SIES College of Arts, Science & Commerce
RISE WITH EDUCATION
NAAC REACCREDITED - 'A' GRADE
ISO 9001 : 2008

S.I.E.S College of Arts, Science and Commerce
Sion(W), Mumbai – 400 022.

CERTIFICATE

This is to certify that Mr. / ~~Miss~~ **Harsh Nair**
Roll No. **FCS2122074** Has successfully completed the necessary course of experiments in the subject of **Programming with C** during the academic year **2021 – 2022** complying with the requirements of **University of Mumbai**, for the course of **F.Y.BSc. Computer Science [Semester-2]**

Prof. In-Charge
NAME: Prof. Manoj Singh
(Programming with C)

Examination Date:
Examiner's Signature & Date:

Head of the Department
Prof. Manoj Singh

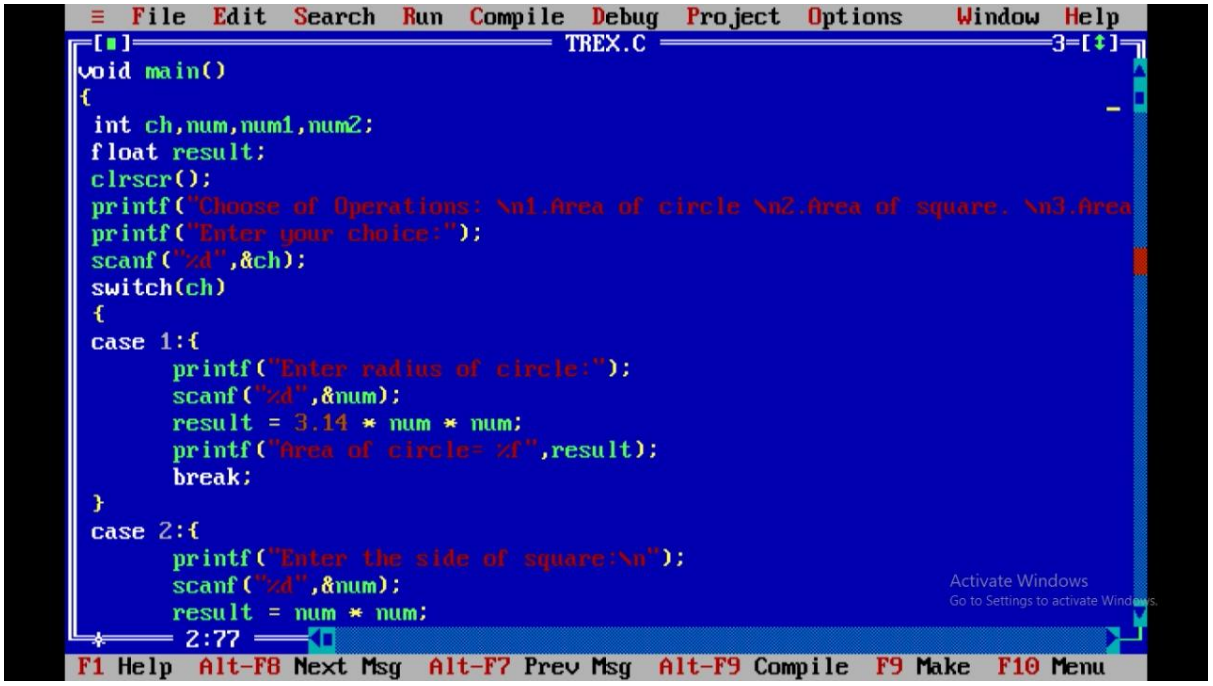
College Seal
And
Date

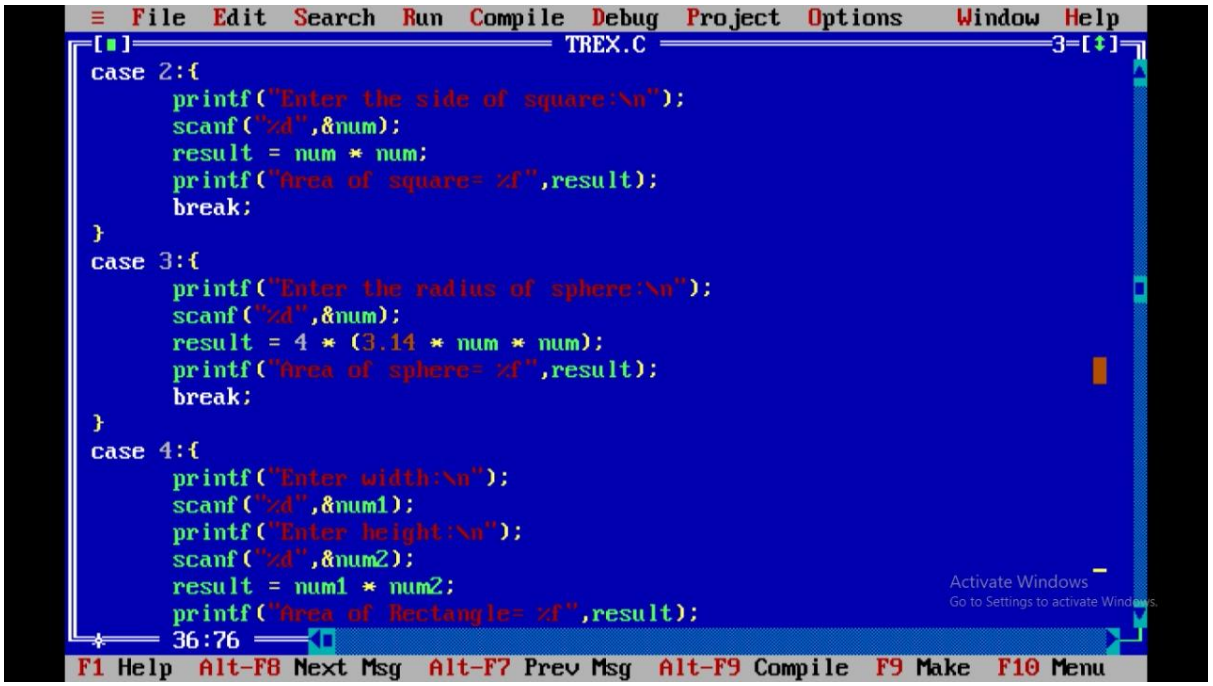
INDEX

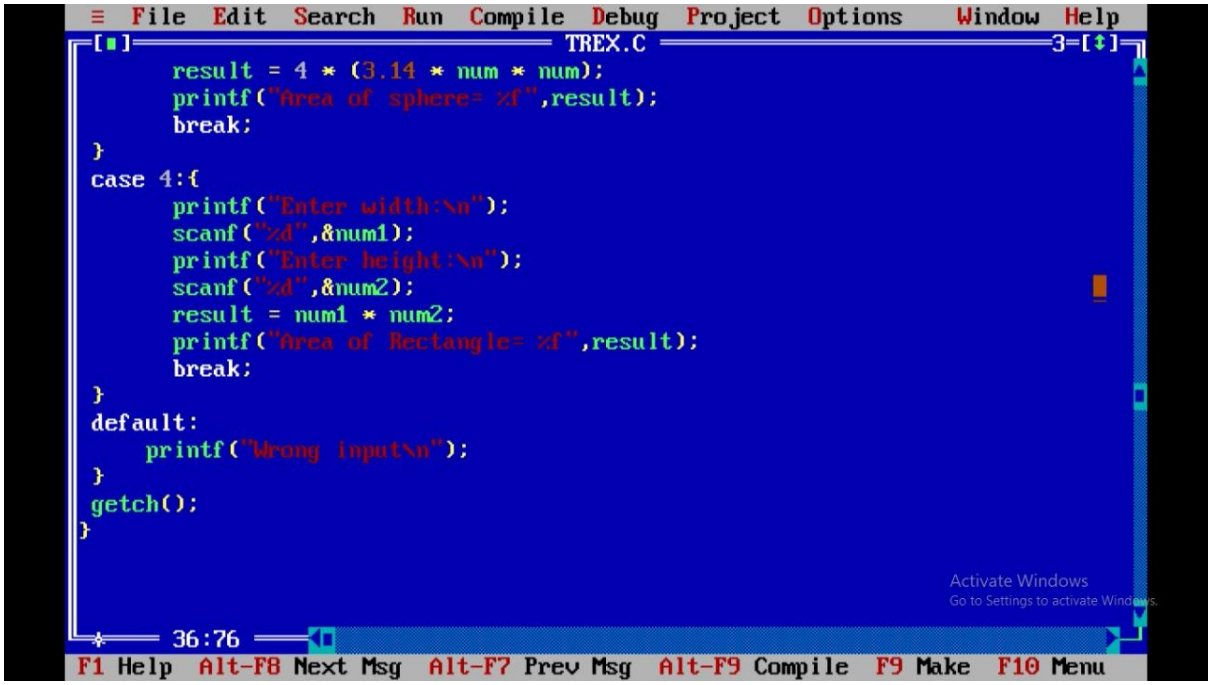
Name: Harsh Nair

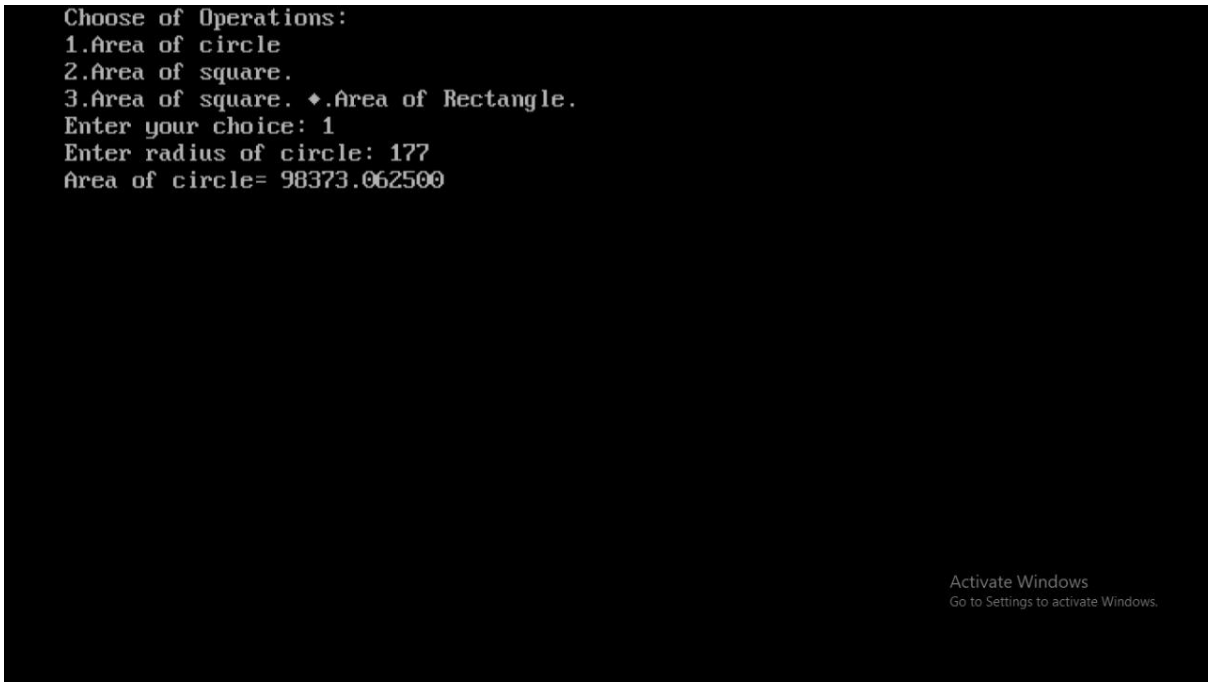
Roll No: FCS2122074

PWC Practical 1&2






File Edit Search Run Compile Debug Project Options Window Help
TREX.C
result = 4 * (3.14 * num * num);
printf("Area of sphere= %f",result);
break;
}
case 4:{
printf("Enter width:\n");
scanf("%d",&num1);
printf("Enter height:\n");
scanf("%d",&num2);
result = num1 * num2;
printf("Area of Rectangle= %f",result);
break;
}
default:
printf("Wrong input\n");
}
getch();
}
Activate Windows
Go to Settings to activate Windows.
36:76
F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu


Choose of Operations:
1.Area of circle
2.Area of square.
3.Area of square. ♦.Area of Rectangle.
Enter your choice: 1
Enter radius of circle: 177
Area of circle= 98373.062500
Activate Windows
Go to Settings to activate Windows.

```
Choose of Operations:
1.Area of circle
2.Area of square.
3.Area of square. ♦.Area of Rectangle.
Enter your choice: 2
Enter the side of square: 728
Area =5696.000000_
```



```
Choose of Operations:
1.Area of circle
2.Area of square.
3.Area of square. ♦.Area of Rectangle.
Enter your choice: 3
Enter the radius of sphere: 278
Area =-10164.000000
```

Name: Harsh Nair

Roll No: FCS2122074

Practical 3

Input:

Aim- Programs on decision statements.

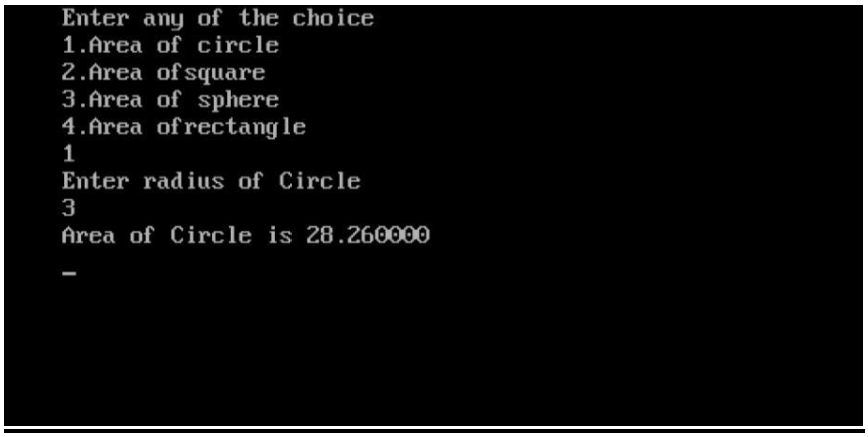
Source code: -

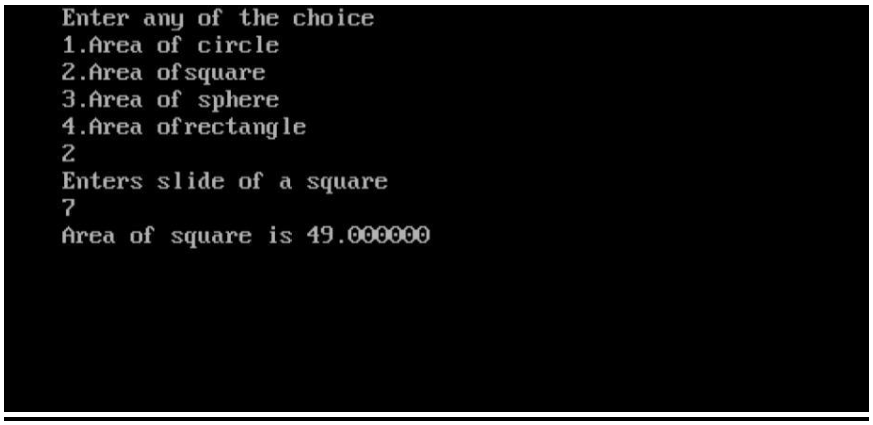
```
PRAX3.C
#include<stdio.h>
#include<math.h>
void main()
{
int choice;
clrscr();
printf("Enter any of the choice\n1.Area of circle\n2.Area ofsquare\n3.Area of
scanf("%d",&choice);
switch(choice)
{
case 1:
{
int r;
float pi = 3.14,a;
printf("Enter radius of Circle\n");
scanf("%d",&r);
a=pi*r*r;
printf("Area of Circle is %\n",a);
break;
}
```

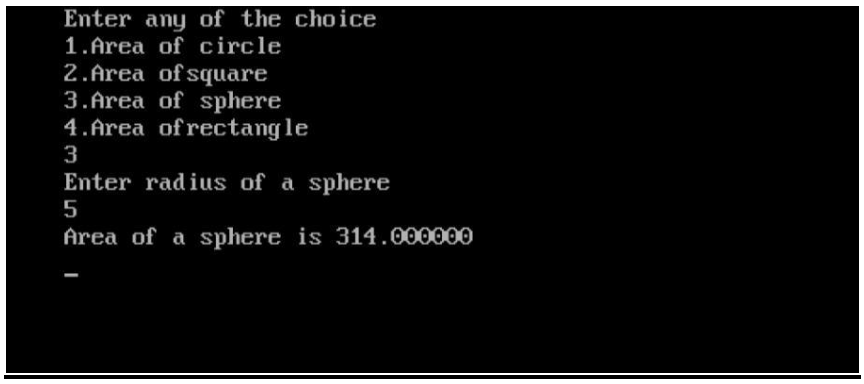
```
PRAX3.C
case 2:
{float area,side;
printf("Enters slide of a square\n");
scanf("%f",&side);
area=side*side;
printf("Area of square is %f\n",area);
break;
}
case 3:
{
float radius,pi=3.14,area;
printf("Enter radius of a sphere\n");
scanf("%f",&radius);
area=4*pi*(radius*radius);
printf("Area of a sphere is %f\n",area);
break;
}
case 4:
{
float l,b,a;
printf("Enter length and breadth of a rectangle\n");
41:8
```

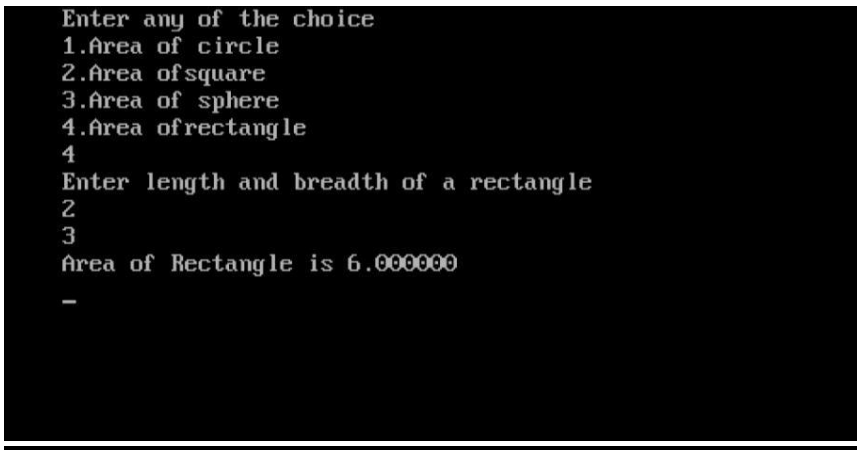
```
{
float l,b,a;
printf("Enter length and breadth of a rectangle\n");
scanf("%f%f",&l,&b);
a=(l*b);
printf("Area of Rectangle is %f\n",a);
break;
}
case 5:
{
printf("See you soon\n");
exit(0);
}
default:
printf("Invalid number\n");
}
getch();
}
56:53
```

Output:


Enter any of the choice
1.Area of circle
2.Area ofsquare
3.Area of sphere
4.Area ofrectangle
1
Enter radius of Circle
3
Area of Circle is 28.260000


Enter any of the choice
1.Area of circle
2.Area ofsquare
3.Area of sphere
4.Area ofrectangle
2
Enters slide of a square
7
Area of square is 49.000000


Enter any of the choice
1.Area of circle
2.Area ofsquare
3.Area of sphere
4.Area ofrectangle
3
Enter radius of a sphere
5
Area of a sphere is 314.000000


Enter any of the choice
1.Area of circle
2.Area ofsquare
3.Area of sphere
4.Area ofrectangle
4
Enter length and breadth of a rectangle
2
3
Area of Rectangle is 6.000000

Practical 4

Aim: Programs on looping

Practical No.4a

Write a program on **number palindrome** demonstrating while loop

Source code: -

PALINDRO.C

```
void main()
{
 int n,reverse=0,temp;
 clrscr();
 printf("Enter your input");
 scanf("%d",&n);
 temp=n;
 while(temp!=0)
 {
  reverse=reverse*10;
  reverse=reverse+reverse%10;
  temp=temp/10;
 }
```

```
 if(n==reverse)
 {
  printf("%d is a pallindrome.\n",n);
 }
 else
 {
  printf("%d is not a palindrome.\n",n);
 }
 getch();
}
```

```
Enter the number: 777
The number you entered is an palindrome number
```

```
Enter the number:1234
The number you entered is not palindrome
```

Practical No.4b

Write a program on **Armstrong number** demonstrating while loop

Source code: -

```
[■]                                    ARMSTRON.C
void main()
{
 int num,sum=0,lasted,temp;
 clrscr();
 printf("Enter a number: ");
 scanf("%d",&num);
 temp=num;
 while(temp!=0)
 {
  lasted=temp%10;
  sum=sum+(lasted*lasted*lasted);
  temp=temp/10;
 }
```

```
if(sum==num)
{
 printf("%d is an Armstrong number \n",num);
}
else
{
 printf("%d is not an rmstrong number \n",num);
}
getch();
}
                                    23:8
```

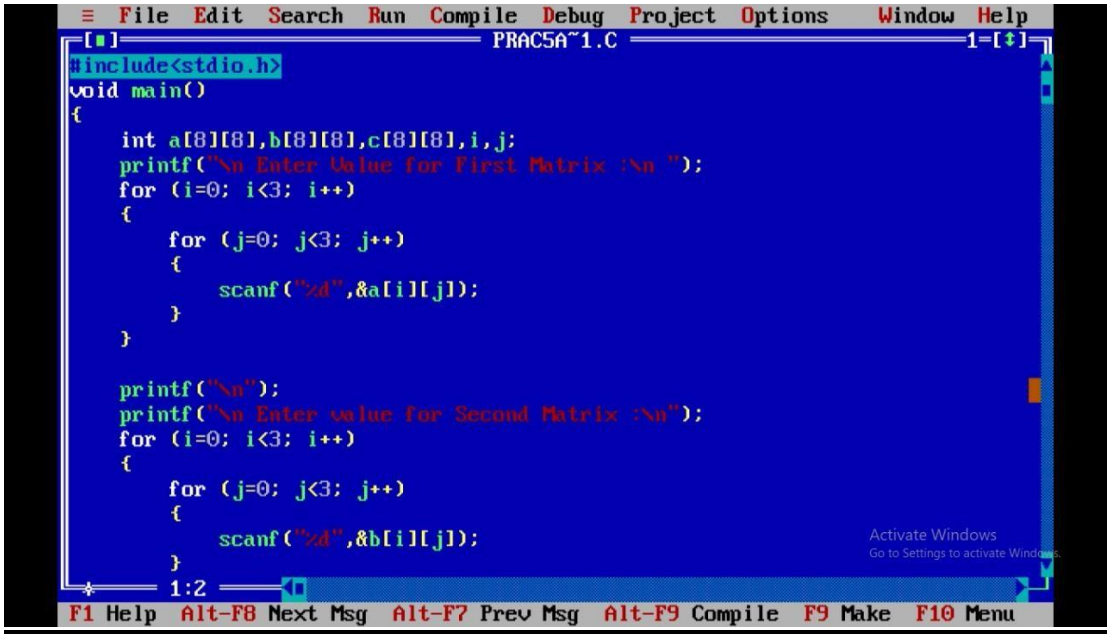
```
Enter a number: 153
153 is an Armstrong number
```

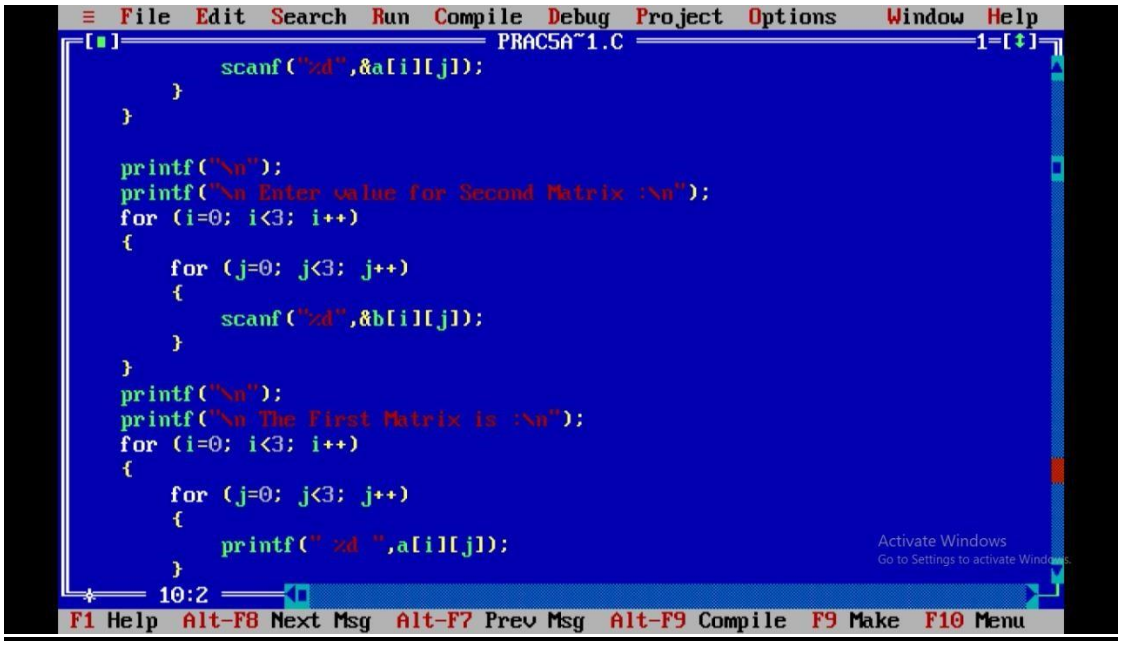
```
Enter a number: 1234
1234 is not an Amstrong number
_
```

PRACTICAL NO.5

Aim: Programs on arrays.

a] Write a program on Addition of 2 Matrix and





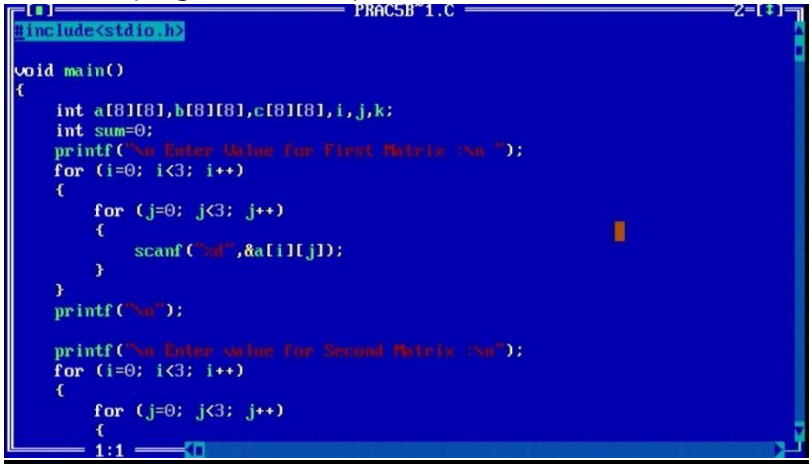
```
File  Edit  Search  Run  Compile  Debug  Project  Options  Window  Help
                        PRAC5A~1.C                              1=[↕]
            printf(" %d ",a[i][j]);
        }
        printf("\n");
    }
    printf("\n");
    printf("\n The second Matrix is :\n");
    for (i=0; i<3; i++)
    {
        for (j=0; j<3; j++)
        {
            printf(" %d ",a[i][j]);
        }
        printf("\n");
    }
    printf("\n");
    printf("\n Addition of two matrix \n");
    for (i=0; i<3; i++)
    {
        for (j=0; j<3; j++)
        {
            c[i][j]=a[i][j]+b[i][j];
                                                  Activate Windows
                                                  Go to Settings to activate Windows.
49:2
F1 Help  Alt-F8 Next Msg  Alt-F7 Prev Msg  Alt-F9 Compile  F9 Make  F10 Menu
```

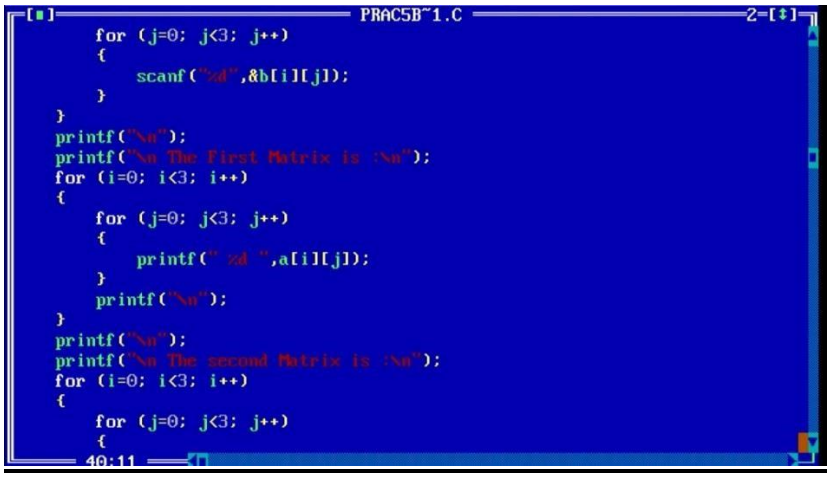
```
        {
            c[i][j]=a[i][j]+b[i][j];
            printf(" %d ",c[i][j]);
        }
        printf("\n");

    }
                                                  Activate Windows
                                                  Go to Settings to activate Windows.
}
56:2
```

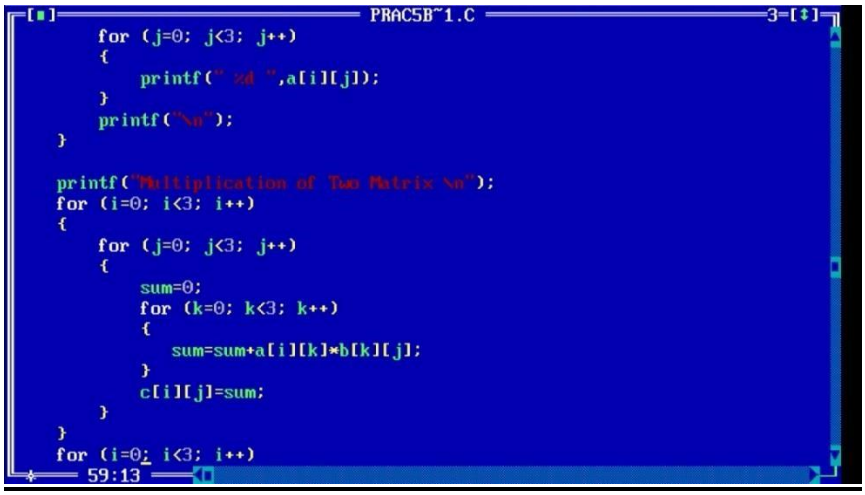
```
C:\TURBOC3\BIN>TC

 Enter Value for First Matrix :
 7 6 5
 2 8 6
 3 7 8


 Enter value for Second Matrix :
2 7 6
3 2 1
4 4 6
```

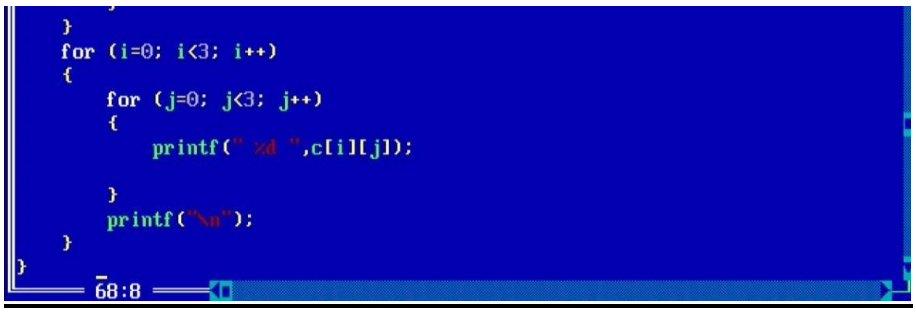
```
 Enter value for Second Matrix :
2 7 6
3 2 1
4 4 6


 The First Matrix is :
 7  6  5
 2  8  6
 3  7  8


 The second Matrix is :
 7  6  5
 2  8  6
 3  7  8


 Addition of two matrix
 9  13  11
 5  10  7
 7  11  14

 Enter Value for First Matrix :
```

b] Write a program on Multiplication of 2 Matrix









Name: Harsh Nair

Roll no: FCS2122074

PRACTICAL NO.6

Aim: Programs on functions.

Write a Switch Case having menu for options:

1|Find out maximum and minimum of some values using function (Take the size of array from user then ask for numbers in that array find minimum and maximum number from that set of array numbers) 2]Check perfect numbers using the function

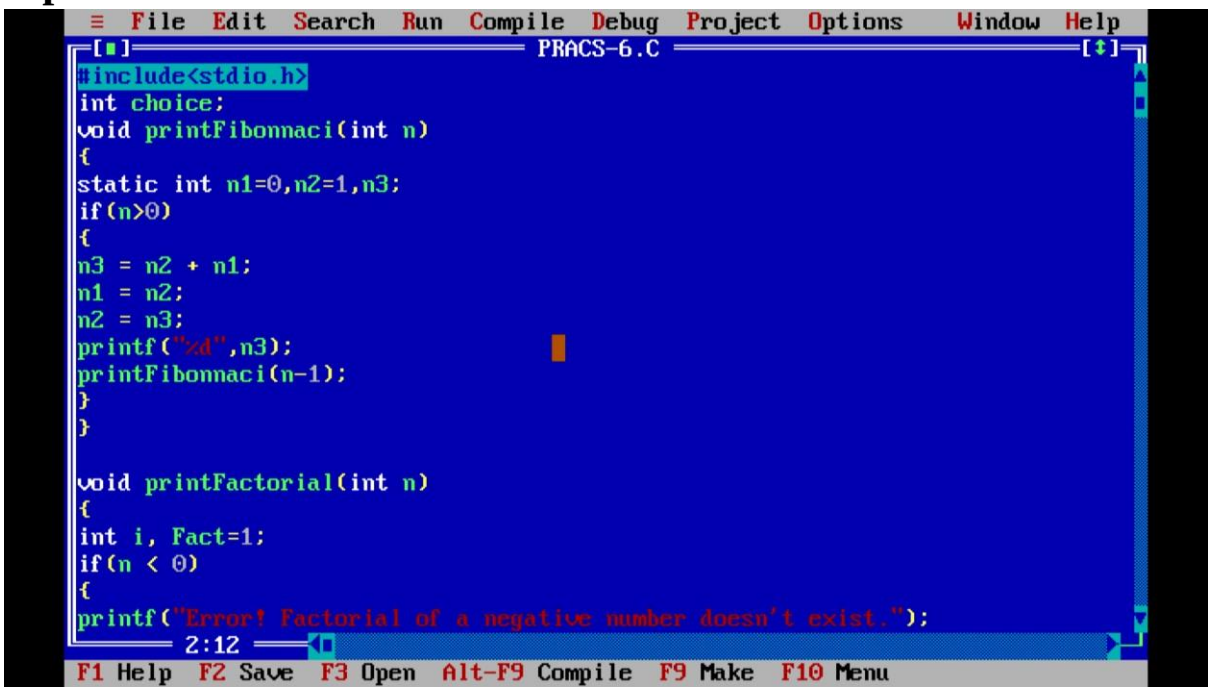
(Perfect number, a positive integer that is equal to the sum of its proper divisors.

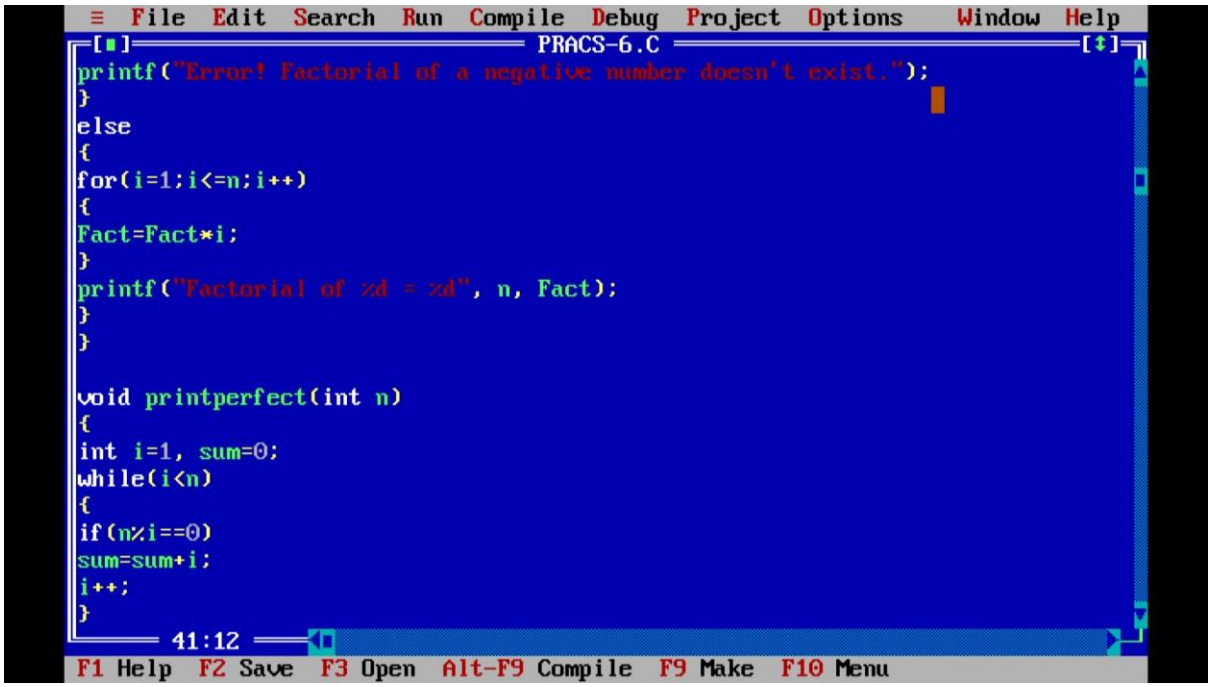
Eg. 6 is divisible by 1,2 and 3 if you add 1+2+3-6 and therefore 6 is a perfect number)

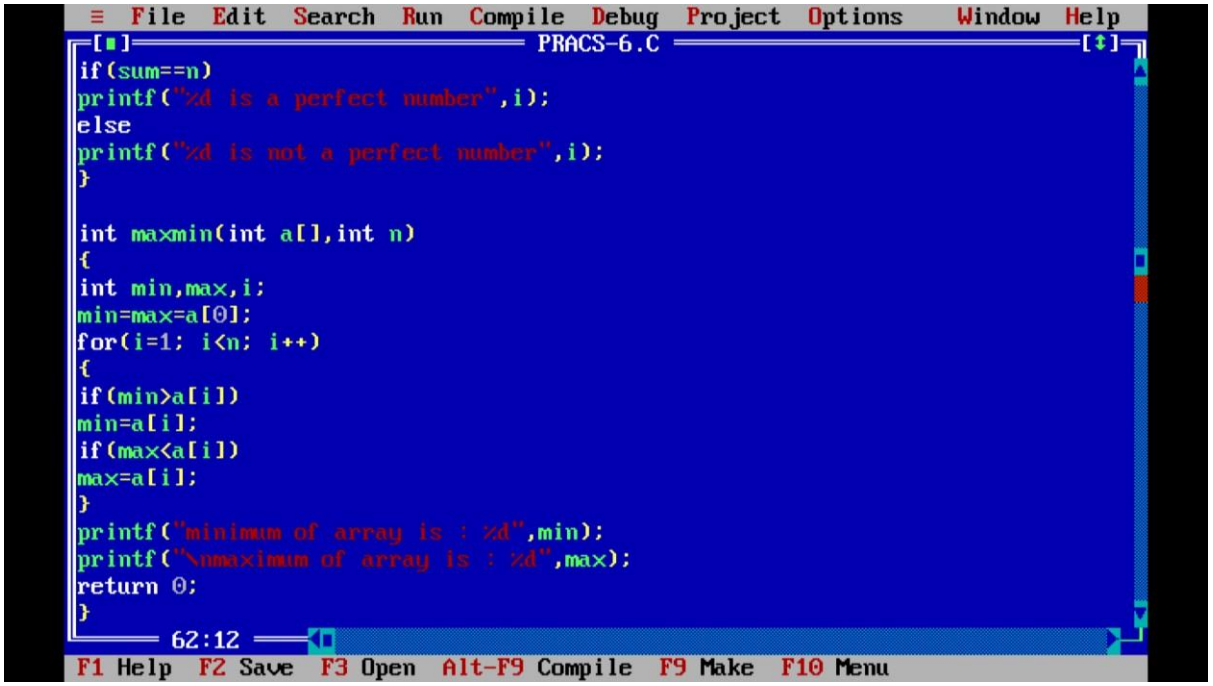
3]Find the Factorial of any number using the function.

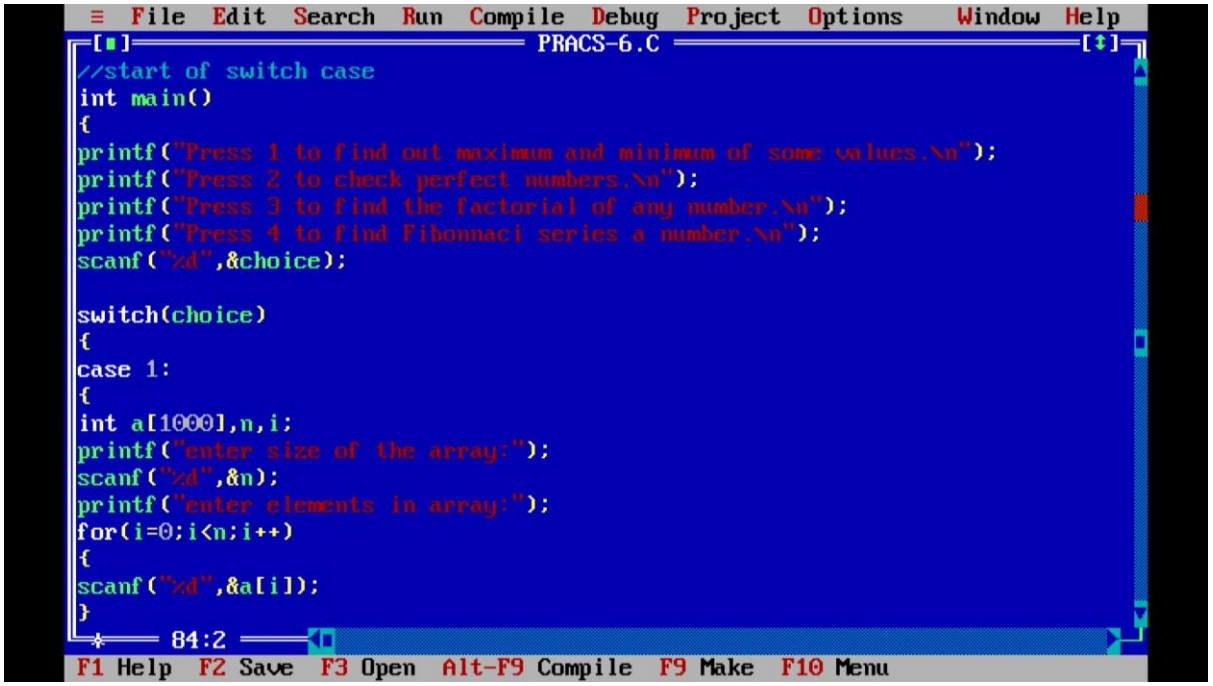
4]Fibonacci Scries using Recursion function */

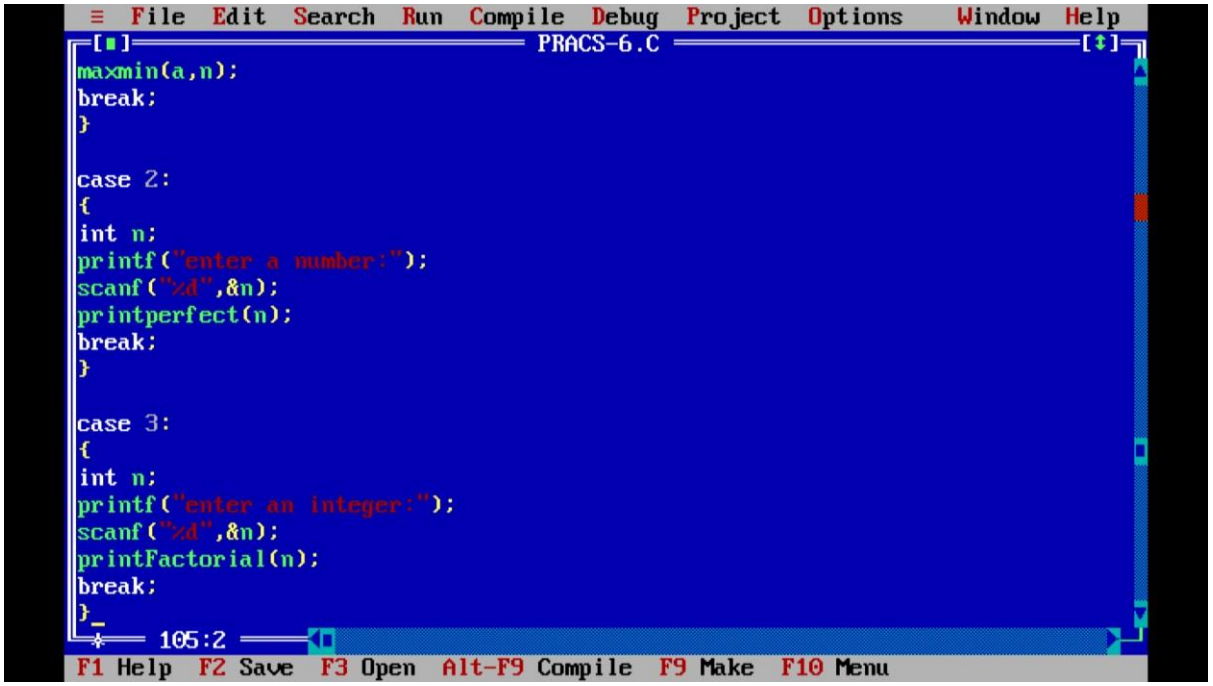
Input:

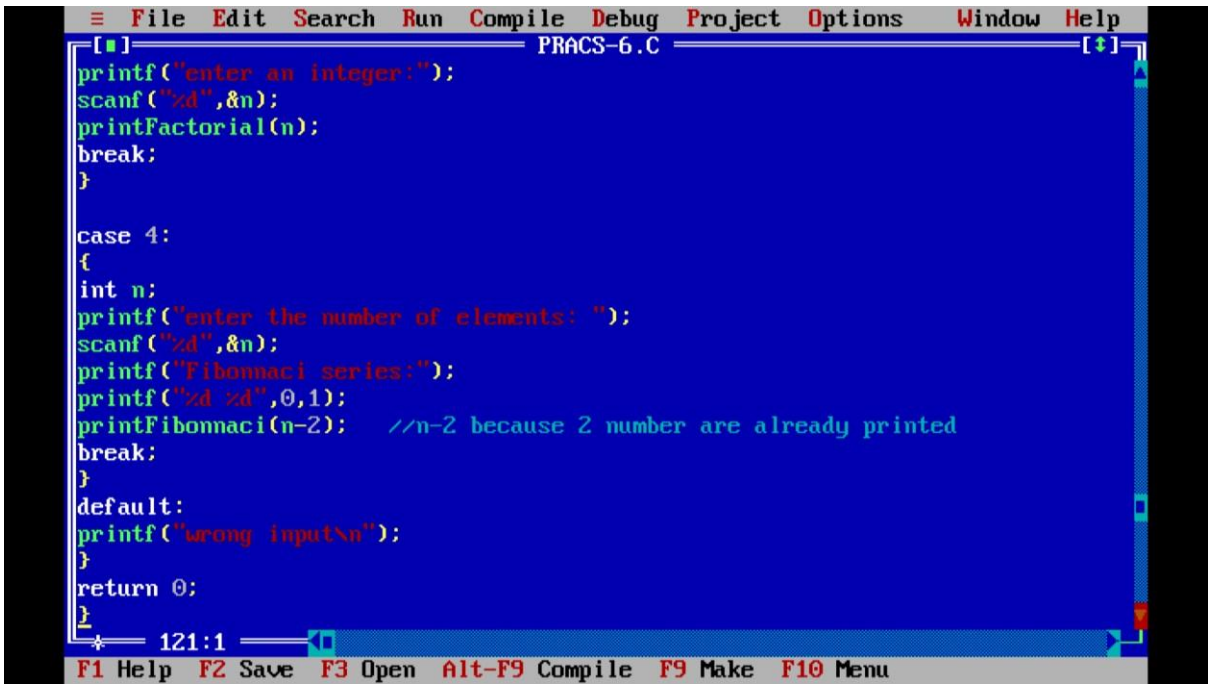

File Edit Search Run Compile Debug Project Options Window Help
PRACS-6.C
#include<stdio.h>
int choice;
void printFibonnaci(int n)
{
static int n1=0,n2=1,n3;
if(n>0)
{
n3 = n2 + n1;
n1 = n2;
n2 = n3;
printf("%d",n3);
printFibonnaci(n-1);
}
}
void printFactorial(int n)
{
int i, Fact=1;
if(n < 0)
{
printf("Error! Factorial of a negative number doesn't exist.");
2:12
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu


File Edit Search Run Compile Debug Project Options Window Help
PRACS-6.C
printf("Error! Factorial of a negative number doesn't exist.");
}
else
{
for(i=1;i<=n;i++)
{
Fact=Fact*i;
}
printf("Factorial of %d = %d", n, Fact);
}
}
void printperfect(int n)
{
int i=1, sum=0;
while(i<n)
{
if(n%i==0)
sum=sum+i;
i++;
}
41:12
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu


File Edit Search Run Compile Debug Project Options Window Help
PRACS-6.C
if(sum==n)
printf("%d is a perfect number",i);
else
printf("%d is not a perfect number",i);
}
int maxmin(int a[],int n)
{
int min,max,i;
min=max=a[0];
for(i=1; i<n; i++)
{
if(min>a[i])
min=a[i];
if(max<a[i])
max=a[i];
}
printf("minimum of array is : %d",min);
printf("\nmaximum of array is : %d",max);
return 0;
}
62:12
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu

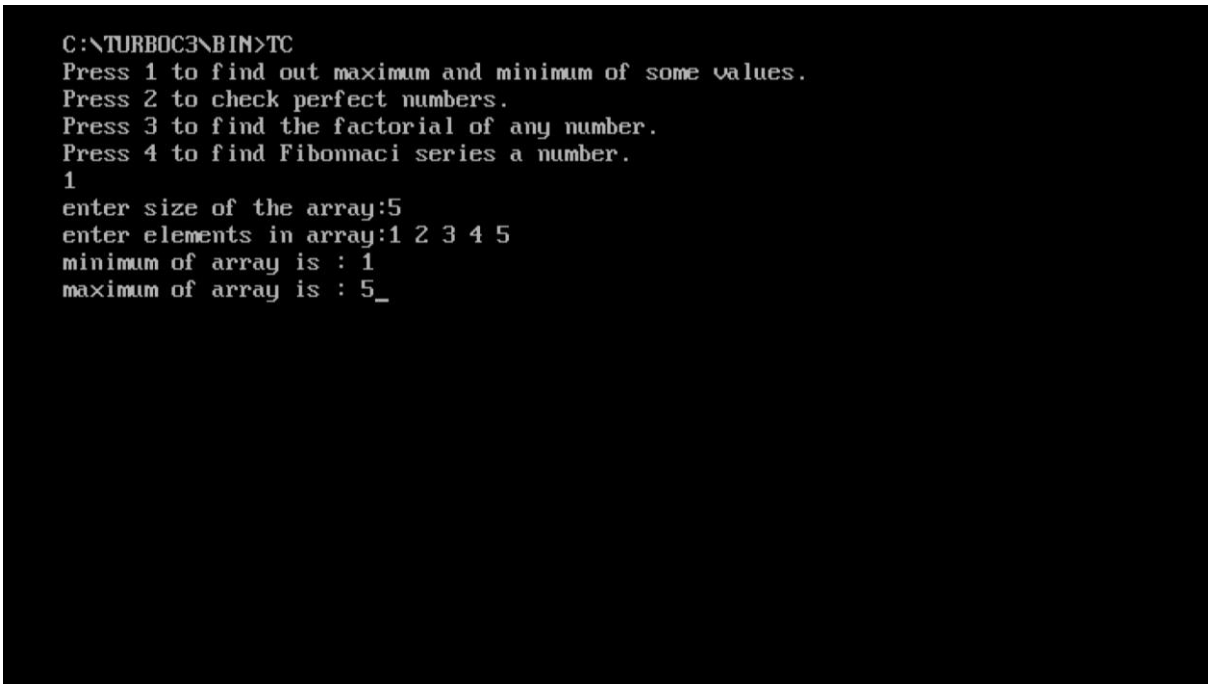

File Edit Search Run Compile Debug Project Options Window Help
PRACS-6.C
//start of switch case
int main()
{
printf("Press 1 to find out maximum and minimum of some values.\n");
printf("Press 2 to check perfect numbers.\n");
printf("Press 3 to find the factorial of any number.\n");
printf("Press 4 to find Fibonnaci series a number.\n");
scanf("%d",&choice);
switch(choice)
{
case 1:
{
int a[1000],n,i;
printf("enter size of the array:");
scanf("%d",&n);
printf("enter elements in array:");
for(i=0;i<n;i++)
{
scanf("%d",&a[i]);
}
84:2
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu


File Edit Search Run Compile Debug Project Options Window Help
PRACS-6.C
maxmin(a,n);
break;
}
case 2:
{
int n;
printf("enter a number:");
scanf("%d",&n);
printperfect(n);
break;
}
case 3:
{
int n;
printf("enter an integer:");
scanf("%d",&n);
printFactorial(n);
break;
}
105:2
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu

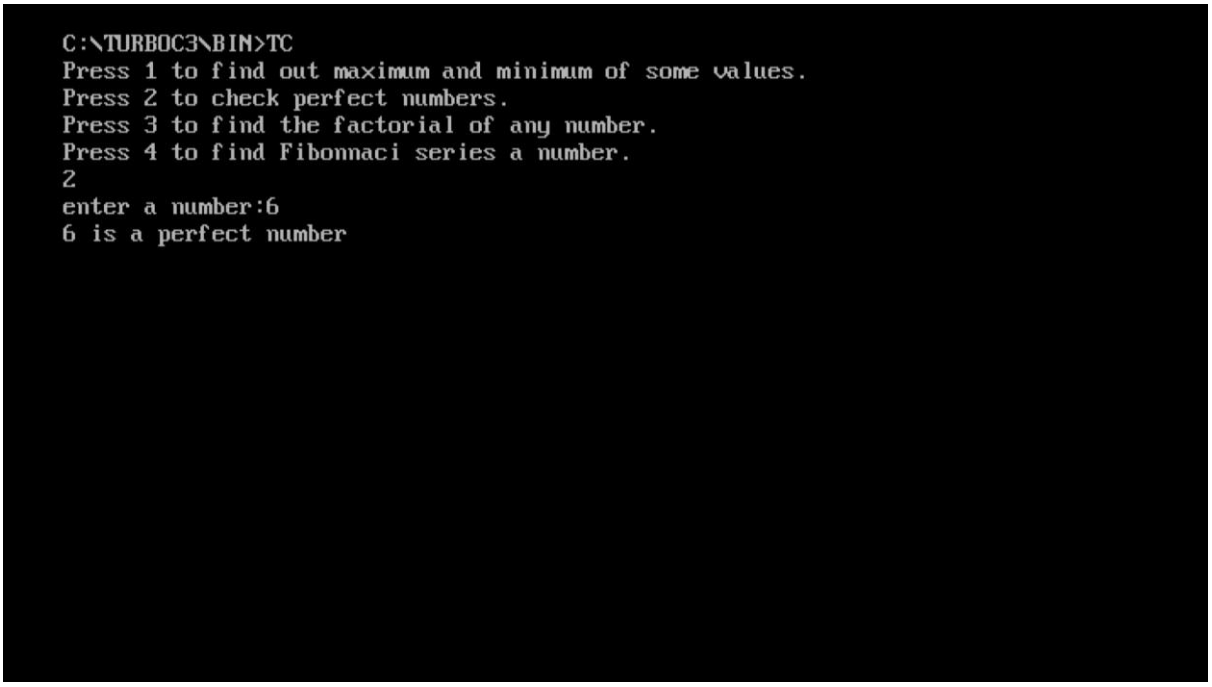

File Edit Search Run Compile Debug Project Options Window Help
PRACS-6.C
printf("enter an integer:");
scanf("%d",&n);
printFactorial(n);
break;
}
case 4:
{
int n;
printf("enter the number of elements: ");
scanf("%d",&n);
printf("Fibonnaci series:");
printf("%d %d",0,1);
printFibonnaci(n-2); //n-2 because 2 number are already printed
break;
}
default:
printf("wrong input\n");
}
return 0;
}
121:1
F1 Help F2 Save F3 Open Alt-F9 Compile F9 Make F10 Menu

Output:

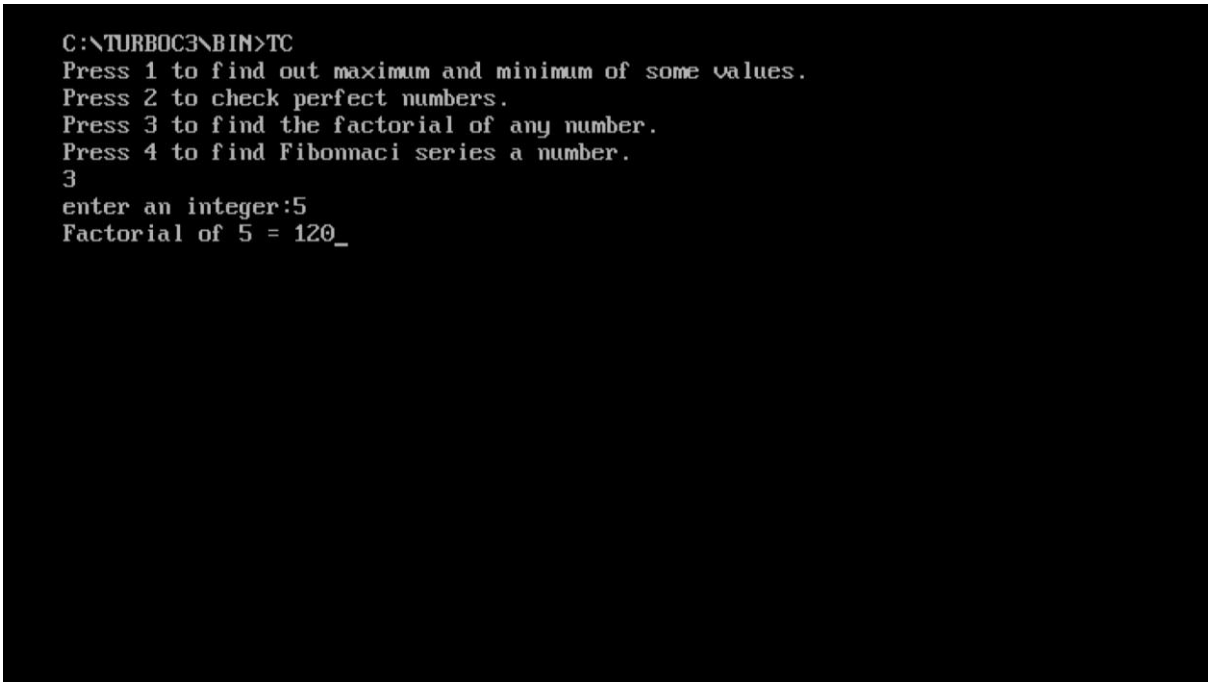
A


C:\TURBOC3\BIN>TC
Press 1 to find out maximum and minimum of some values.
Press 2 to check perfect numbers.
Press 3 to find the factorial of any number.
Press 4 to find Fibonnaci series a number.
1
enter size of the array:5
enter elements in array:1 2 3 4 5
minimum of array is : 1
maximum of array is : 5_

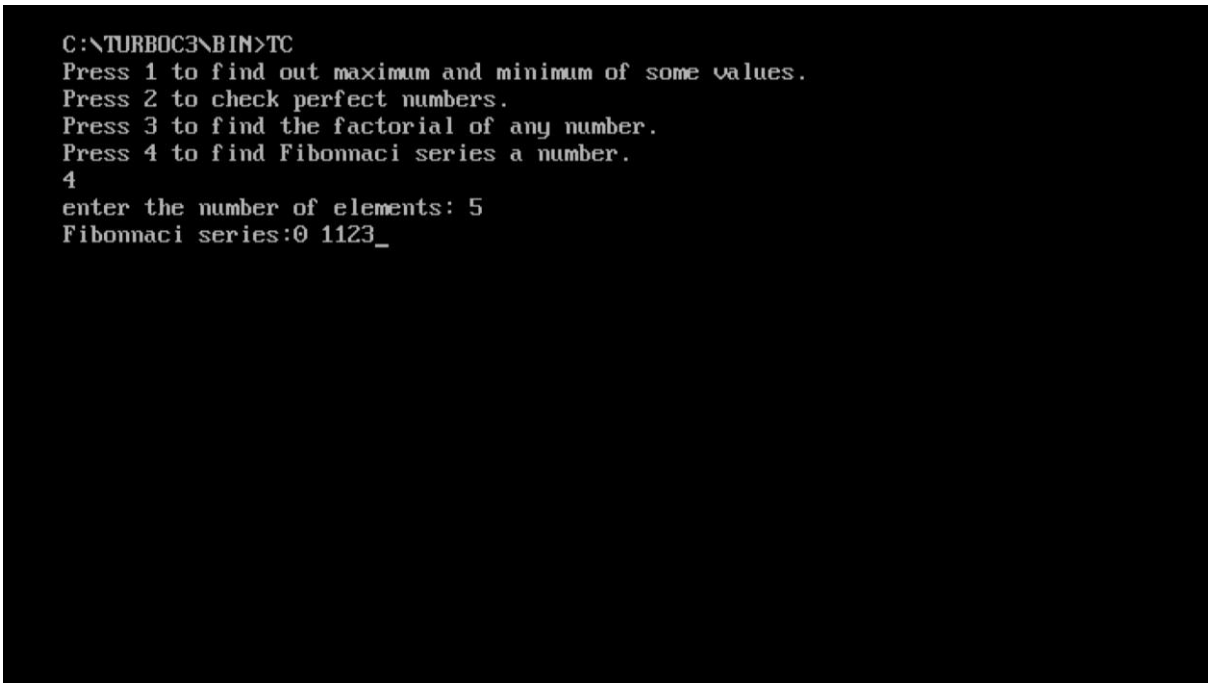
B


C:\TURBOC3\BIN>TC
Press 1 to find out maximum and minimum of some values.
Press 2 to check perfect numbers.
Press 3 to find the factorial of any number.
Press 4 to find Fibonnaci series a number.
2
enter a number:6
6 is a perfect number

C


C:\TURBOC3\BIN>TC
Press 1 to find out maximum and minimum of some values.
Press 2 to check perfect numbers.
Press 3 to find the factorial of any number.
Press 4 to find Fibonnaci series a number.
3
enter an integer:5
Factorial of 5 = 120_

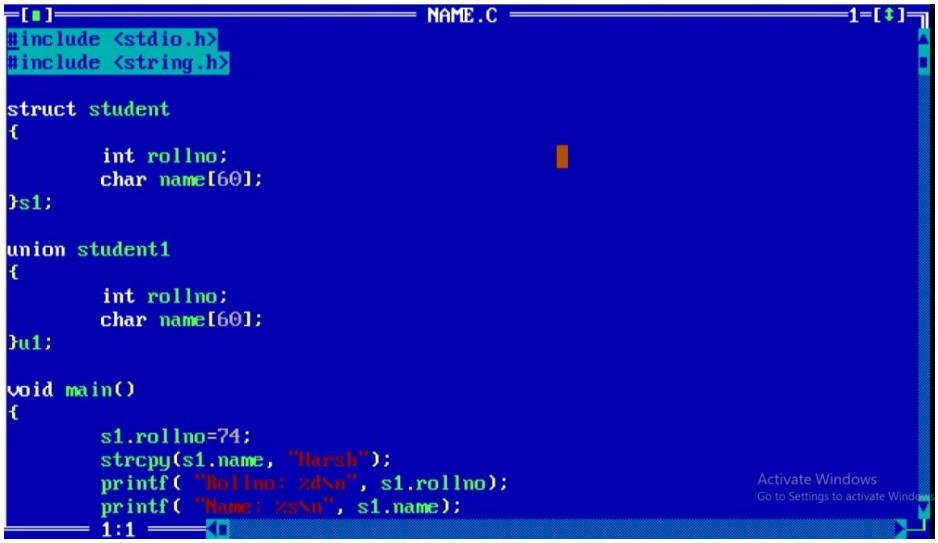
D

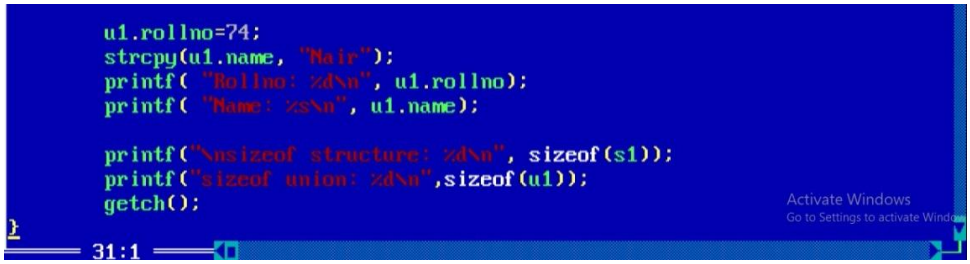

C:\TURBOC3\BIN>TC
Press 1 to find out maximum and minimum of some values.
Press 2 to check perfect numbers.
Press 3 to find the factorial of any number.
Press 4 to find Fibonnaci series a number.
4
enter the number of elements: 5
Fibonnaci series:0 1123_

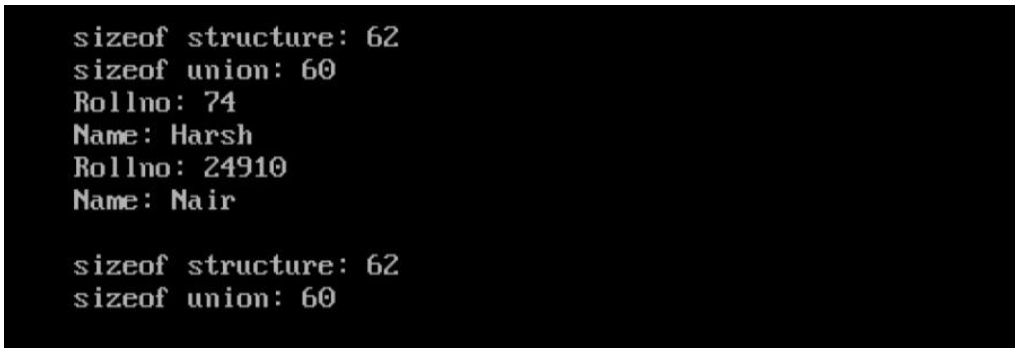
Practical 7

PRACTICAL NO.7

Aim: Programs on structures and unions.







Practical 8

PRACTICAL NO.8
Aim: Programs on pointers.

PRAC8.C

```
#include<stdio.h>
int main()
{
 int num1,num2,t;
 int *a,*b;
 a=& num1;
 b=& num2;
 printf("Enter value of num1: ");
 scanf("%d", &num1);
 printf("Enter value of num2: ");
 scanf("%d", &num2);

 //print values before swapping
 printf("Before Swapping: num1=%d, num2=%d\n",*a,*b);
 printf("Address before swapping of num1 %u\n and num2 %u\n",a,b);
 t = num1;
 num1 = num2;
 num2 = t ;
 a=& num1;
 b=& num2;
 //print values after swapping
```

1:1

```
 //print values after swapping
 printf("Ater Swapping: num1=%d, num2=%d\n",*a,*b);
 printf("Address after swapping of num1 %u\n and num2 %u\n",a,b);
 return(0);
}
```

25:32

```
C:\TURBOC3\BIN>TC
Enter value of num1: 7
Enter value of num2: 8
Before Swapping: num1=7, num2=8
Address before swapping of num1 65524
 and num2 65522
Ater Swapping: num1=8, num2=7
Address after swapping of num1 65524
 and num2 65522
```

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PWC Practical 9 & 10

Practical 9

Aim: Programs on string manipulations.

Input:

```
STRING.C
#include <stdio.h>
#include<string.h>
void main()
{
 char str1[50], str2[50], str3[50]=" ";
 int len,mid,tmp, i;
 printf("Enter string 1: ");
 gets(str1);
 printf("Enter string 2: ");
 gets(str2);

 //comparison
  if (strcmp(str1, str2) == 0) {
  printf("Both are same.\n");
  }
  else {
  printf("Both are different.\n");
  }
 //concatination
 strcat(str3, str1);
 strcat(str3, " ");
1:1
```

```
STRING.C
  }
 //concatination
 strcat(str3, str1);
 strcat(str3, " ");
 strcat(str3, str2);
 printf("Concatenated string: %s\n", str3);
 //reverse
 len = strlen(str3); //12
 mid = len/2; //6

 for (i= 0; i < mid; i++) {
   tmp = str3[len - 1 - i];
   str3[len - 1 - i] = str3[i];
   str3[i] = tmp;

 }
 //output
 printf("Reversed string: %s\n", str3);
 printf("End of code\n");
 getch();
}
38:19
```

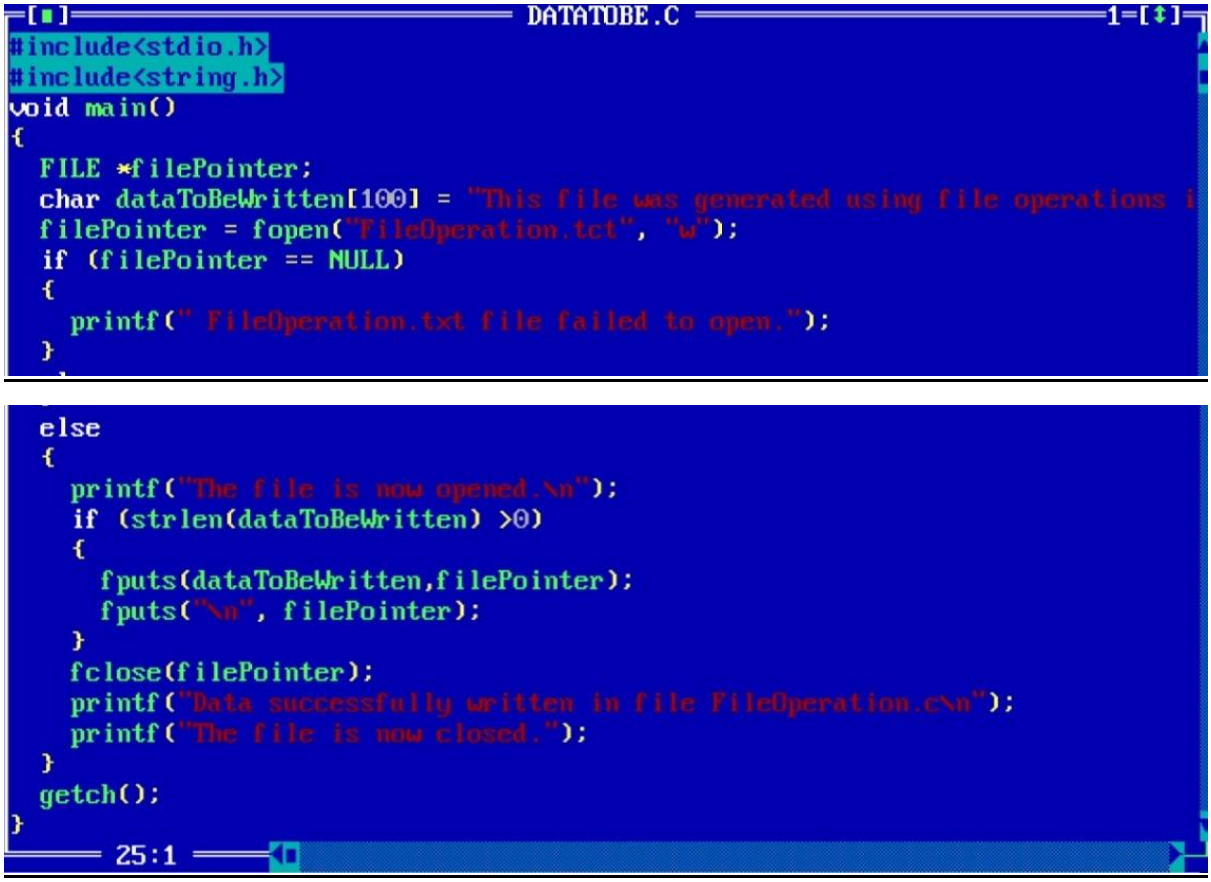
Output

```
C:\TURBOC3\BIN>TC
Enter string 1: 7 3 4
Enter string 2: 2 2 8
Both are different.
Concatenated string:  7 3 4 2 2 8
Reversed string: 8 2 2 4 3 7
End of code
_
```

Practical 10

Aim: Programs on basic file operations.

Input:



Output: