VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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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

COMPUTER SCIENCE AND ENGINEERING

B.M.S. COLLEGE OF ENGINEERING
(Autonomous Institution under VTU)
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B.M.S. COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECALARATION

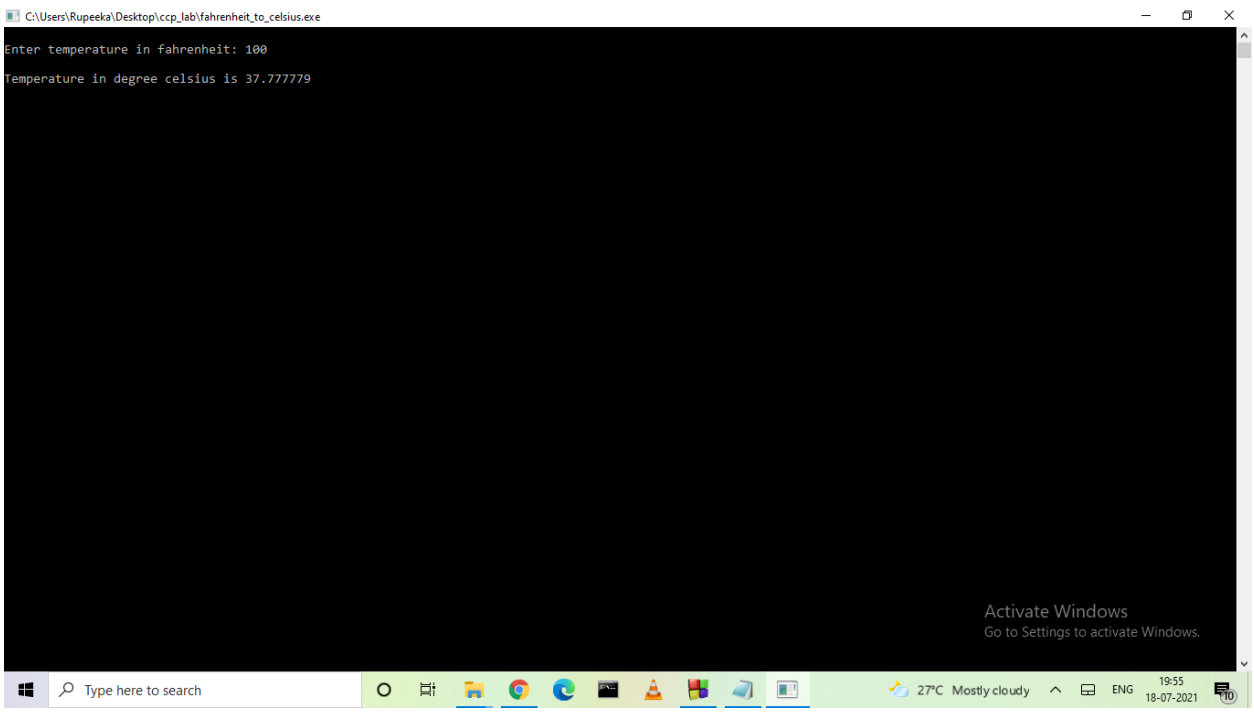
I,AAAA , student of 2nd Semester, B.E, Department of Computer Science and Engineering, B. M. S. College of Engineering, Bangalore, hereby declare that, this laboratory work for "C Programming" course has been carried out by us under the guidance of Prof. Rekha G S ,Assistant Professor, Department of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

RITIK SINGH 1BM20IS121

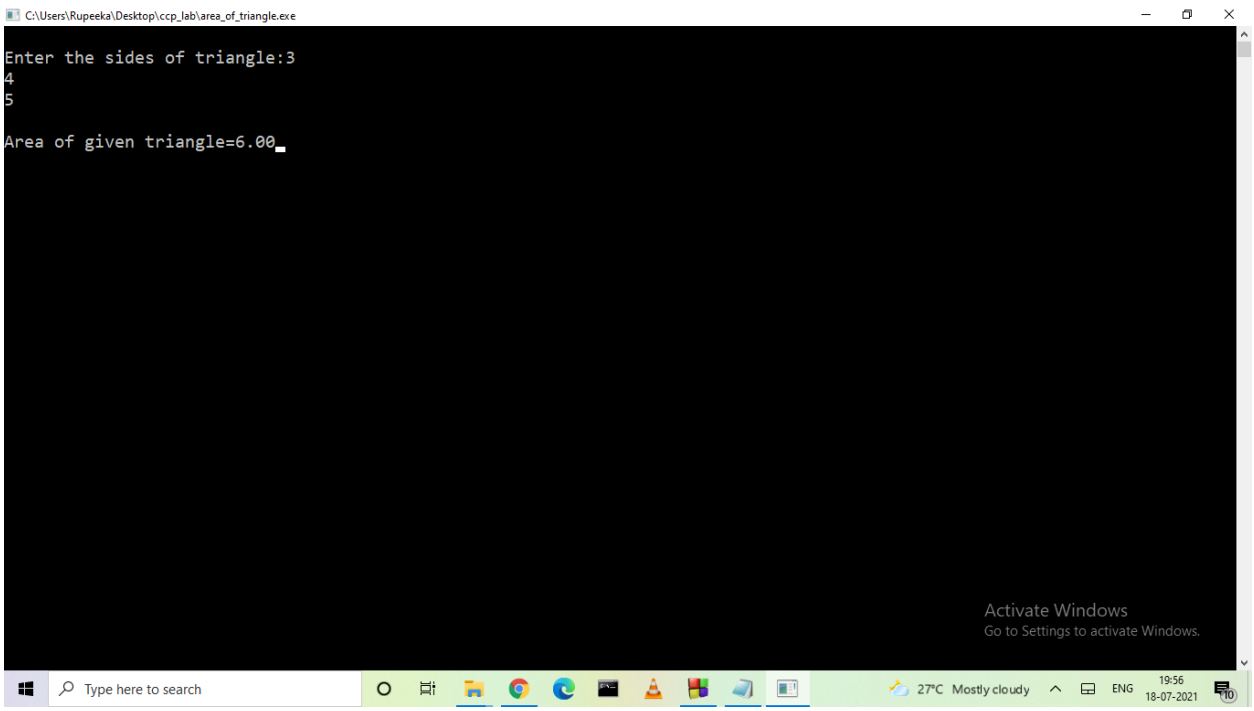
1.0 C program to convert degrees Fahrenheit into degrees celsius.

```
#include <stdio.h>

int main()
{
   float fah,cel;
   printf("\nEnter temperature in fahrenheit: ");
   scanf("%f",&fah);
   cel = (fah-32)*5/9;
   printf("\nTemperature in degree celsius is %f",cel);
   getch();
   return 0;
}
```



2.0 C program to find the area of a triangle

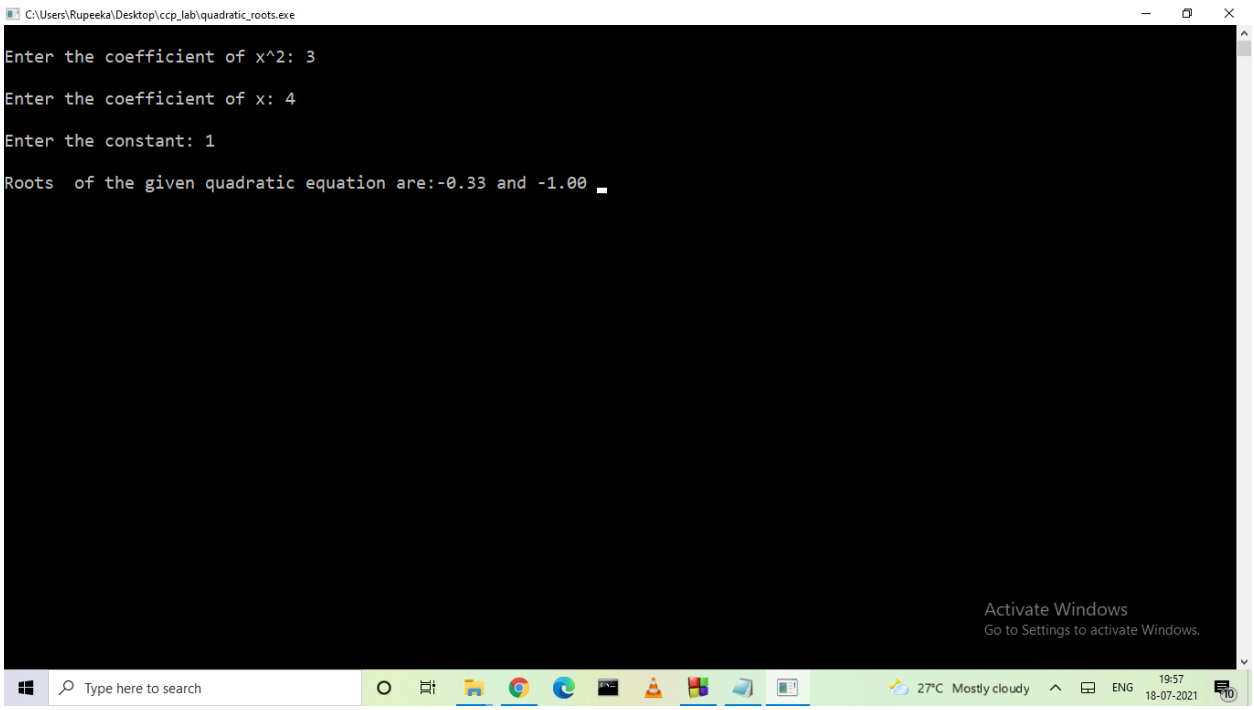
```
#include <stdio.h>
#include <math.h>
#include  <conio.h>

float Areaoftriangle(float a,float b,float c);

float main()
{
   float a,b,c,Area;
   printf("\nEnter the sides of triangle:");
   scanf("%f%f%f",&a,&b,&c);
   Area = Areaoftriangle(a,b,c);
   printf("\nArea of given triangle=%.2f",Area);
   getch();
   return 0;
}

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



3.0 C program to find all possible roots of a quadratic equation.

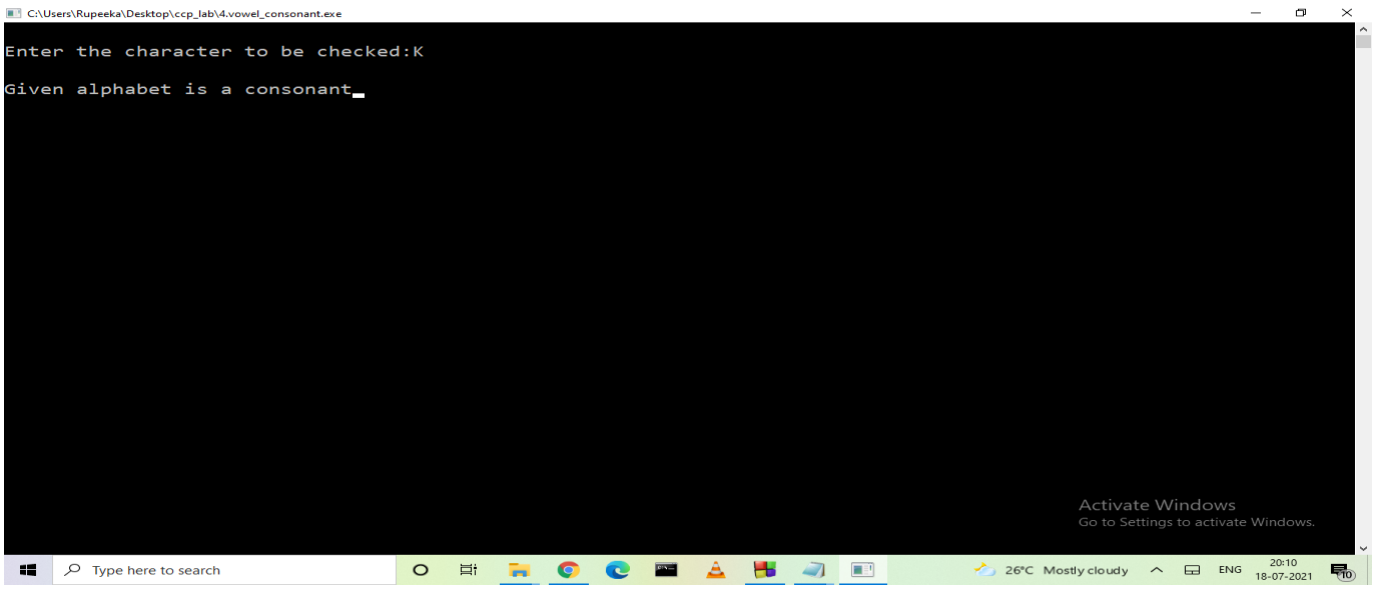
```
#include <stdio.h>
#include <conio.h>
#include <math.h>

int main()
{
   int a,b,c;
   float discriminant,root1,root2,realpart,imaginarypart;
   printf("\nEnter the coefficient of x^2: ");
   scanf("%d",&a);
   printf("\nEnter the coefficient of x: ");
   scanf("%d",&b);
   printf("\nEnter the constant: ");
   scanf("%d",&c);
   discriminant = b*b - 4*a*c;
   //Real and unequal roots

   if (discriminant>0){
      root1 = (-b+sqrt(b*b-4*a*c))/(2*a);
      root2 = (-b-sqrt(b*b-4*a*c))/(2*a);
      printf("\nRoots  of the given quadratic equation are:%.2f and %.2f ",root1,root2);
   }

   //real and equal roots
   else if(discriminant==0){
      root1 = -b/(2*a);
      root2 = root1;
   }

   //Imaginary roots
   else{
```

```
        realpart = -b/(2*a);
        imaginarypart = sqrt(-discriminant)/(2*a);
        printf("\nRoots are:%.2f %.2f %.2f %.2f",realpart,imaginarypart,realpart,imaginarypart);
    }

    getch();
    return 0;
}
```



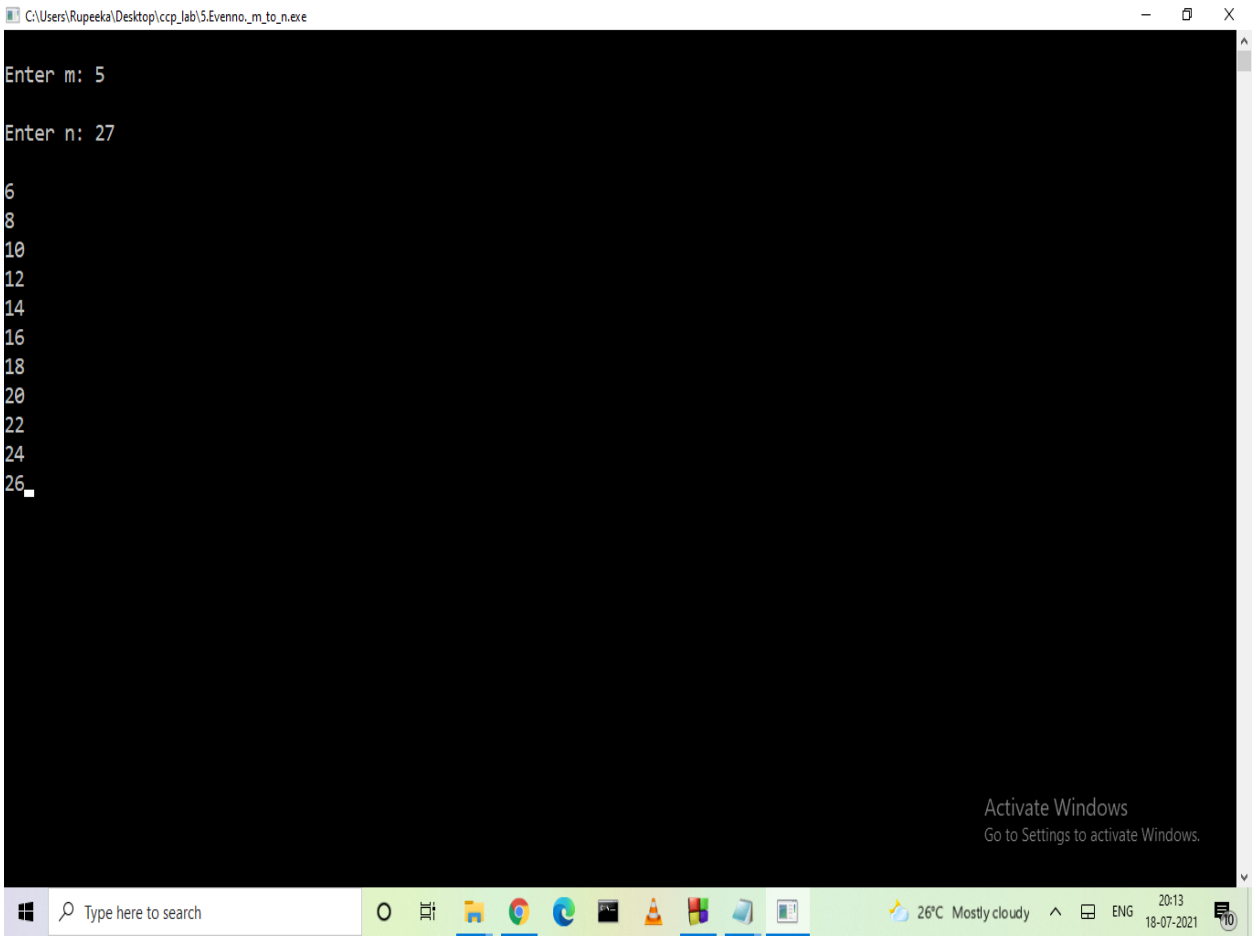
4.0C program to determine whether the entered character is a vowel or consonant

```
#include <stdio.h>
int main()
{
   char vowel_lower,vowel_upper,input;
   printf("\nEnter the character to be checked:");
   scanf("%ch",&input);
   vowel_lower = (input=='a'||input=='e'||input=='i'||input=='o'||input=='u');
   vowel_upper = (input=='A'||input=='E'||input=='I'||input=='O'||input=='U');
   if (vowel_lower || vowel_upper)
      printf("\nGiven alphabet is a vowel");

   else{
      printf("\nGiven alphabet is a consonant");
   }
   getch();
   return 0;
}
```



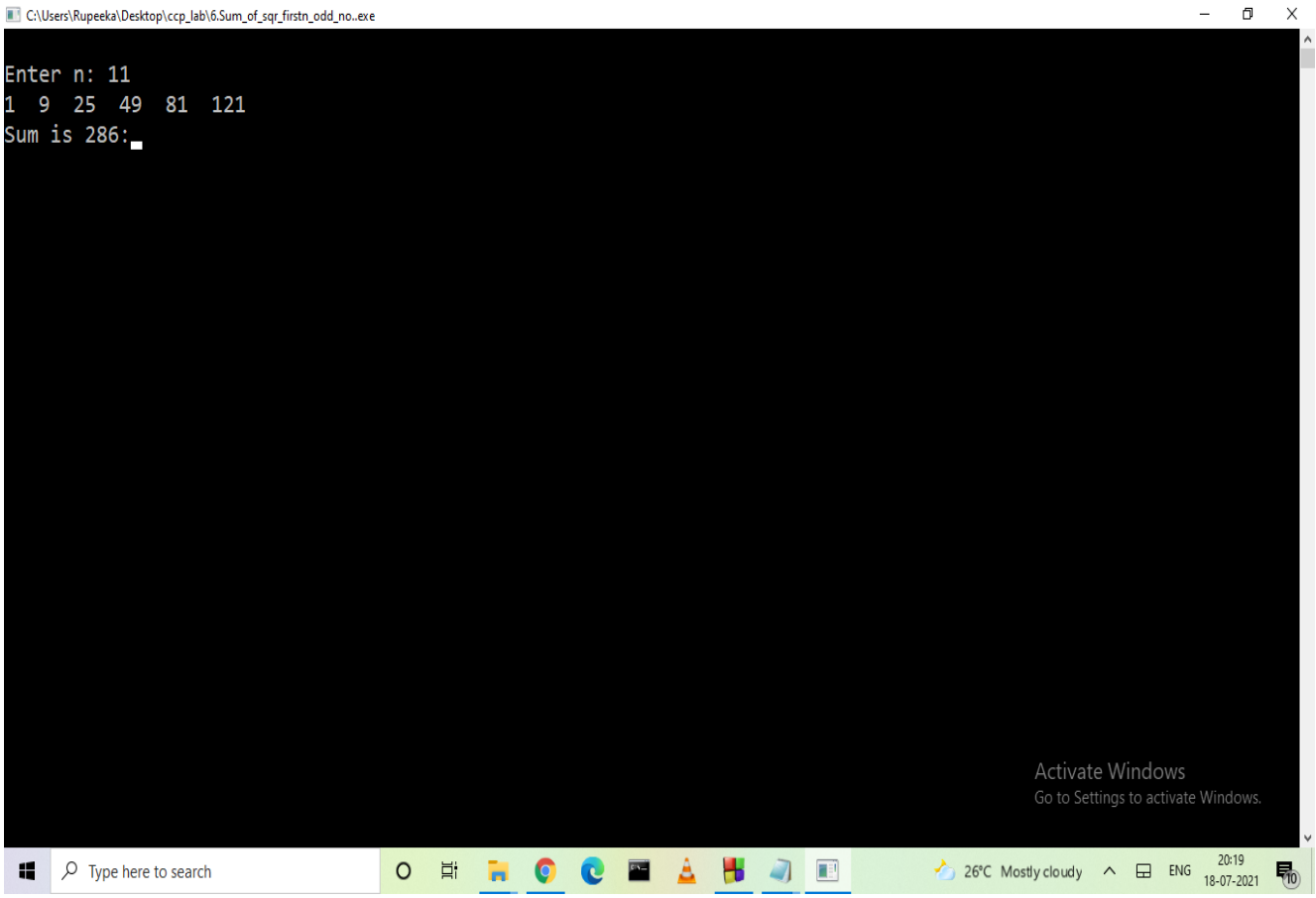
5.0 C program to print even numbers from M to N.

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

int main()
{
   int i,m,n;
   printf("\nEnter m: ");
   scanf("%d",&m);
   printf("\nEnter n: ");
   scanf("%d",&n);
   for(i=m;i<=n;i++){
      if(i%2==0){
         printf("\n%d",i);
      }
   }

   getch();
   return 0;
}
```


C:\Users\Rupeeka\Desktop\ccp_lab\5.Evenno._m_to_n.exe
Enter m: 5
Enter n: 27
6
8
10
12
14
16
18
20
22
24
26
Activate Windows
Go to Settings to activate Windows.
Type here to search
26°C Mostly cloudy
ENG
20:13
18-07-2021

6.0 C program to calculate the sum of squares of first n odd numbers.

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

int main()
{
   int n,i,square,square_sum;
   printf("\nEnter n: ");
   scanf("%d",&n);

   square_sum=0;

   for(i=1;i<=n;i++){
      if(i%2!=0){
         square = i*i;
         printf("%d  ",square);
         square_sum+=square;
      }
   }
   printf("\nSum is %d:",square_sum);

   getch();
   return 0;

}
```


C:\Users\Rupeeka\Desktop\ccp_lab\6.Sum_of_sqr_firstn_odd_no..exe
Enter n: 11
1 9 25 49 81 121
Sum is 286:
Activate Windows
Go to Settings to activate Windows.
Type here to search
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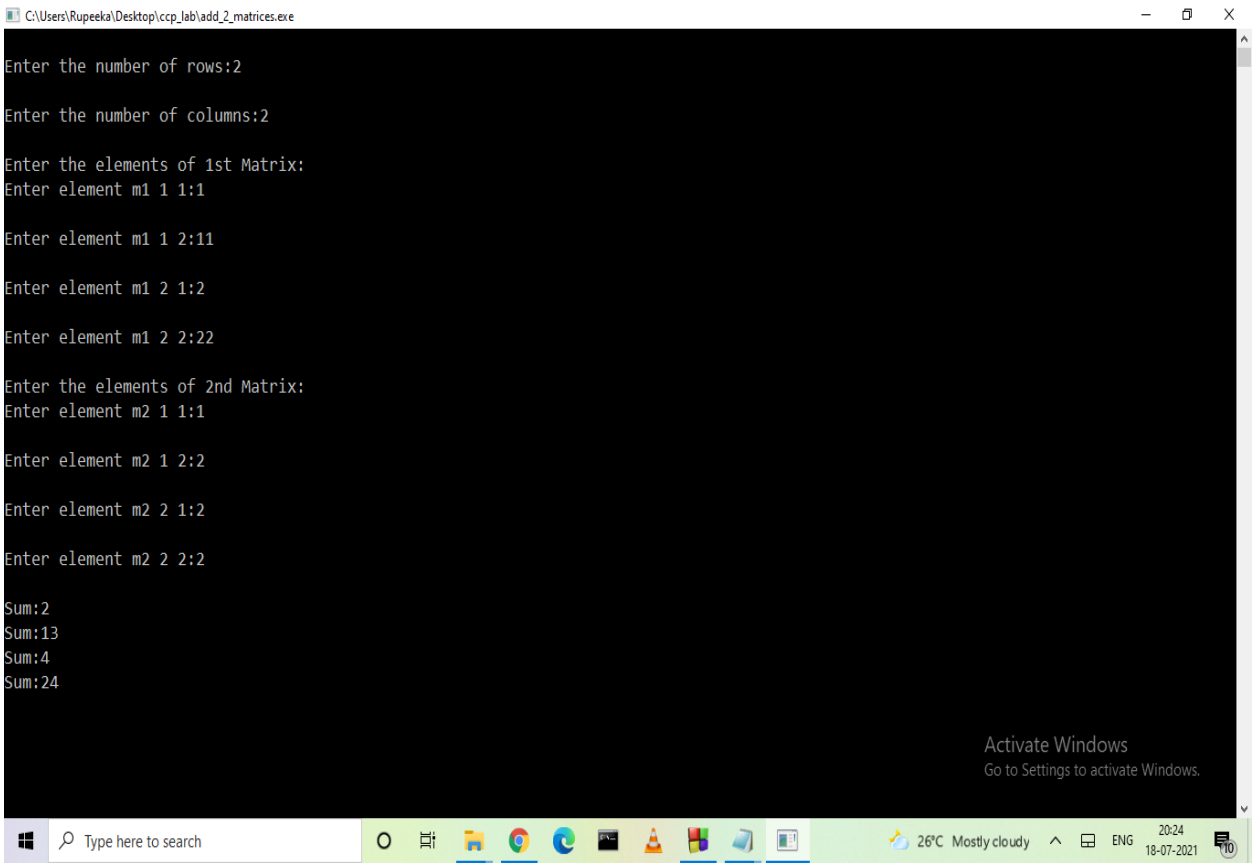
18-07-2021

7.0 C a program to perform addition of two Matrices.

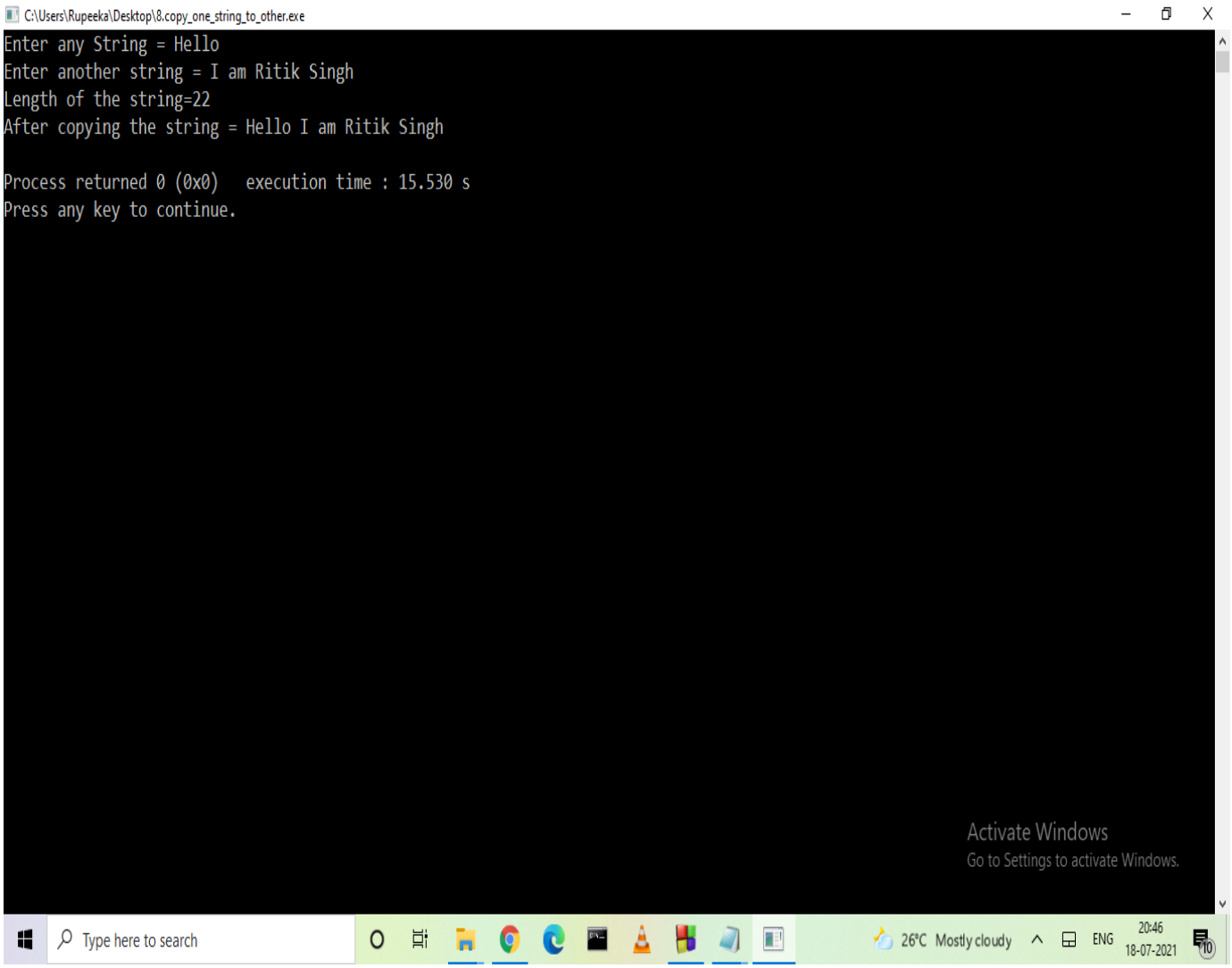
```
#include <stdio.h>
#include <conio.h>

int main()
{
   int m1[10][10],m2[10][10],i,j,r,c,sum[10][10];
   printf("\nEnter the number of rows:");
   scanf("%d",&r);
   printf("\nEnter the number of columns:");
   scanf("%d",&c);
   printf("\nEnter the elements of 1st Matrix:");

   for(i=0;i<r;i++){
      for(j=0;j<c;j++){
         printf("\nEnter element m1 %d %d:",i+1,j+1);
         scanf("%d",&m1[i][j]);
      }
   }
   printf("\nEnter the elements of 2nd Matrix:");
   for(i=0;i<r;i++){
      for(j=0;j<c;j++){
         printf("\nEnter element m2 %d %d:",i+1,j+1);
         scanf("%d",&m2[i][j]);
      }
   }

   //Sum of matrices
   for(i=0;i<r;i++){
      for(j=0;j<c;j++){
         sum[i][j] = m1[i][j] + m2[i][j];
      }
```

```
    }
    ///Printing sum of two matrices::
    for(i=0;i<r;i++){
        for(j=0;j<c;j++){
            printf("\nSum:%d",sum[i][j]);
        }
    }

    getch();
    return 0;
}
```



8.0 C program to copy one string to another string and find its length

```
#include <stdio.h>
int main()
{
char s1[100],s2[50], i,j,l;
printf("Enter any String = ");
gets(s1);
printf("Enter another string = ");
gets(s2);
while(s1[i]!='\0')
i++;
l=i;
while(s2[j]!='\0')
{
s1[i]=s2[j];
i++;
j++;
}
l=i;
printf("Length of the string=%d\n",l);
s1[i]='\0';
printf("After copying the string = ");
puts(s1);
return 0;
}
```


C:\Users\Rupeeka\Desktop\8.copy_one_string_to_other.exe
Enter any String = Hello
Enter another string = I am Ritik Singh
Length of the string=22
After copying the string = Hello I am Ritik Singh
Process returned 0 (0x0)   execution time : 15.530 s
Press any key to continue.
Activate Windows
Go to Settings to activate Windows.
Type here to search
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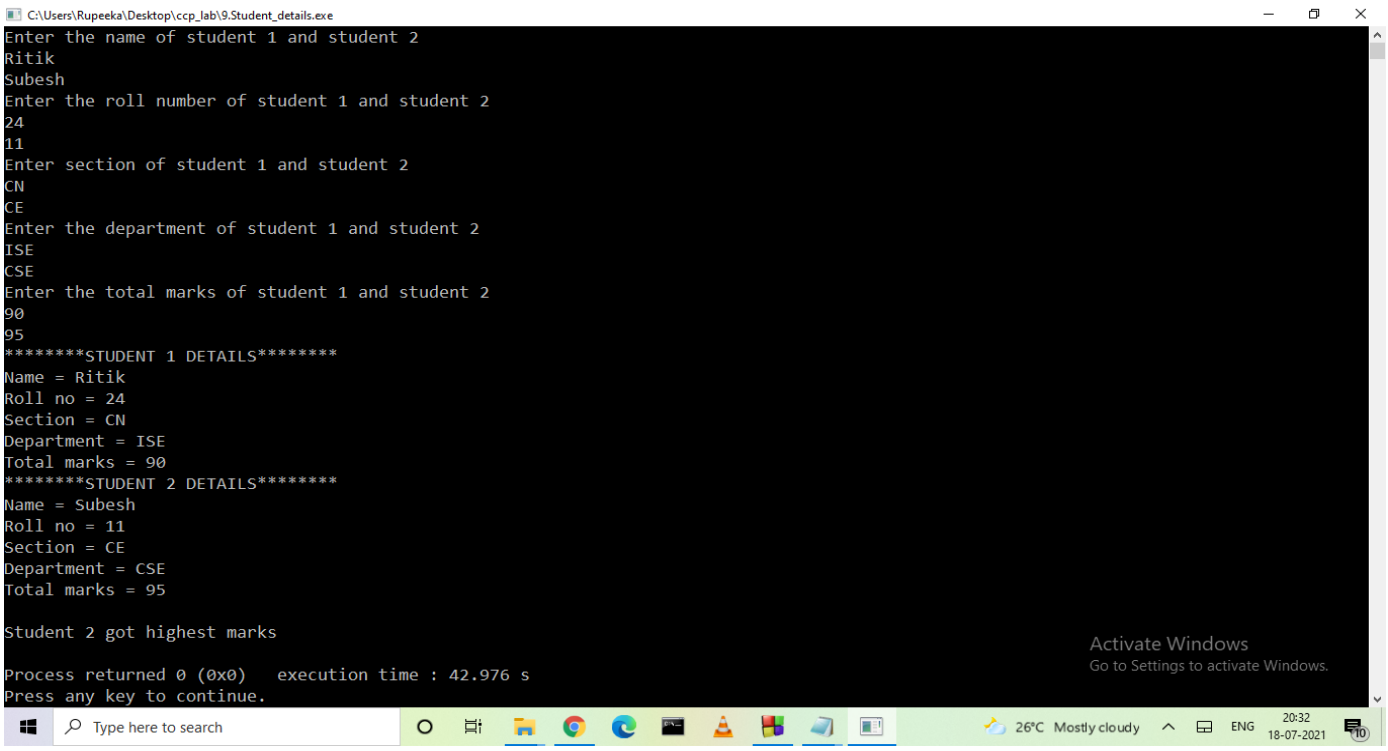
ENG
20:46
18-07-2021

9.0 C program for student evaluation

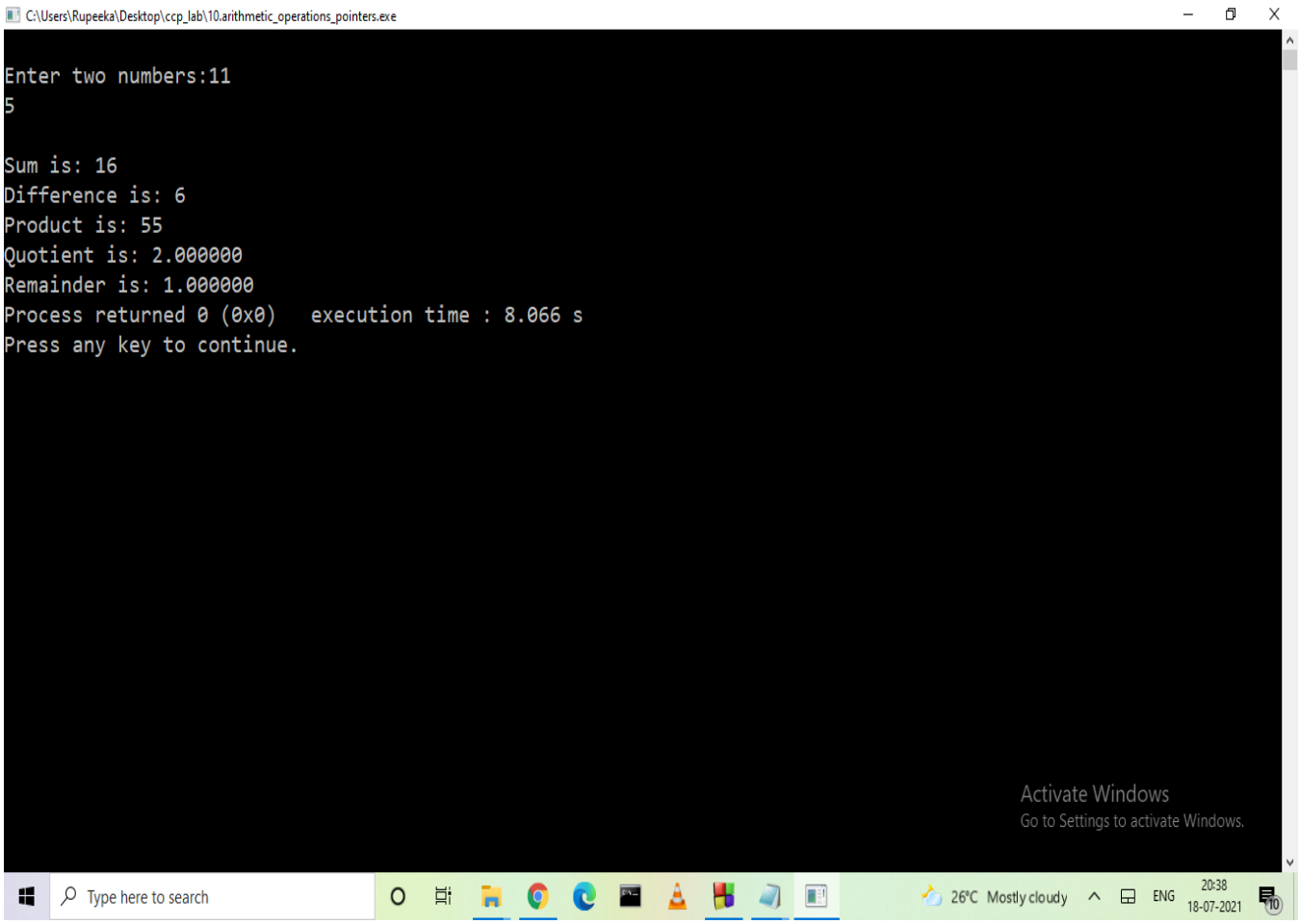
```
#include<stdio.h>
void main()
{
struct student
{
int rollno;
char name[20];
char sec[3];
char dept[20];
int totalmarks;
}
student1,student2;
printf("Enter the name of student 1 and student 2\n");
scanf("%s%s",student1.name,student2.name);
printf("Enter the roll number of student 1 and student 2\n");
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");
}
}
```



10.C program for arithmetic operations using pointers

```
#include <stdio.h>

int main()
{
   int n1,n2,sum,diff,mul;
   float div,rem;
   int *ptr1,*ptr2;
   ptr1=&n1;
   ptr2=&n2;

   printf("\nEnter two numbers:");
   scanf("%d%d",ptr1,ptr2);

   sum=(*ptr1) + (*ptr2);
   diff=(*ptr1)-(*ptr2);
   mul=(*ptr1)*(*ptr2);
   div =  (*ptr1)/(*ptr2);
   rem = (*ptr1)%(*ptr2);

   printf("\nSum is: %d",sum);
   printf("\nDifference is: %d",diff);
   printf("\nProduct is: %d",mul);
   printf("\nQuotient is: %f",div);
   printf("\Remainder is: %f",rem);

   return 0;

}
```


C:\Users\Rupeeka\Desktop\ccp_lab\10.arithmetic_operations_pointers.exe
Enter two numbers:11
5
Sum is: 16
Difference is: 6
Product is: 55
Quotient is: 2.000000
Remainder is: 1.000000
Process returned 0 (0x0)   execution time : 8.066 s
Press any key to continue.
Activate Windows
Go to Settings to activate Windows.
Type here to search
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ENG
20:38
18-07-2021