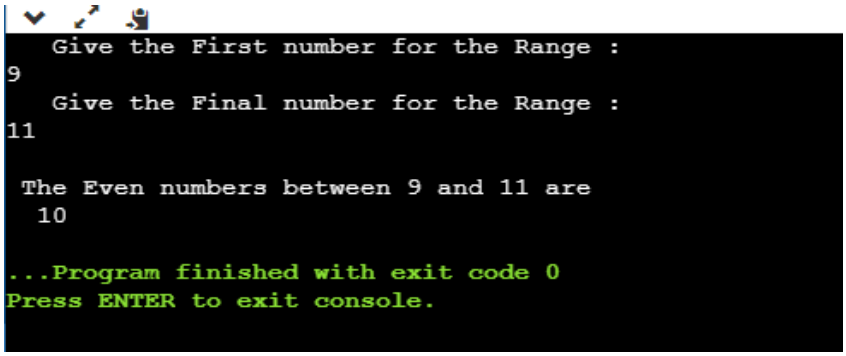


5.) EVEN NUMBERS FROM M TO N

PROGRAM CODE-

```
#include<stdio.h>
int main(){
  int a,b,c,i;
printf("   Give the First number for the Range :   \n");
scanf("%d",&a);
 printf("   Give the Final number for the Range :   \n");
  scanf("%d",&b);
 printf("\n The Even numbers between %d and %d are ",a,b);
 for(i=a; i<=b; ++i){
  c = i % 2;
  if(c == 0)
 printf("\n  %d",i);
  }
return 0;
    }
```

OUTPUT:

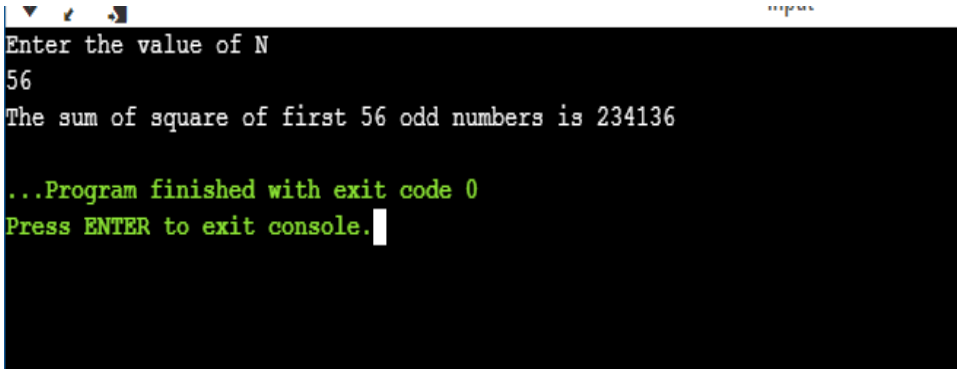


6.) SUM OF SQUARES OF ODD NUMBERS

PROGRAM CODE-

```
#include <stdio.h>
int main()
 {
   int n,sum;
   printf("Enter the value of N \n");
   scanf("%d",&n);
    sum = ((n*((4*n*n)-1))/3);
   printf("The sum of square of first %d odd numbers is %d",n, sum);
   return 0;
}
```

OUTPUT:

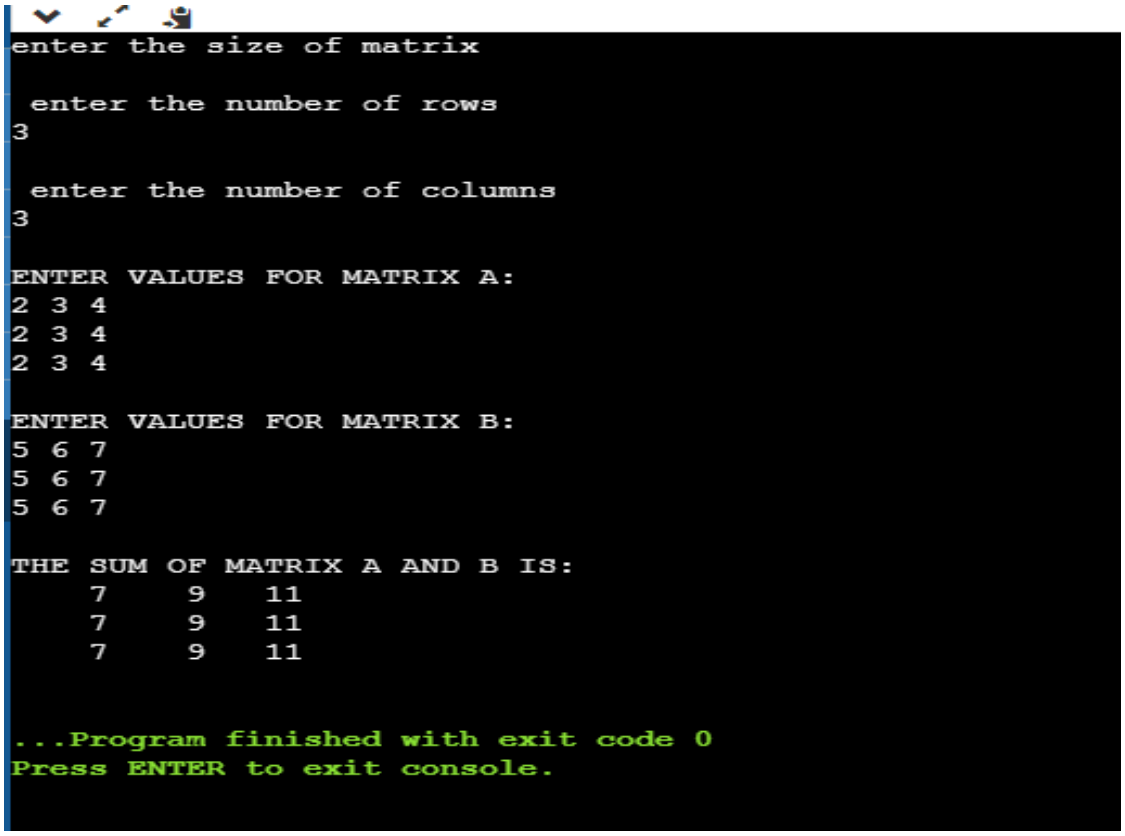


7.) ADDTION OF TWO MATRICES

PROGRAM CODE-

```
#include <stdio.h>
#include <conio.h>
int x,y;
void main()
{
   printf("enter the size of matrix \n");
   printf("\n enter the number of rows\n");
   scanf("%d",&x);
   printf("\n enter the number of columns\n");
   scanf("%d",&y);
   int a[x][y],b[x][y],c[x][y],i,j;

        printf("\nENTER VALUES FOR MATRIX A:\n");
        for(i=0;i<x;i++)
                for(j=0;j<y;j++)
                        scanf("%d",&a[i][j]);
        printf("\nENTER VALUES FOR MATRIX B:\n");
        for(i=0;i<x;i++)
                for(j=0;j<y;j++)
                        scanf("%d",&b[i][j]);
        for(i=0;i<x;i++)
                for(j=0;j<y;j++)
                        c[i][j]=a[i][j]+b[i][j];
        printf("\nTHE SUM OF MATRIX A AND B IS:\n");
        for(i=0;i<x;i++)
      {
                for(j=0;j<y;j++)
                        printf("%5d",c[i][j]);
                printf("\n");
        }
        getch();
}
```

OUTPUT:

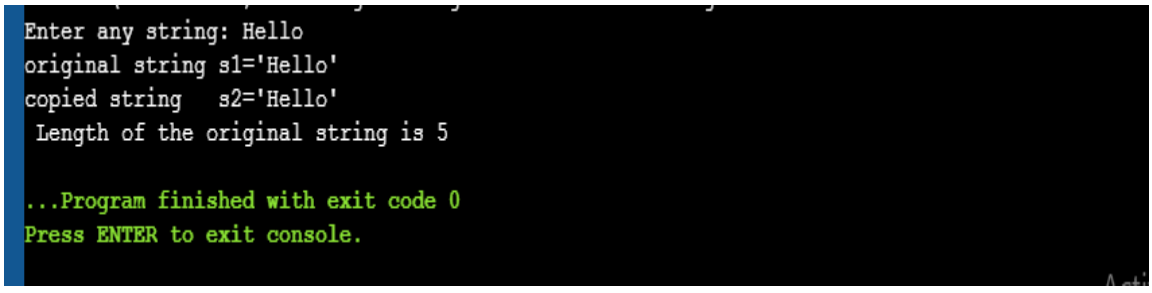

enter the size of matrix
enter the number of rows
3
enter the number of columns
3
ENTER VALUES FOR MATRIX A:
2 3 4
2 3 4
2 3 4
ENTER VALUES FOR MATRIX B:
5 6 7
5 6 7
5 6 7
THE SUM OF MATRIX A AND B IS:
7 9 11
7 9 11
7 9 11
...Program finished with exit code 0
Press ENTER to exit console.

8.) COPYING ONE STRING TO ANOTHER AND FINDING ITS LENGHT

PROGRAM CODE-

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
int main()
{
   char s1[1000],s2[1000];
   int i;

   printf("Enter any string: ");
   gets(s1);
   for(i=0;s1[i]!='\0';i++)
   {
         s2[i]=s1[i];
         }
    s2[i]='\0';

   printf("original string s1='%s'\n",s1);
   printf("copied string   s2='%s'",s2);
   for (i = 0; s1[i] != '\0'; ++i);
   printf("\n Length of the original string is %d", i);

   return 0;
}
```

OUTPUT:

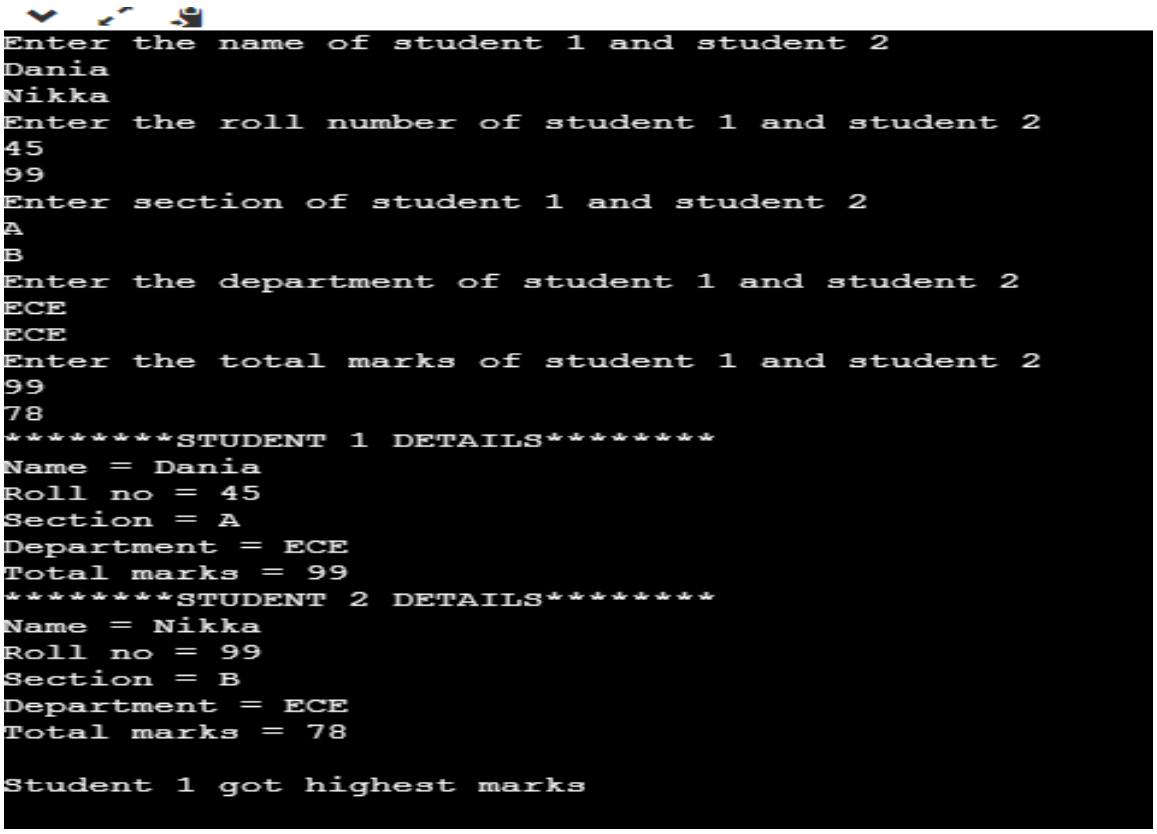


9.) STUDENT DETAILS USING STRING

PROGRAM CODE-

```
#include<stdio.h>
void main()
{
struct student
{
int rollno;
char name[20];
char sec[3];
char dept[20];
int totalmarks;
}
student1,student2;
printf("Enter the name of student 1 and student 2\n");
scanf("%s%s",student1.name,student2.name);
printf("Enter the roll number of student 1 and student 2\n");
scanf("%d%d",&student1.rollno,&student2.rollno);
printf("Enter section of student 1 and student 2\n");
scanf("%s%s",student1.sec,student2.sec);
printf("Enter the department of student 1 and student 2\n");
scanf("%s%s",student1.dept,student2.dept);
printf("Enter the total marks of student 1 and student 2\n");
scanf("%d%d",&student1.totalmarks,&student2.totalmarks);
printf("********STUDENT 1 DETAILS********\n");
printf("Name = %s\n",student1.name);
printf("Roll no = %d\n",student1.rollno);
printf("Section = %s\n",student1.sec);
printf("Department = %s\n",student1.dept);
printf("Total marks = %d\n",student1.totalmarks);
printf("********STUDENT 2 DETAILS********\n");
printf("Name = %s\n",student2.name);
printf("Roll no = %d\n",student2.rollno);
printf("Section = %s\n",student2.sec);
printf("Department = %s\n",student2.dept);
printf("Total marks = %d\n",student2.totalmarks);
if(student1.totalmarks>student2.totalmarks)
{
printf("\nStudent 1 got highest marks\n");
}
else
{
printf("\nStudent 2 got highest marks\n");
}
}
```

OUTPUT:


Enter the name of student 1 and student 2
Dania
Nikka
Enter the roll number of student 1 and student 2
45
99
Enter section of student 1 and student 2
A
B
Enter the department of student 1 and student 2
ECE
ECE
Enter the total marks of student 1 and student 2
99
78
*********STUDENT 1 DETAILS*********
Name = Dania
Roll no = 45
Section = A
Department = ECE
Total marks = 99
*********STUDENT 2 DETAILS*********
Name = Nikka
Roll no = 99
Section = B
Department = ECE
Total marks = 78
Student 1 got highest marks

10.) ARITHMATIC OPERATORS USING POINTERS

PROGRAM CODE:

```
#include <stdio.h>
int main()
{
int num1, num2;
int *ptr1, *ptr2;
int sum, diff, mul, div,remainder;
ptr1=&num1;
ptr2=&num2;
printf("Enter two numbers = ");
scanf("%d%d", ptr1, ptr2);
sum=(*ptr1) + (*ptr2);
diff=(*ptr1) - (*ptr2);
mul=(*ptr1) * (*ptr2);
div=(*ptr1) / (*ptr2);
remainder=((*ptr1) % (*ptr2));
printf("Sum = %d\n", sum);
printf("Difference = %d\n", diff);
printf("Product = %d\n", mul);
printf("Quotient = %d\n", div);
printf("Remainder = %d\n",remainder);
return 0;
}
```

OUTPUT: