



BUBT

Committed to Academic Excellence

BANGLADESH UNIVERSITY OF
BUSINESS AND TECHNOLOGY

Subject Name :CSE
Subject code :102

Lab report-02

Submitted By	Submitted to
<p>Name: Md. Mehedi Hasan ID NO: 21225103334 Department: CSE Section: 8 Intake: 49 Bangladesh University of business and Technology</p>	<p>MD. Mahbub-Or-Rashid <i>Lecturer</i> <i>Department of CSE</i> <i>Bangladesh University of Business And Technology</i></p>

S.L	Problem Name
01	C "Hello, World!" Program
02	C Program to Print an Integer,float,double (Entered by the User)
03	C program to find the Sizeof int,float,double,character.
04	C program to find the ASCII value of character.
05	C program to convert Decimal to Octal,Octal to Decimal.
06	C program to convert Decimal to Hexa-decimal,Hexa-decimal to Decimal.
07	C program to find Sum and Average of 3 numbers.
08	C program to perform addition, subtraction, multiplication,remainder and division of two numbers.
09	C program to find Area of a Triangle.
10	C program to find Area of a Triangle given Three Sides.
11	C program to find Area of a Rectangle.
12	C program to find Area of a Circle
13	C program to convert Celsius temperature To Fahrenheit temperature, convert Fahrenheit temperature To Celsius temperature.
14	C program on how to swap Two numbers with temporary variables.
15	C program of X raised to the power (X^Y).
16	C program to check whether a number is positive or negative.
17	C program to find the Largest number among two numbers.
18	C program to check whether a number is Even or Odd.
19	C program to check whether a year is Leap year or not
20	C program to check whether a letter is Capital or Small.
21	C program to check whether a letter is Vowel or Consonant.(using switch operator).
22	C program that read a digit and display its spelling.(using switch operator)
23	C program to accept the height of a person (in cm) and categorize the person according to their height.
24	C program to read any Month Number in integer and display Month name with days .
25	C program to accept a coordinate point in a XY coordinate system and determine in which quadrant the coordinate point lies.
26	C program to read the age of a candidate and determine whether it is eligible for casting his/her own vote.
27	C program to print even numbers between 1-n number (using loop).
28	C program to display Multiplication Table of a given integer
29	C program to find Factorial of a number.
30	C program to find the GCD & LCM of two integers.
31	C program that read any positive integer and display Sum Of Digits.
32	C program that Reverse an integer number.

33	C program that Reverse an integer number.
34	C program to check an integer number if it is Palindrome Number or not.
35	C program to check the given number is Armstrong or not.
36	C program to check the given number is Strong Number or not.
37	C program to find the Maximum between two numbers using Function.
38	C program to find Factorial of a given number using Function.
39	C program to display Fibonacci Series using Function.
40	C program to display Sum of Natural Numbers.
41	C program to display Sum of Even Numbers between 2-10.
42	C program to display Sum of Odd Numbers between 1-10.
43	C program to display the addition of two matrix
44	C program to display the Fibonacci Series (using array).
45	C program that can take some numbers and display maximum and minimum (using array).
46	C program to calculate the sum & average of given numbers and values of the given number from the user.
47	C program to find the length of a string using strlen() function.
48	C program that input a name and display the string and display string character wise.
49	C program to copy string using strcpy() function.
50	C program of concatenation string by using strcat() function.
51	C program to compare strings whether they are equal or not by using strcmp() function.
52	C program to reverse a string by using strrev() function.
53	C program to swap two strings.
54	C program to count the number of Vowels,Consonants,Digits & Letter.

Problem No:1

Problem Name: **C "Hello, World!" Program**

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

```
{
    printf("Hello world!\n");

    return 0;

}
```

Output:

The screenshot shows the Code::Blocks IDE interface. On the left, the Project Manager window displays a workspace named 'p-1' with a single source file 'main.c'. The code in 'main.c' is:

```

#include <stdio.h>
#include <cs50.h>
int main()
{
    printf("Hello world!");
    return 0;
}

```

The main editor window shows the same code. To the right, a terminal window titled 'D:\CSE Assignment\p-1\bin\Debug\p-1.exe' displays the output:

```

Hello world!
Process returned 0 (0x0)   execution time : 0.064 s
Press any key to continue.

```

The taskbar at the bottom shows the path 'D:\CSE Assignment\p-1\main.c' and the system status '86°F Cloudy'.

Problem No:02

Problem Name: C Program to Print an Integer,float,double (Entered by the User)

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```
    int number;
```

```
    printf("Enter integer number=");
```

```
scanf("%d",&number);

float digit;

printf("Enter Float Number=");

scanf("%f",&digit);

double dbl;

printf("Enter Double Number=");

scanf("%lf",&dbl);

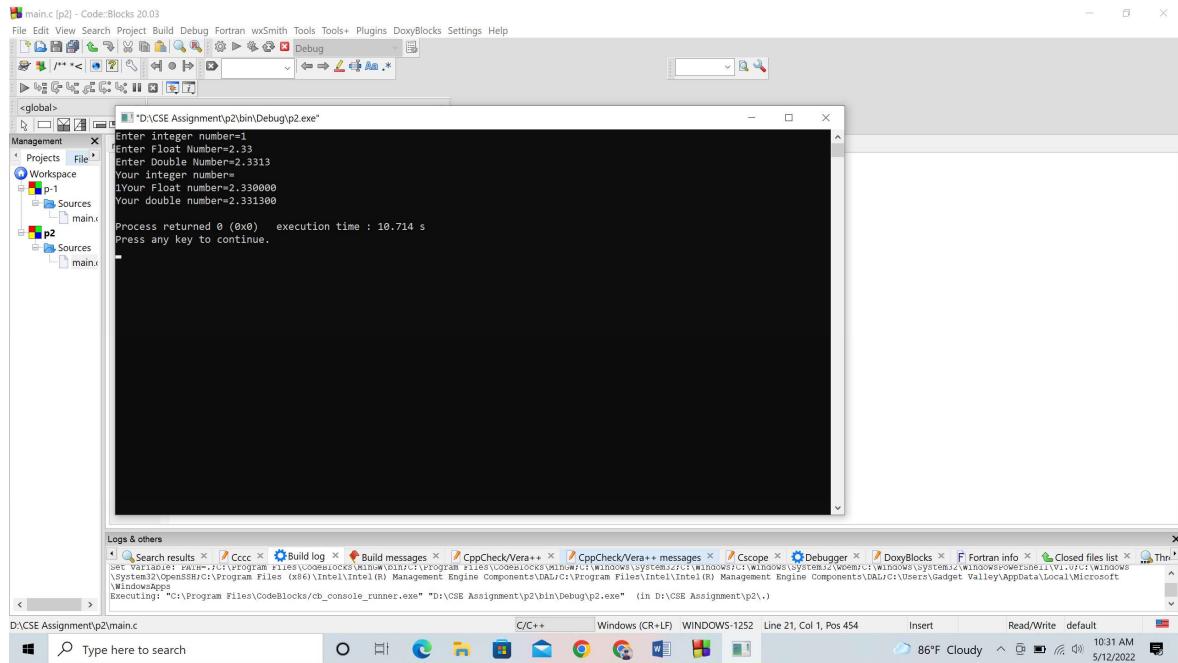
printf("Your integer number=\n%d",number);

printf("Your Float number=%f\n",digit);

printf("Your double number=%lf\n",dbl);

return 0;
```

Output:



Problem No:03

Problem Name: C program to find the Sizeof int,float,double,charater.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    int inttype;

    float floattype;

    double doubletype;

    char chartype;

    printf("Size of int: %zu bytes\n", sizeof(inttype));

    printf("Size of float: %zu bytes\n", sizeof(floattype));

    printf("Size of doule %zu bytes\n", sizeof(doubletype));

    printf("Size of char %zu bytes\n", sizeof(chartype));

    return 0;

}
```

Output:

The screenshot shows the Code::Blocks 20.03 IDE interface. The top menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, Doxygen, Settings, and Help. The main window displays the code in 'main.c' and its output in the terminal window. The terminal output shows the sizes of various data types: int (4 bytes), float (4 bytes), double (8 bytes), and char (1 byte). The execution time is listed as 0.024 s.

```
main.c [p3] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
File Project Workspace p3-1 Sources main.c p2 Sources main.c p3 Sources main.c
Management X main.c X main.c X
1 #include <stdio.h>
2 #include <stdlib.h>
3
4 int main()
5 {
6     int inttype;
7     float floattype;
8     double doubletype;
9     char chartype;
10
11     printf("Size of int: %zu bytes\n", sizeof(inttype));
12
13     printf("Size of float: %zu bytes\n", sizeof(floattype));
14
15     printf("Size of doule %zu bytes\n", sizeof(doubletype));
16
17     printf("Size of char %zu bytes\n", sizeof(chartype));
18
19     return 0;
20 }
```

```
Size of int: 4 bytes
Size of float: 4 bytes
Size of doule 8 bytes
Size of char 1 bytes
Process returned 0 (0x0)   execution time : 0.024 s
Press any key to continue.
```

Logs & others

```
Search results Ccc CppCheckVera++ CppCheckVera++ messages Cscope Debugger Doxygen Fortran info Closed files list
Set Variable! PATH=.;C:\Program Files\Windows Kits\10\bin\10.0.19041.0\;C:\Program Files\Windows Kits\10\bin\10.0.19041.0\um\;C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem\;C:\Windows\System32\Threading\;C:\Windows\System32\OpenSSH\;C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\DAL\;C:\Program Files\Intel\Intel(R) Management Engine Components\DAL\;C:\Users\Gadget Valley\AppData\Local\Microsoft\Windows\DeliveryOptimization;C:\Program Files\CodeBlocks\cb_console_runner.exe "D:\CSE Assignment\p3\bin\Debug\p3.exe" (in D:\CSE Assignment\p3\)
Execution: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "D:\CSE Assignment\p3\bin\Debug\p3.exe" (in D:\CSE Assignment\p3\)
```

D:\CSE Assignment\p3\main.c C++ Windows (CR+LF) WINDOWS-1252 Line 16, Col 1, Pos 401 Insert Read/Write default
Type here to search 84°F Cloudy 10:40 AM 5/12/2022

Problem No:04

Problem Name: C program to find the ASCII value of character.Solution.

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    char mehedi;

    printf("Enter a character=");

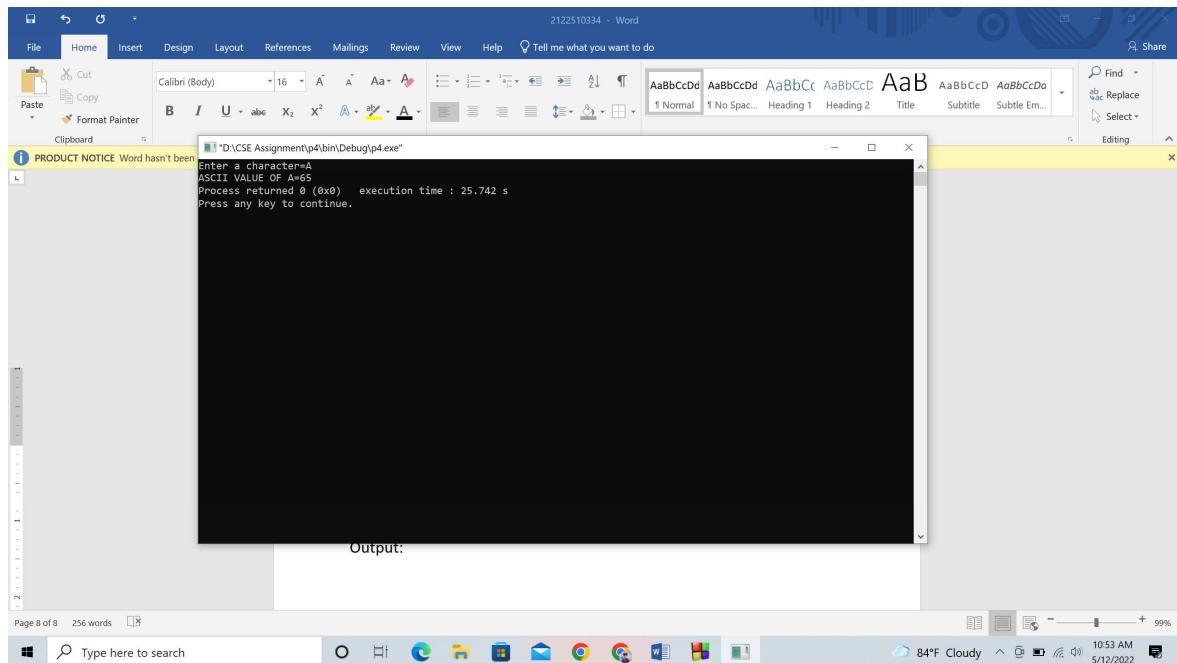
    scanf("%c",&mehedi);

    printf("ASCII VALUE OF %c=%d",mehedi,mehedi);

    return 0;

}
```

Output:



Problem No:05

Problem Name: C program to convert Decimal to Octal,Octal to Decimal.

Solution:

Input:

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

int main()
{
    int n;
    printf("Enter decimal Number=");
    scanf("%d",&n);
    printf("Your Octal value=%o\n",n);

    int o;
    printf("Enter Octal Number=");
    scanf("%o",&o);
    printf("Your decimal value=%d\n",o);

    return 0;
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays the output of a C program named 'main.c'. The output window shows the following text:

```
1 D:\CSE Assignment\p5\bin\Debug\p5.exe
2 Enter decimal Number=34
3 Your Octal value=42
4 Enter Octal Number=42
5 Your decimal value=34
6
7 Process returned 0 (0x0) execution time : 7.325 s
8 Press any key to continue.
9
10
11
12
13
14
15
16
```

The IDE's status bar at the bottom indicates the file path 'D:\CSE Assignment\p5\main.c', the language 'C/C++', the build configuration 'Windows (CR+L)', the line number 'Line 16, Col 1, Pos 300', and the date/time '5/12/2022 11:02 AM'.

Problem No:06

Problem Name: C program to convert Decimal to Hexa-decimal,Hexa-decimal to Decimal.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    int n;

    printf("Enter decimal Number=");

    scanf("%d",&n);

    printf("Your Octal value=%x\n",n);

    int x;

    printf("Enter Octal Number=");

    scanf("%x",&x);
```

```
printf("Your decimal value=%d\n",x);  
  
return 0;  
  
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. The left pane displays the project management window with several projects listed under 'Workspace'. The main workspace shows a C file named 'main.c' with the following code:

```
#include <cs50.h>
#include <stdio.h>

int main()
{
    int x;
    printf("Enter decimal Number=");
    scanf("%d", &x);
    printf("Your Octal value=%o\n", x);
    printf("Enter Octal Number=");
    scanf("%o", &x);
    printf("Your decimal value=%d\n", x);
    return 0;
}
```

The right pane shows the terminal window output for the program 'p6.exe':

```
D:\CSE Assignment>p6\bin\Debug\p6.exe
Enter decimal Number=15
Your Octal value=17
Enter Octal Number=17
Your decimal value=15

Process returned 0 (0x0)   execution time : 8.636 s
Press any key to continue.
```

The bottom status bar shows the current file is 'D:\CSE Assignment\p6\main.c', the compiler is 'C/C++', the operating system is 'Windows (CR+LF)', and the current line is 'Line 16, Col 1, Pos 300'.

Problem No:07

Problem Name: C program to find Sum and Average of 3 numbers.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    int a,b,c;

    int sum=0;

    float avg;

    printf("Enter A=")
```

```
scanf("%d",&a);

printf("Enter B=");

scanf("%d",&b);

printf("Enter C=");

scanf("%d",&c);\\

sum=a+b+c;

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

avg=sum/3;

printf("Total Average=%f\n",avg);

return 0;

}
```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays a C source code file named `main.c` with the following content:

```
main.c x main.c | main.c Enter A=1
1 #include <stdio.h>
2 #include <math.h>
3
4 int main()
5 {
6     int a,b,c;
7     float avg;
8     printf("Enter A=");
9     scanf("%d", &a);
10    printf("Enter B=");
11    scanf("%d", &b);
12    printf("Enter C=");
13    scanf("%d", &c);
14    avg=(a+b+c)/3;
15    printf("Avg=%f", avg);
16    avg=avg/3;
17    printf("Total Sum=%d", avg);
18    printf("Total Average=%f", avg);
19
20 }
21
```

The status bar at the bottom indicates the file is `D:\CSE Assignment\p7\bin\Debug\p7.exe`, the line number is 21, and the column position is 1.

Problem No:08

Problem Name: C program to perform addition, subtraction, multiplication, remainder and division of two numbers.

Solution:

Input:

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

int main()
{
    int a,b,result;
    int sum=0;
    float avg;
    printf("Enter A=");
    scanf("%d",&a);
    printf("Enter B=");
    scanf("%d",&b);
    result=a+b;
    printf("Addition of a and b=%d\n",result);
    result=a-b;
    printf("Substraction of a and b=%d\n",result);
    result=a*b;
    printf("Multipication of a and b=%d\n",result);
    result=a/b;
    printf("Division of a and b=%d\n",result);
    result=a%b;
    printf("Remainder of a and b = %d\n",result);
    return 0;
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays a C source code file named 'main.c' with the following content:

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

int main()
{
    float a, b, result;
    int choice;

    printf("Enter A=2\n");
    scanf("%f", &a);
    printf("Enter B=2\n");
    scanf("%f", &b);

    choice = a + b;
    result = a - b;
    printf("Addition of a and b=%d\n", choice);
    printf("Subtraction of a and b=%d\n", result);

    choice = a * b;
    result = a / b;
    printf("Multiplication of a and b=%d\n", choice);
    printf("Division of a and b = %f\n", result);

    printf("Remainder of a and b = %d\n", result);
}

int main()
{
    float a, b, result;
    int choice;

    printf("Enter A=2\n");
    scanf("%f", &a);
    printf("Enter B=2\n");
    scanf("%f", &b);

    choice = a + b;
    result = a - b;
    printf("Addition of a and b=%d\n", choice);
    printf("Subtraction of a and b=%d\n", result);

    choice = a * b;
    result = a / b;
    printf("Multiplication of a and b=%d\n", choice);
    printf("Division of a and b = %f\n", result);

    printf("Remainder of a and b = %d\n", result);
}
```

The terminal window shows the output of the program, which performs arithmetic operations on the values 2 and 2. The output includes addition, subtraction, multiplication, division, and modulus operations.

Problem No:09

Problem Name: C program to find Area of a Triangle.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    float base,height,area;

    printf("Enter Base of Triangel=");

    scanf("%f",&base);

    printf("Enter Height of Triangel=");

    scanf("%f",&height);

    area=0.5*base*height;

    printf("The area of triangle=%f\n",area);

    return 0;
```

}

Output:

The screenshot shows the Code::Blocks IDE interface. In the top-left corner, there's a brace icon with a closing brace symbol. The main window displays a terminal-like interface with the following text:
Enter Base of Triangel:10
Enter Height of Triangel:20
The area of triangle=100.000000
Process returned 0 (0x0) execution time : 4.531 s
Press any key to continue.
Below the terminal, the code editor shows the C code for the program. The bottom status bar indicates the file is D:\CSE Assignment\p9\main.c, the line is 15, the column is 1, and the position is Pos 311.

Problem No:1o

Problem Name: C program to find Area of a Triangle given Three Sides.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

#include<math.h>

int main()

{

    float a,b,c,S,area;

    printf("Enter three base of triangle=");

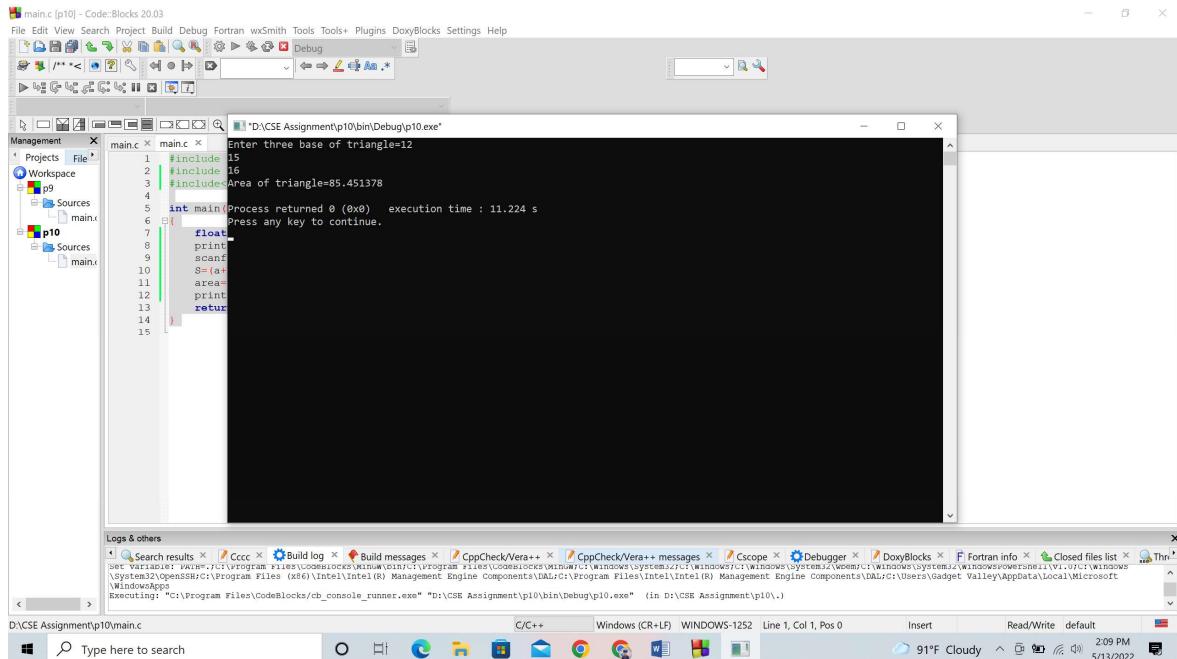
    scanf("%f %f %f",&a,&b,&c);

    S=(a+b+c)/2;

    area=sqrt(S*(S-a)*(S-b)*(S-c)) ;
```

```
    printf("Area of triangle=%f\n",area);  
  
    return 0;  
  
}
```

Output:



Problem No:11

Problem Name :C program to find Area of a Rectangle.

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

{

float height width greg;

```
printf("Enter Height of a Rectangle=");
```

```
scanf("%f",&height);
```

```

printf("Enter Width of a Rectangle=");

scanf("%f",&width);

area=height*width;

printf("Area of Rectangle=%f\n",area);

return 0;

```

}Output:

Problem No:12

Problem Name : C program to find Area of a Circle.

Solution:

Input:

```

#include <stdio.h>

#include <stdlib.h>

int main()

{

    float area,r;

    printf("Enter R=");

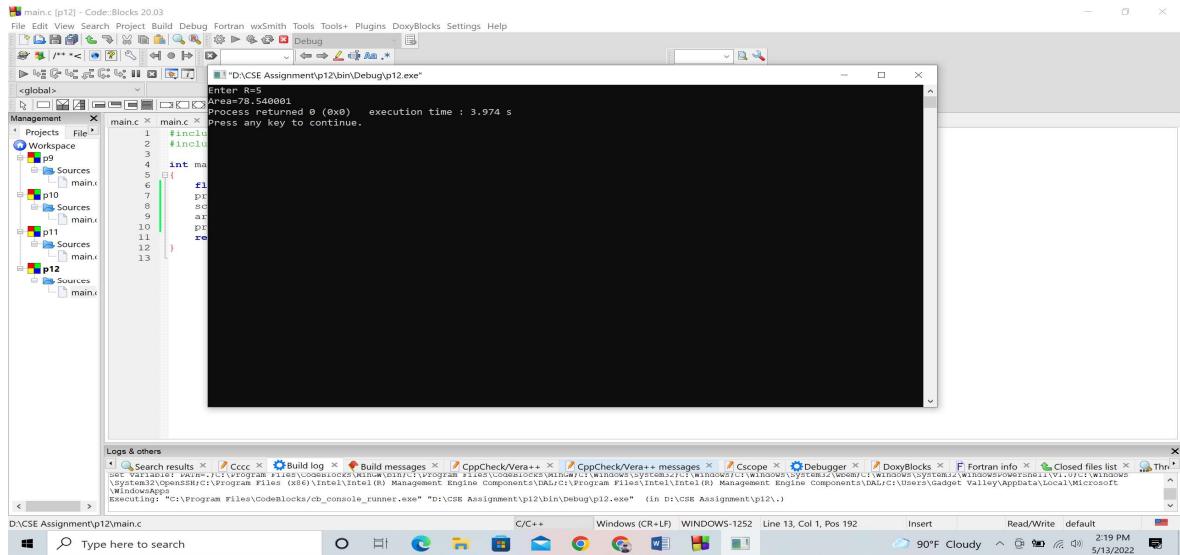
    scanf("%f",&r);

    area=3.1416*r*r;

```

```
    printf("Area=%f",area);  
  
    return 0;  
  
}
```

Output;



Problem No:13

Problem Name : C program to convert Celsius temperature To Fahrenheit temperature, convert Fahrenheit temperature To Celsius temperature.

Solution:

Input:

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    float C,F;
    printf("Enter C");
    scanf("%f",&C);
    F=(C*1.8)+32 ;
    printf("Fahren");
}
```

```

printf("Enter Fahrenheit Temperature : ");

scanf("%f",&F);

C=(F-32)*5/9;

printf("Celsius Temperature is = %.2f\n",C);

return 0;
}

```

Output:

main.c [p13] - Code::Blocks 20.03

File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help

Management

Projects File

Workspace

Process returned 0 (0x0) execution time : 5.391 s

Press any key to continue.

Logs & others

D:\CSE Assignment\p13\main.c C:\Program Files\CodeBlocks\cb_console_runner.exe "D:\CSE Assignment\p13\bin\Debug\p13.exe" (in D:\CSE Assignment\p13.)

D:\CSE Assignment\p13\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 1, Pos 0 Insert Read/Write default 2:24 PM 5/13/2022

Problem No:14

Problem Name : C program on how to swap Two numbers with temporary variables.Solution:

Input:

```

#include <stdio.h>

#include <stdlib.h>

int main()

{

```

```
int first,second,temp;  
  
printf("Enter the First Number : ");  
  
scanf("%d",&first);  
  
printf("Enter the Second Number : ");  
  
scanf("%d",&second);  
  
temp=first;  
  
first=second;  
  
second=temp;  
  
printf("After Swapping , First Number : %d\n",first);  
  
printf("After Swapping , Second Number : %d\n",second);  
  
return 0;  
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. The project tree on the left lists several projects under 'Management'. The current active file is 'main.c' from the 'p14' project. The code in 'main.c' swaps two integers entered by the user. The output window on the right shows the execution of the program, where it prompts for two numbers, performs the swap, and prints the results. The status bar at the bottom provides build information.

```
main.c [p14] - Code::Blocks 20.03

File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
Management
  Projects File
  Workspace p9
    Sources main.c
  p10 Sources main.c
  p11 Sources main.c
  p12 Sources main.c
  p13 Sources main.c
  p14 Sources main.c
Management x main.c x Enter the First Number : 10
1 #include <stdio.h>
2 #include <conio.h>
3
4 int main()
5 {
6     int first, second;
7     clrscr();
8     printf("Enter the First Number : ");
9     scanf("%d", &first);
10    printf("Enter the Second Number : ");
11    scanf("%d", &second);
12
13    first = first + second;
14    second = first - second;
15    first = first - second;
16
17    clrscr();
18    printf("After Swapping , First Number : %d", first);
19    printf("After Swapping , Second Number : %d", second);
20
21    getch();
22 }
Process returned 0 (0x0)   execution time : 6.644 s
Press any key to continue.

Logs & others
Search results x Ccccs x Build log x Build messages x CppCheckVera++ x CppCheckVera++ messages x CScope x Debugger x Doxygen info x Closed files list x
Set path: D:\CSE Assignment\p14\bin\Debug\p14.exe
System32\OpenSSH\Program Files\CodeBlocks\bin\win32\;C:\Program Files\ch\ch_console_runner.exe;D:\CSE Assignment\p14\bin\Debug\p14.exe
Executing: "C:\Program Files\CodeBlocks\ch_console_runner.exe" "D:\CSE Assignment\p14\bin\Debug\p14.exe" (in D:\CSE Assignment\p14\)
D:\CSE Assignment\p14\main.c
C/C++ Windows (CR+LF) WINDOWS-1252 Line 15, Col 60, Pos 394 Insert Read/Write default
Type here to search 90°F Cloudy 2:31 PM 5/13/2022
```

Problem No:15

Problem Name : C program of X raised to the power (X^Y)

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    int x,y,power;

    printf("EnterX=");

    scanf("%d",&x);

    printf("EnterY =");

    scanf("%d",&y);

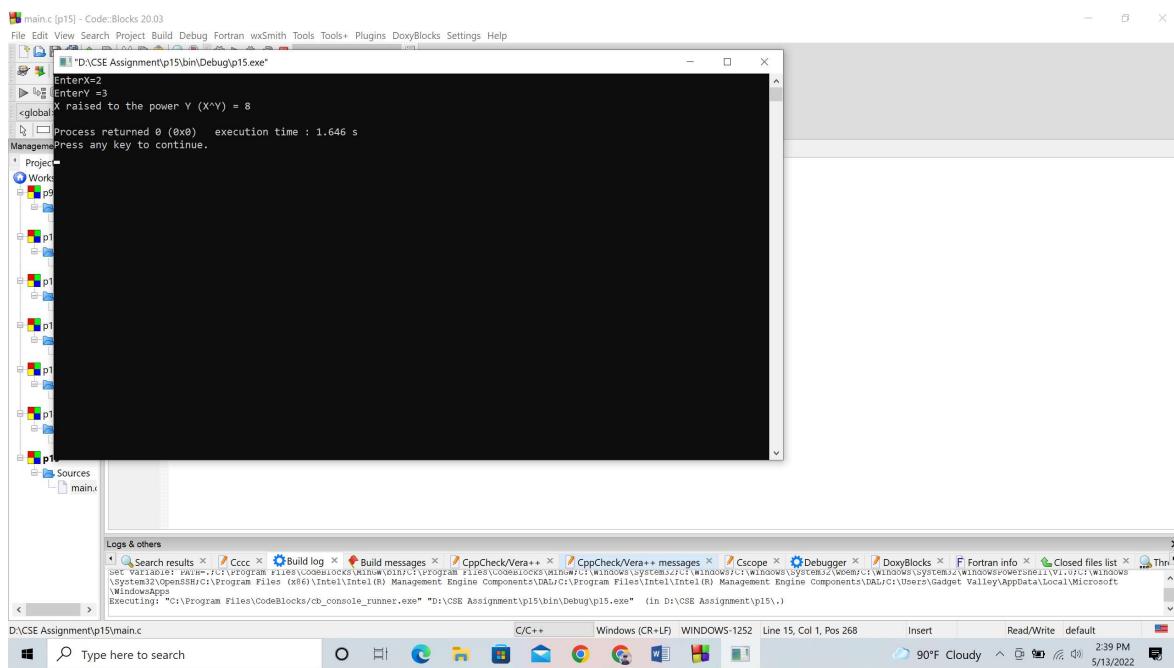
    power=pow(x,y);

    printf("X raised to the power Y (X^Y) = %d\n",power);

    return 0;

}
```

Output:



Problem No:16

Problem Name : C program to check whether a number is positive or negative.

Solution:

Input:

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

int main()
{
    int num;

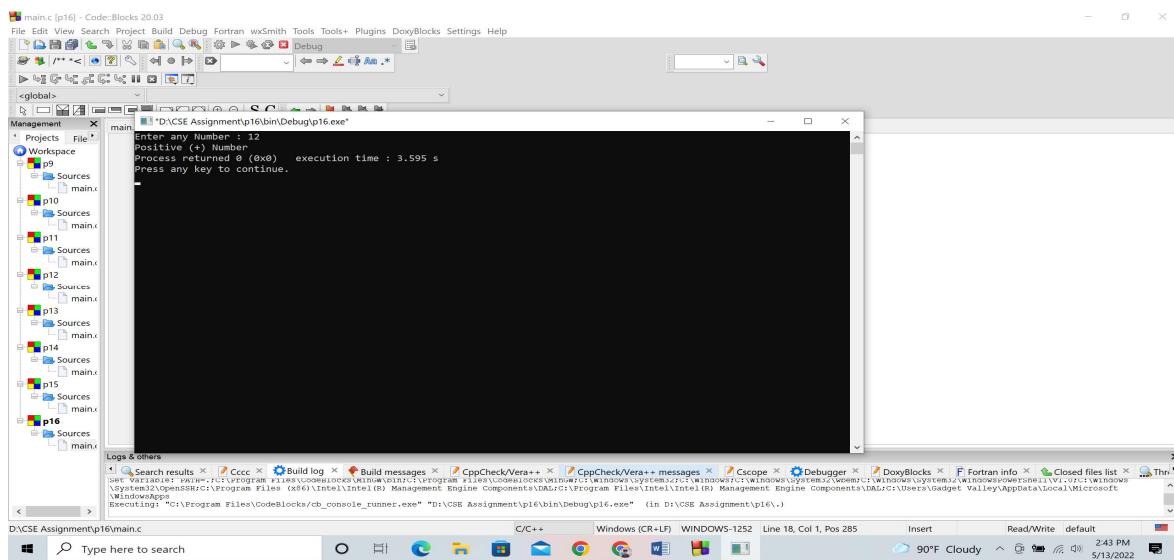
    printf("Enter any Number : ");

    scanf("%d",&num);

    if(num>0)
        printf("Positive (+) Number");
    else if(num<0)
        printf("Negative(-) Number");
    else
        printf("0");

    return 0;
}
```

Output:



Problem No:17

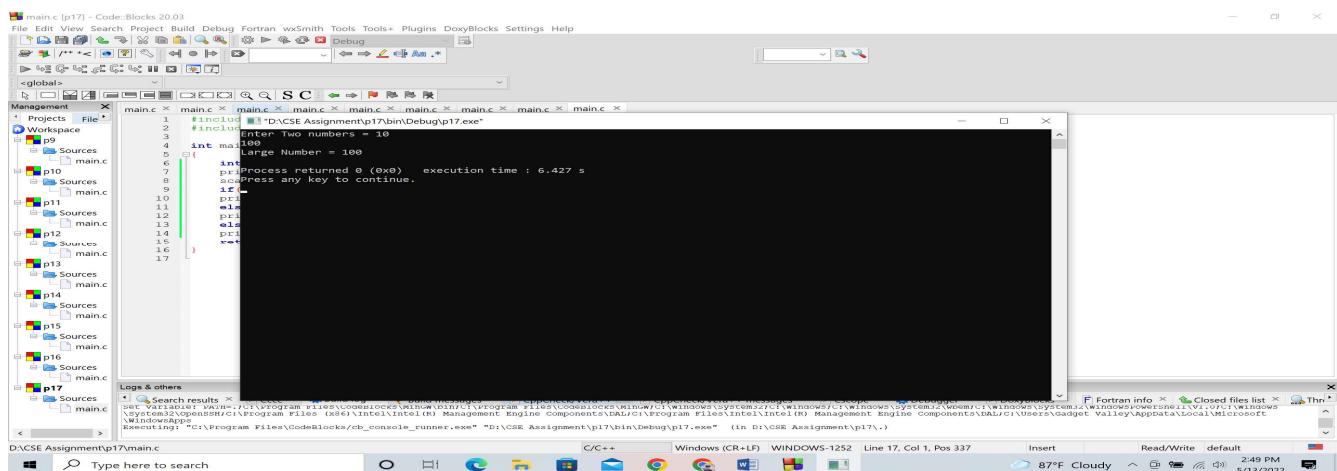
Problem Name : C program to find the Largest number among two numbers.

Input:

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

int main()
{
    int num1,num2;
    printf("Enter Two numbers = ");
    scanf("%d %d",&num1,&num2);
    if(num1>num2)
        printf("Large Number = %d\n",num1);
    else if(num1<num2)
        printf("Large Number = %d\n",num2);
    else
        printf("Numbers are Equal\n");
    return 0;}          Output:
```

Output:



Problem No:18

Problem Name : C program to check whether a number is Even or Odd.

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

{

```
int num;
```

```
printf("Enter any value : ");
```

```
scanf("%d",&num);
```

```
if(num%2==0)
```

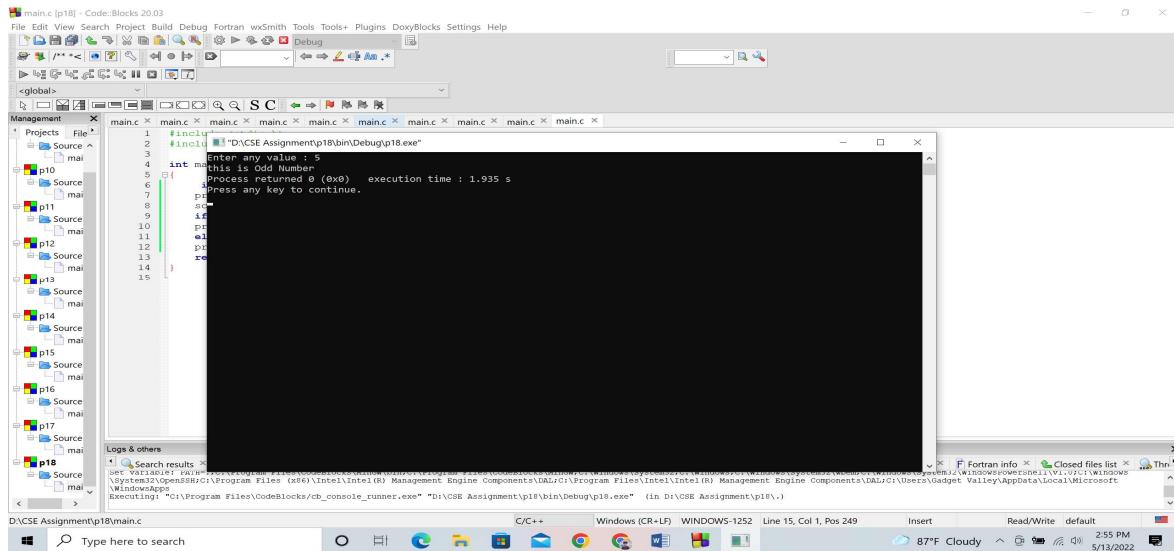
```
printf(" This is Even Number");
```

else

```
printf("this is Odd Number");
```

```
return 0; }
```

Output:



Problem No:19

Problem Name : C program to check whether a year is Leap year or not

Solution:

Input:

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

int main()
{
    int year;
    printf("Enter any Year : ");
    scanf("%d",&year);
    if(year%400==0)
        printf("Leap Year");
    else if(year%4==0 && year%100!=0)
        printf("This year is Leap Year");
    else
        printf("This Year is Not Leap Year");
    return 0;
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays a C source code file named 'main.c' with the following content:

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

int main()
{
    int y;
    printf("Enter any Year : ");
    scanf("%d", &y);
    if(y % 4 == 0)
        if(y % 100 != 0)
            printf("This Year is Not Leap Year");
        else
            if(y % 400 == 0)
                printf("This Year is a Leap Year");
            else
                printf("This Year is Not Leap Year");
    else
        printf("This Year is Not Leap Year");
}
```

The output window shows the execution results:

```
Enter any Year : 2022
This Year is Not Leap Year
Process returned 0 (0x0)   execution time : 2.179 s
Press any key to continue.
```

The status bar at the bottom indicates the file is a C++ file ('C/C++'), the operating system is Windows ('WINDOWS-1252'), the line number is 19, the column is 1, and the position is 331. The taskbar shows the file path 'D:\CSE Assignment\p19\main.c'.

Problem No:20

Problem Name : C program to check whether a letter is Capital or Small.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    char ch;

    printf("Enter any Letter : ");

    scanf("%c",&ch);

    if(ch>='A' && ch<='Z')

        printf("Capital Letter");

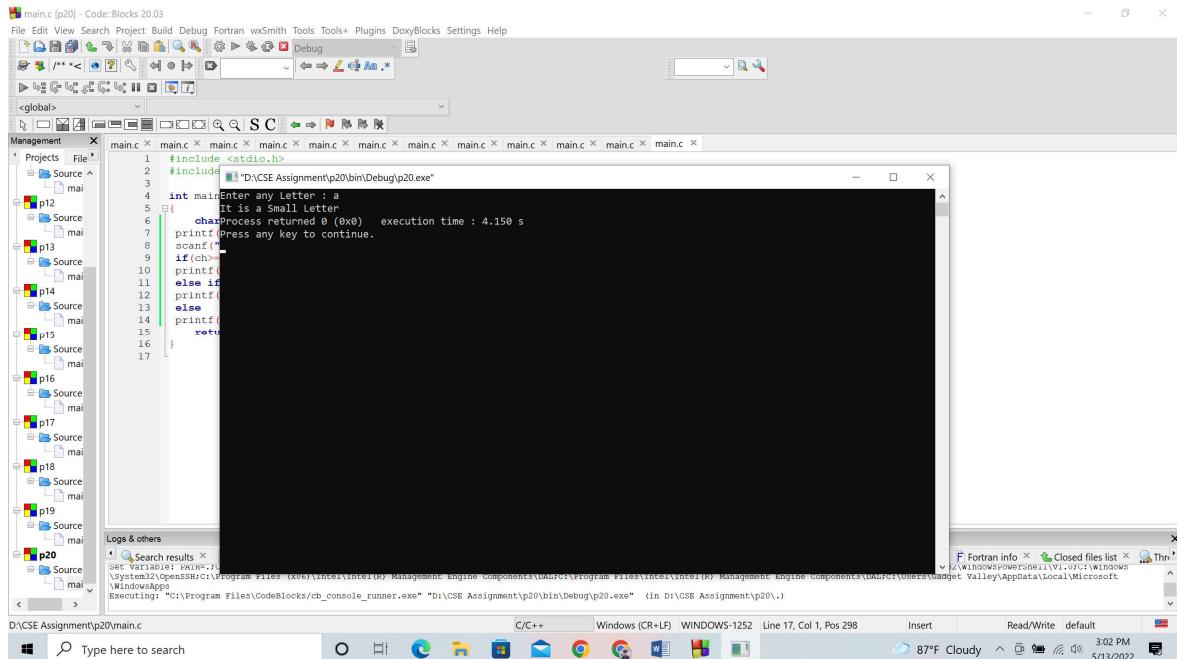
    else if(ch>='a' && ch<='z')

        printf("It is a Small Letter");

    else
```

```
printf("It is Not a Letter");  
return 0;  
}
```

Output:



Problem No:21

Problem Name : C program to check whether a letter is Vowel or Consonant.(using switch operator)

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

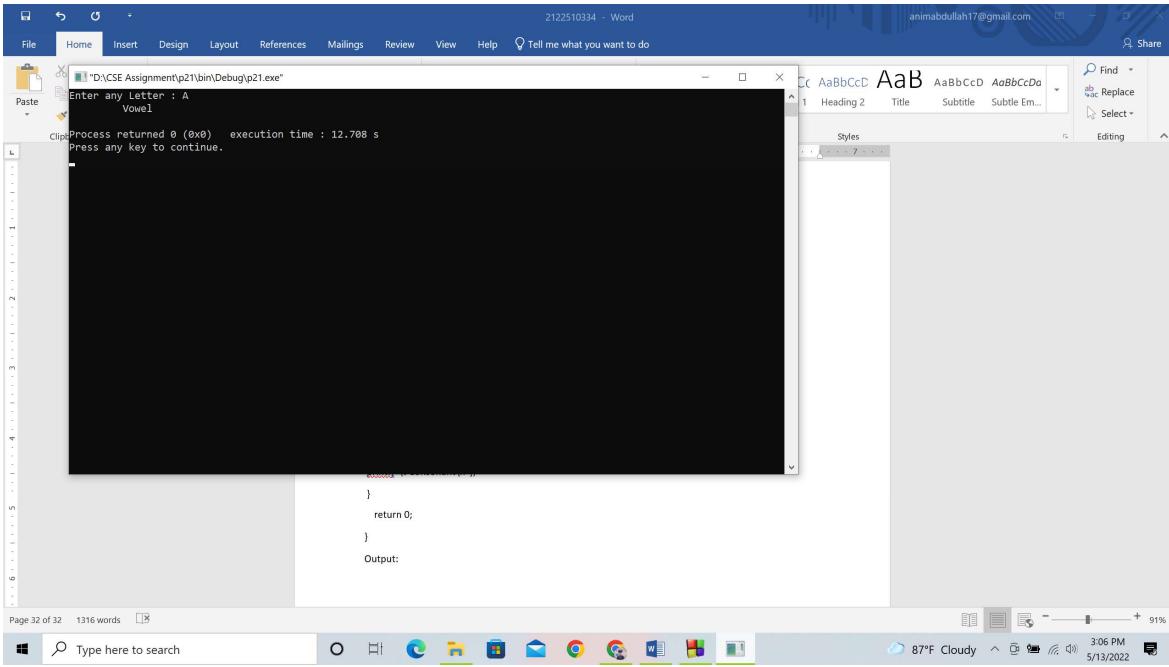
{

```
char ch;
```

```
printf("Enter any Letter : ");  
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("\t Vowel\n");
        break ;
    default :
        printf("\t Consonant\n");
}
return 0;
}
```

Output:



Problem No:22

Problem Name : C program that read a digit and display its spelling.(using switch operator)

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    int digit;

    printf("Enter any Digit : ");

    scanf("%d",&digit);

    switch(digit)

    {

        case 0 :

            printf("Zero\n");

        case 1 :

            printf("One\n");

        case 2 :

            printf("Two\n");

        case 3 :

            printf("Three\n");

        case 4 :

            printf("Four\n");

        case 5 :

            printf("Five\n");

        case 6 :

            printf("Six\n");

        case 7 :

            printf("Seven\n");

        case 8 :

            printf("Eight\n");

        case 9 :

            printf("Nine\n");

    }

}
```

```
break;  
case 1:  
printf("One\n");  
break;  
case 2 :  
printf("Two\n");  
break;  
case 3 :  
printf("Three\n");  
break;  
case 4 :  
printf("Four\n");  
break;  
case 5 :  
printf("Five\n");  
break;  
case 6 :  
printf("Six\n");  
break;  
case 7 :  
printf("Seven\n");  
break;  
case 8 :  
printf("Eight\n");  
break;  
case 9 :
```

```

printf("Nine\n");

break;

default:

printf("Not a valid Digit\n");

}

return 0;
}

```

Output:

```

main.c [p2] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DocBlocks Settings Help
Build Run Stop Minimize Maximize Close
D:\CSE Assignment\p2\bin\Debug\p2.exe
Enter any Digit : 8
Eight
Process returned 0 (0x0) execution time : 2.314 s
Press any key to continue.

```

Problem No:23

Problem Name : C program to accept the height of a person (in cm) and categorize the person according to their height.

Solution:

Input:

```

#include <stdio.h>

#include <stdlib.h>

int main()

{
    float height;

```

```
printf("Enter the Height of the person (in cm) : ");

scanf("%f",&height);

if(height<150)

printf("The person is Dwarf.\n");

else if(height >=150 && height <165)

printf("The person is Average Heighted.\n");

else if(height >=165 && height<=195)

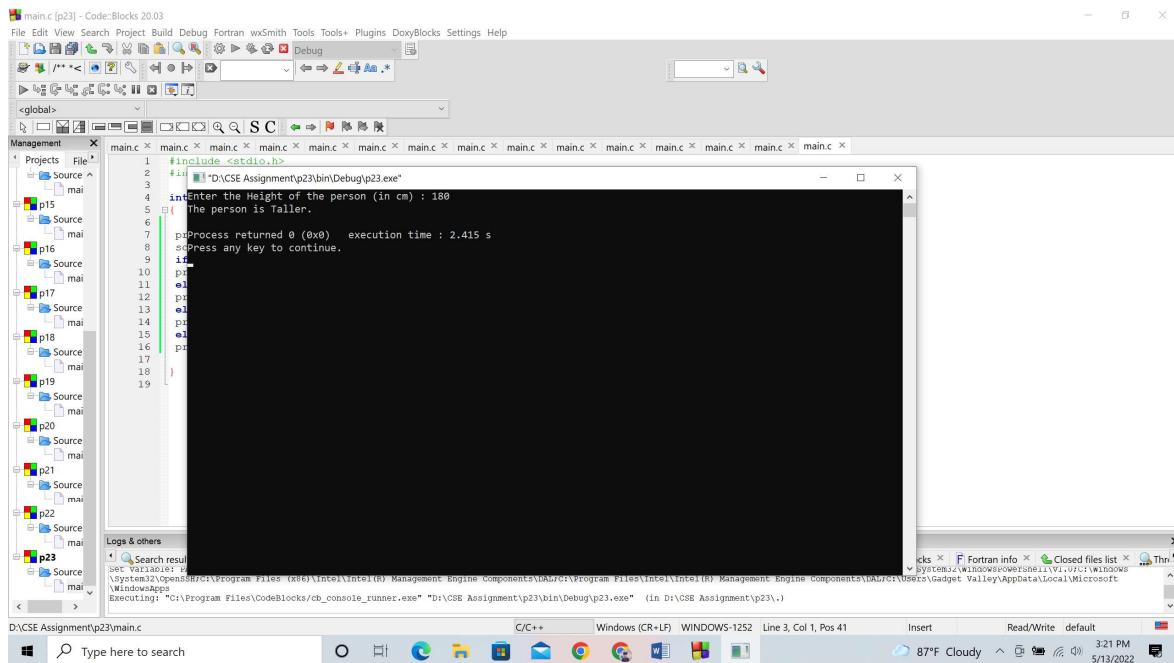
printf("The person is Taller.\n");

else

printf("Abnormal Height.n");

return 0; }
```

return 0; }



Problem No:24

Problem Name : C program to read any Month Number in integer and display Month name with days .

Solution:

Input:

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

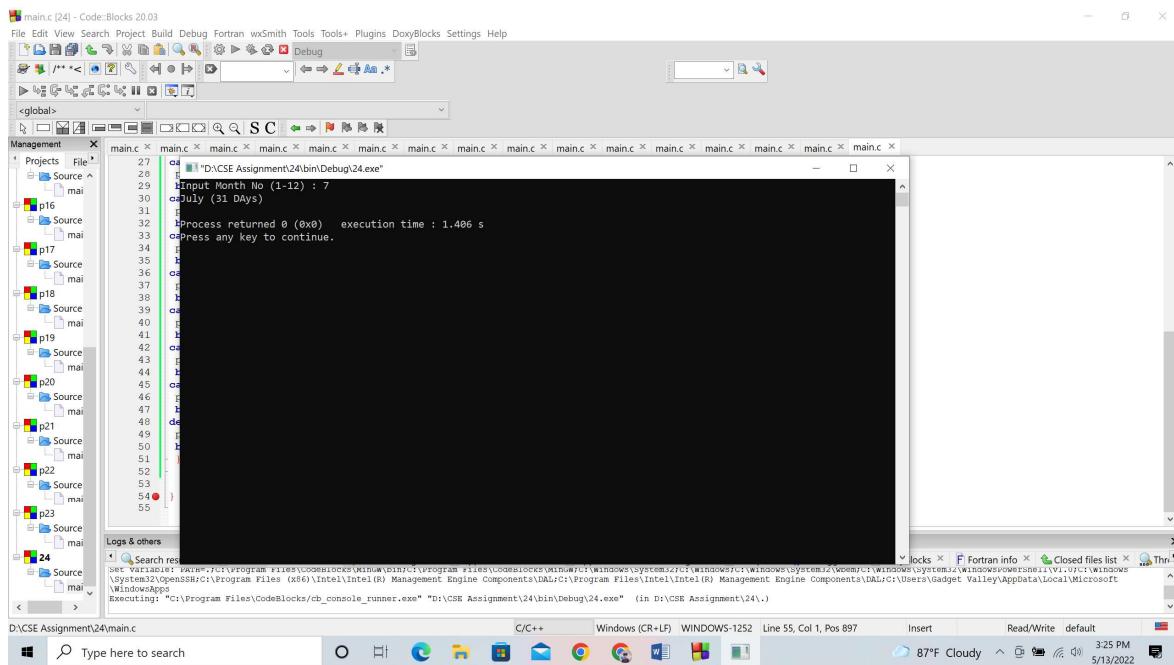
int main()
{
{
int month;
printf("Input Month No (1-12) :");
scanf("%d",&month);
switch(month)
{
case 1:
printf("January (31 Days)\n");
break;
case 2:
printf("February (28/29 Days)\n");
break;
case 3:
printf("March (31)\n");
break;
case 4:
printf("April (30 Days)\n");
break;
case 5:
printf("May (31 Days)\n");
break;
case 6:
```

```
printf("June (30 Days)\n");
break;
case 7:
printf("July (31 DAys)\n");
break;
case 8:
printf("August (31 DAys)\n");
break;
case 9:
printf("September (30 Days)\n");
break;
case 10:
printf("October (31 Days)\n");
break;
case 11:
printf("November (30 Days)\n");
break;
case 12:
printf("December (31 Days)\n");
break;
default:
printf("Invalid Month number. \nPlease try again...Enter integer between (1-12)
....\n");
break;
}
```

```
    return 0;
```

}

Output:



Problem No:25

Problem Name : C program to accept a coordinate point in a XY coordinate system and determine in which quadrant the coordinate point lies.

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

{

```
int co1,co2;
```

p

```
scanf("%d %d" &c01 &c02);
```

if($\cos 1 > 0$ & & $\cos 3 > 0$)

```

printf("The coordinate point (%d,%d) lies in the First quadrant.\n",co1,co2);

else if( co1 < 0 && co2 > 0)

printf("The coordinate point (%d,%d) lies in the Second quadrant.\n",co1,co2);

else if( co1 < 0 && co2 < 0)

printf("The coordinate point (%d, %d) lies in the Third quadrant.\n",co1,co2);

else if( co1 > 0 && co2 < 0)

printf("The coordinate point (%d,%d) lies in the Fourth quadrant.\n",co1,co2);

else if( co1 == 0 && co2 == 0)

printf("The coordinate point (%d,%d) lies at the origin.\n",co1,co2);

return 0;

}

```

Output:

```

main.c [p25] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
D:\CSE Assignment\p25\bin\Debug\p25.exe
Management X main.c X main.c X Input the values for X and Y coordinate : 6
1 #include
2 <stdio.h>
3
4 int main()
5 {
6     int co1, co2;
7     printf("Input the values for X and Y coordinate : ");
8     scanf("%d %d", &co1, &co2);
9     if( co1 > 0 && co2 > 0)
10         printf("The coordinate point (%d,%d) lies in the First quadrant.\n");
11     else if( co1 < 0 && co2 > 0)
12         printf("The coordinate point (%d,%d) lies in the Second quadrant.\n");
13     else if( co1 < 0 && co2 < 0)
14         printf("The coordinate point (%d, %d) lies in the Third quadrant.\n");
15     else if( co1 > 0 && co2 < 0)
16         printf("The coordinate point (%d,%d) lies in the Fourth quadrant.\n");
17     else if( co1 == 0 && co2 == 0)
18         printf("The coordinate point (%d,%d) lies at the origin.\n");
19
20     return 0;
21 }
22

```

Logs & others

D:\CSE Assignment\p25\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 1, Pos 0 Insert Read/Write default 87°F 3:28 PM 5/13/2022

Problem No:26

Problem Name : C program to read the age of a candidate and determine whether it is eligible for casting his/her own vote.

Solution:

Input:

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int vote_age;
    printf("Input the age of the candidate : ");
    scanf("%d",&vote_age);
    if (vote_age<18)
    {
        printf("Sorry, You are not eligible to caste your vote.\n");
        printf("You would be able to caste your vote after %d year.\n",18-vote_age);
    }
    else
        printf("Congratulation! You are eligible for casting your vote.\n");
    return 0;
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. On the left, the project tree displays a workspace named 'p26' containing a source file 'main.c'. The main window shows the code for a program that checks if a candidate is eligible to vote based on their age. A terminal window in the center displays the output of the program, which includes the input age (24), a congratulatory message, and a prompt to press any key to continue. The status bar at the bottom provides system information like the date and time.

```
#include <stdio.h>
#include <conio.h>
int main()
{
    int age;
    printf("Input the age of the candidate : ");
    scanf("%d", &age);
    if (age >= 18)
        printf("Congratulation! You are eligible for casting your vote.\n");
    else
        printf("Sorry, you are not eligible to vote.\n");
    getch();
}
```

Problem No:27

Problem Name : C program to print even numbers between 1-n number (using loop).

Solution:

Input:

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

int main()
{
    int i,n;
    printf("Print all Even Numbers till : ");
    scanf("%d",&n);
    for(i=2 ; i <=n ; i++)
    {
        if(i%2==0)
            printf("%d\n",i);
    }
}
```

```

    }

    return 0;
}

```

Output:

```

main.c [p27] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
File Projects File...
Management X main_c X main.c X
Projects p26 Sources main.c
p27 Sources main.c
<global>
D:\CSE Assignment\p27\bin\Debug\p27.exe
Print all Even Numbers till : 10
2
4
6
8
10
Process returned 0 (0x0) execution time : 2.584 s
Press any key to continue.

Logs & Debugger X Doxygen X Fortran info X
Set Variable: VARNAME="C:\Program Files\CodeBlocks\Windows\bin\cb_console_runner.exe" C:\Program Files\CodeBlocks\Windows\bin\cb_console_runner.exe "D:\CSE Assignment\p27\bin\Debug\p27.exe" (in D:\CSE Assignment\p27..)
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "D:\CSE Assignment\p27\bin\Debug\p27.exe" (in D:\CSE Assignment\p27..)

D:\CSE Assignment\p27\main.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 17, Col 1, Pos 220 Insert Read/Write default
Type here to search 85°F Cloudy 9:44 PM 5/13/2022

```

Problem No:28

Problem Name : C program to display Multipication Table of a given integer

Solution:

Input:

```

#include <stdio.h>

#include <stdlib.h>

int main()

{
    int num,i;

    printf("Enter any number : ");

    scanf("%d",&num);

    for(i=1 ; i<=10 ; i++)

```

```

{
printf("%d x %d = %d\n",num,i,num*i);

}
return 0;
}

```

} Output:

The screenshot shows the Code::Blocks IDE interface. On the left, the Project Manager window displays a workspace named 'P28' with a single source file 'main.c'. The code in 'main.c' is as follows:

```

1 // C program to print multiplication table of any number
2
3 #include <stdio.h>
4
5 int main()
6 {
7     int i, num;
8
9     printf("Enter any number : ");
10    scanf("%d", &num);
11
12    for(i=1; i<=10; i++)
13    {
14        printf("%d x %d = %d\n", num, i, num*i);
15    }
16
17    return 0;
18}

```

The main window shows the execution output of the program. It prompts the user to enter a number (7) and then prints the multiplication table of 7 from 1 to 10. The output is:

```

Enter any number : 7
7 x 1 = 7
7 x 2 = 14
7 x 3 = 21
7 x 4 = 28
7 x 5 = 35
7 x 6 = 42
7 x 7 = 49
7 x 8 = 56
7 x 9 = 63
7 x 10 = 70

```

At the bottom of the output, it shows the process returned 0 (0x0) and the execution time.

Problem No:29

Problem Name : C program to find Factorial of a number.

Solution:

Input:

```

#include <stdio.h>

#include <stdlib.h>

int main()

{
    int i,fact=1,num;

    printf("Enter any Positive Number : ");

    scanf("%d",&num);

```

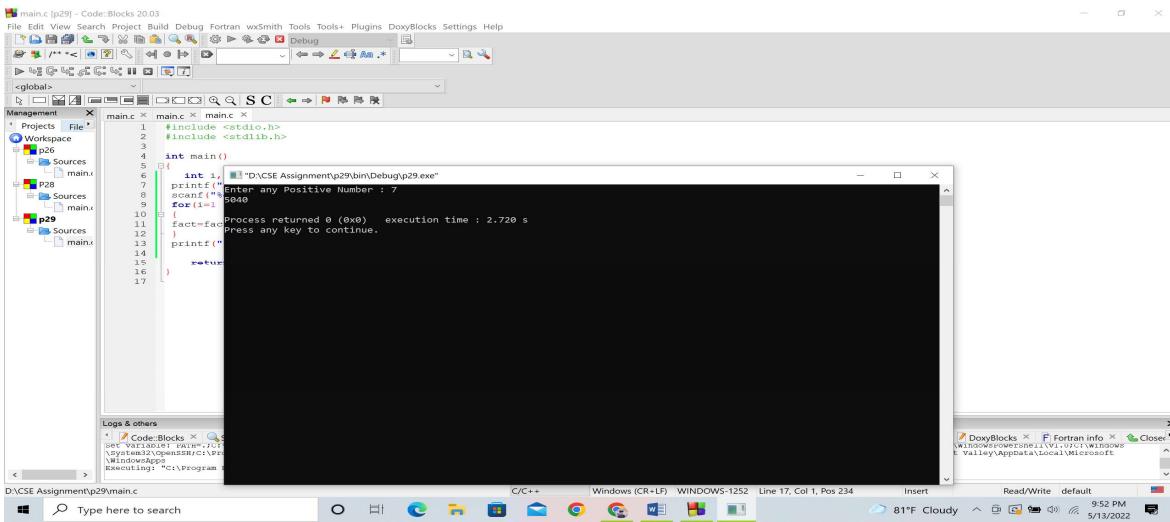
```

for(i=1 ; i<=num ; i++)
{
    fact=fact*i;
}

printf("%d\n",fact);

return 0;
    
```

Output:



Problem No:30

Problem Name : C program to check whether a number is Prime or not.

Solution:

Input:

```

#include <stdio.h>

#include <stdlib.h>

int main()

{
    int num,count=0,i;

    printf("Enter any number = ");

    scanf("%d",&num);

    for(i=2; i<num ; i++)
        
```

```

{
if(num%i==0)

{
count++;

break;

}

}

if (count==0)

printf("Prime Number\n");

else

printf("Not a Prime Number\n");

return 0;
}

```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays the code for a C program named 'main.c'. The code prompts the user to enter a number, checks if it's prime, and prints the result. The output window shows the program's execution: it asks for input, receives '7', and then prints 'Prime Number'. The status bar at the bottom provides system information like the date and time.

```

main.c [p30] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
Management X main.c X main.c X main.c X
Projects File
  Workspace
    p26
      Sources
    p28
      Sources
    p29
      Sources
    p30
      Sources
      main.c
main.c
  #include <stdio.h>
  #include <stdlib.h>
  int main()
  {
    int num, count;
    printf("Enter a number");
    scanf("%d", &num);
    for(i=2; i<num;
    if(num % i == 0)
    {
      count++;
      break;
    }
    if (count == 0)
      printf("Prime Number");
    else
      printf("Not a Prime Number");
    return 0;
  }

```

Problem No:31

Problem Name : C program to find the GCD & LCM of two integers.

Solution:

Input:

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

int main()
{
    int num1,num2,n1,n2,rem,gcd,lcm ;
    printf("Enter Two numbers = ") ;
    scanf("%d %d",&num1,&num2) ;
    n1=num1 ;
    n2=num2 ;
    while(n2!=0)
    {
        rem = n1 % n2 ;
        n1 = n2 ;
        n2 = rem ;
    }
    gcd = n1 ;
    printf("GCD = %d\n",gcd) ;
    lcm = (num1*num2)/gcd ;
    printf("LCM = %d\n",lcm) ;

    return 0;
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. On the left is the project tree with several workspace entries. The main window displays a terminal window titled "D:\CSE Assignment\p31\bin\Debug\p31.exe". The terminal output shows:

```
Enter Two numbers = 6 8
GCD = 2
Press any key to continue.
```

The code editor window shows the C code for calculating the GCD:

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

int main()
{
    int num1,num2;
    printf("Enter Two numbers = ");
    scanf("%d %d", &num1, &num2);
    while(num2!=0)
    {
        int rem = num1 % num2;
        num1 = num2;
        num2 = rem;
    }
    gcd = num1;
    printf("GCD of %d and %d is %d", num1, num2, gcd);
    return 0;
}
```

The status bar at the bottom indicates the file is "D:\CSE Assignment\p31\main.c", the compiler is "C/C++", the system is "Windows (CR+LF)", the line is "Line 23, Col 1, Pos 365", and the time is "9:58 PM 5/13/2022".

Problem No:32

Problem Name : C program that read any positive integer and display Sum Of Digits.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    int num,temp,r,sum=0 ;

    printf("Enter any number = ") ;

    scanf("%d",&num) ;

    temp = num ;

    while(temp!= 0)

    {

    }
```

```

r = temp%10 ;

sum = sum+r ;

temp = temp/10 ;

}

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

return 0;
}

```

Output:

```

main.c [p32] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
File Management Projects main.c main.c main.c main.c main.c main.c
Workspace p32 Sources mainx p28 Sources mainx p29 Sources mainx p30 Sources mainx p31 Sources mainx p32 Sources mainx
main.c
1 #include <stdio.h>
2 #include <stdlib.h>
3
4 int main()
5 {
6     int num;
7     printf("Enter any number = ");
8     scanf("%d");
9     temp = num;
10    while(temp != 0)
11    {
12        r = temp % 10;
13        sum = sum + r;
14        temp = temp / 10;
15    }
16    printf("Sum of Digits = %d\n",sum);
17    return 0;
18 }
19

```

Problem No:33

Problem Name : C program that Reverse an integer number

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```

int num,temp,r,sum=0;

printf("Enter any number = ") ;

scanf("%d",&num) ;

temp = num ;

while(temp!= 0)

{

r = temp%10 ;

sum = sum*10+r ;

temp = temp/10 ;

}

printf("Reverse of Integer Number = %d\n",sum) ;

return 0;
}

```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays the code for reversing an integer. The output window shows the following interaction:

```

main.c [p33] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
main.c
1 #include <stdio.h>
2 #include <math.h>
3
4 int main()
5 {
6     int num;
7     printf("Enter any number = ");
8     scanf("%d", &num);
9     temp = num;
10    while(temp != 0)
11    {
12        r = temp % 10;
13        sum = sum * 10 + r;
14        temp = temp / 10;
15    }
16    printf("Reverse of Integer Number = %d\n", sum);
17
18
19
Process returned 0 (0x0)   execution time : 3.085 s
Press any key to continue.

```

The code uses a while loop to repeatedly extract the last digit of the input number (temp) using the modulus operator (%). It then adds this digit to the sum (multiplied by 10 each iteration) and divides the number by 10 using integer division (/). The process continues until the number becomes zero. Finally, it prints the reversed number.

Problem No:34

Problem Name : C program to check an integer number if it is Palindrome Number or not.

Solution:

Input:

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int num,temp,r,sum=0 ;
    printf("Enter any number = ") ;
    scanf("%d",&num) ;
    temp = num ;
    while(temp!= 0)
    {
        r = temp%10 ;
        sum = sum*10+r ;
        temp = temp/10 ;
    }
    if(num==sum)
        printf("Palindrome Number") ;
    else
        printf("Not Palindrome Number");
    return 0;
```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays a C program named 'main.c' with the following code:

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

int main()
{
    int num,temp,r,sum=0;
    printf("Enter any number = ");
    scanf("%d",&num);
    temp = num;
    while(temp!= 0)
    {
        r = temp%10 ;
        sum = sum+r*r;
        temp = temp/10;
    }
    if(num==sum)
        printf("Palindrome Number");
    else
        printf("Not Palindrome");
    return 0;
}
```

The status bar at the bottom indicates the file is a C/C++ file, the operating system is Windows (CR+LF), the processor is WINDOWS-1252, the line is 22, the column is 1, and the position is Pos 343. The taskbar shows various open applications including File Explorer, Microsoft Edge, and FileZilla.

Problem No:35

Problem Name : C program to check the given number is Armstrong or not.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    int num,temp,r,sum=0 ;

    printf("Enter any number = ") ;

    scanf("%d",&num) ;

    temp = num ;

    while(temp!= 0)

    {

        r = temp%10 ;

        sum = sum+r*r*r;

        temp = temp/10;

    }

    if(sum==num)

        printf("Armstrong Number");

    else

        printf("Not Armstrong Number");

    return 0;

}
```

```

if(sum==num)

printf("Armstrong Number");

else

printf("Not Armstrong Number");

return 0;

}

```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays the code for a C program to check if a number is Armstrong. The output window shows the execution results:

```

main.c [p35] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
Projects File...
P26 Sources P28 Sources P29 Sources P30 Sources P31 Sources P32 Sources P33 Sources P34 Sources P35 Sources
Management X main.c main.c main.c main.c main.c main.c main.c main.c main.c
1 #include <stdio.h>
2 #include <math.h>
3 int main()
4 {
5     int num, sum = 0, temp, r;
6     printf("Enter any number: ");
7     scanf("%d", &num);
8     temp = num;
9     while(temp != 0)
10    {
11        r = temp % 10;
12        sum += r * r * r;
13        temp /= 10;
14    }
15    if(sum == num)
16        printf("%d is an Armstrong number.\n", num);
17    else
18        printf("%d is not an Armstrong number.\n", num);
19    return 0;
20 }
21
22 }

Process returned 0 (0x0)   execution time : 2.406 s.
Press any key to continue.

```

The status bar at the bottom indicates the file is D:\CSE Assignment\p35\main.c, the editor mode is C/C++, the window title is Windows (CR+LF), the line number is 23, and the column position is 1.

Problem No:36

Problem Name : C program to check the given number is Strong Number or not.

Solution:

Input:

```

#include <stdio.h>

#include <stdlib.h>

int main()

{
    int num,temp,rem,sum=0,i,fact;

```

```
printf("Enter any number = ") ;  
scanf("%d",&num) ;  
  
temp = num ;  
  
while(temp!= 0)  
{  
  
rem = temp%10 ;  
  
fact=1;  
  
for(i=1 ; i<=rem ; i++)  
{  
  
fact=fact*i;  
  
}  
  
sum=sum+fact;  
  
temp=temp/10;  
  
}  
  
if(sum==num)  
printf("%d is a Strong Number.\n",num);  
  
else  
printf("%d is Not a Strong Number.\n",num);  
  
return 0; }
```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays a C program named 'main.c' with the following code:

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

int main()
{
    int num,temp,enter any number = 56
    printf("Enter any number = 56 is Not a Strong Number.\n");
    scanf("%d", &num);
    temp = num ;
    while(temp!=0) Process returned @ (0x0) execution time : 1.738 s
    {
        rem = temp%10;
        fact=1;
        for(i=1 ; i<=rem ; i++)
        {
            fact=fact*i;
        }
        sum=sum+fact;
        temp=temp/10;
    }
    if(sum==num)
        printf("%d is\n";
    else
        printf("%d is\n";
    return 0;
}
```

The status bar at the bottom indicates the file path 'D:\CSE Assignment\p36\main.c', the editor mode 'C/C++', the line 'Line 15, Col 3, Pos 242', and the date/time '5/13/2022 10:14 PM'. A taskbar at the bottom shows various application icons.

Problem No:37

Problem Name : C program to find the Maximum between two numbers using Function.

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```
    int result;
```

```
    if(num1>num2)
```

```
        result=num1;
```

```
    else
```

```
        result=num2;
```

```
}
```

```
int main()
```

```
{  
int a,b;  
printf("Enter Two Numbers : ");  
scanf("%d %d",&a,&b);  
int ret;  
ret=max(a,b);  
printf("Maximum Value is : %d\n",ret);  
  
return 0;  
}
```

Output:

```
#include <stdio.h>  
int max(int num1,int num2)
```

```
{  
int result;  
if(num1>num2)  
result=num1;  
else  
result=num2;  
}
```

```
int main()  
{  
int a,b;  
printf("Enter Two Numbers : ");  
scanf("%d %d",&a,&b);  
int ret;
```

```

ret=max(a,b);

printf("Maximum Value is : %d\n",ret);

return 0;

}

```

Output:

The screenshot shows the Code::Blocks IDE interface. On the left is the Project Explorer with multiple projects listed. The main window displays the code for 'main.c'. The code reads two integers from the user, compares them, and prints the maximum value. The terminal window shows the execution of the program and its output.

```

main.c [p37] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
File Management Projects File main.c main.c x D:\CSE Assignment\p37\bin\Debug\p37.exe
1 #include <stdio.h>
2 int main()
3 {
4     int m;
5     printf("Enter Two Numbers : ");
6     scanf("%d", &m);
7     int n;
8     printf("Enter Two Numbers : ");
9     scanf("%d", &n);
10    if (m > n)
11    {
12        int a = m;
13        int b = n;
14        printf("Maximum Value is : %d", a);
15    }
16    else
17    {
18        int a = n;
19        int b = m;
20        printf("Maximum Value is : %d", a);
21    }
22    return 0;
}

```

Problem No:38

Problem Name : C program to find Factorial of a given number using Function.

Solution:

Input:

```

#include <stdio.h>

#include <stdlib.h>

int main()

{

    printf("Enter any integer number: ");

    printf("Factorial of the Given Number is: %d\n",fact());

    return 0;
}

```

```
}

int fact()

{

int i,fact=1,num;

scanf("%d",&num);

for(i=1; i<=num; i++)

{

fact=fact*i;

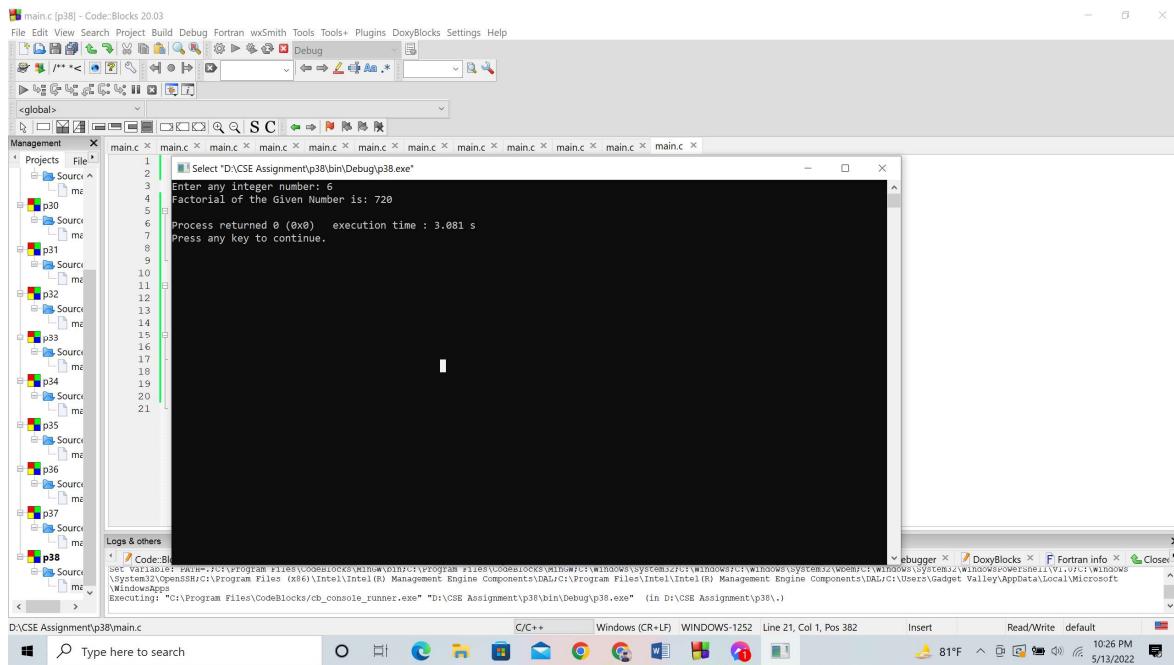
}

return fact;

return 0;

}
```

Output:



Problem No:39

Problem Name : C program to display Fibonacci Series using Function.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

int first=0,second=1,fibo=0,n;

printf("Enter a positive number: ");

scanf("%d",&n);

printf("Fibonacci Series: %d\n %d\n",first,second);

fibo=first+second;

while (fibo <=n)

{

printf(" %d\n",fibo);

first=second;

second=fibo;

fibo=first+second;

}

return 0; }
```

Output:

The screenshot shows the Code::Blocks IDE interface. The top menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, Doxygen, Settings, and Help. The main window displays the code for a Fibonacci series generator. In the bottom right corner of the code editor, there is a terminal window showing the output of the program's execution. The terminal output shows the user entering a value of 6, the program printing the Fibonacci series up to 6, and then exiting. The status bar at the bottom provides information about the file path (D:\CSE Assignment\p39\main.c), compiler (C/C++), operating system (Windows (CR+LF)), line number (Line 20, Col 1, Pos 343), and system details (Windows-1252, Insert, Read/Write, default, 81°F Haze, 10:30 PM, 5/13/2022).

Problem No:40

Problem Name : C program to display Sum of Natural Numbers.

Solution:

Input:

```
#include <stdio.h>

int main()

{
    int first=0,second=1,fibo=0,n;

    printf("Enter a positive number: ");

    scanf("%d",&n);

    printf("Fibonacci Series: %d\n %d\n",first,second);

    fibo=first+second;

    while (fibo <=n)

    {
        printf(" %d\n",fibo);

        first=second;

        second=fibo;

        fibo=first+second;
    }

    return 0;
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays a C source code file named 'main.c' with the following content:

```
#include <stdio.h>
int main()
{
    int first=0, second=1, fibo;
    printf("Enter a positive number: ");
    scanf("%d", &fibo);
    printf("Fibonacci Series: ");
    while (fibo<=100)
    {
        printf("%d ", fibo);
        fibo=fibo+second;
        second=fibo-second;
    }
    return 0;
}
```

The output window shows the execution of the program, printing the Fibonacci series up to 100. The taskbar at the bottom indicates the program is running in a terminal window titled 'D:\CSE Assignment\p40\main.c'.

Problem No:41

Problem Name : C program to display Sum of Even Numbers between 2-10.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

int num,sum=0,i;

printf("Enter the value of Number : ");

scanf("%d",&num);

for(i=2;i<=num;i=i+2)

{

sum=sum+i;

}

printf("Sum of Even Numbers : %d",sum);
```

```
return 0;
```

```
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. On the left, the Project Manager displays two projects: 'p40' and 'p41'. The 'main.c' file from 'p41' is open in the code editor. The code is as follows:

```
#include <stdio.h>
#include <math.h>
int main()
{
    int num,sum=0,i;
    printf("Enter the value of Number : ");
    scanf("%d",&num);
    for(i=1 ; i <=num ; i =i+2)
    {
        sum=sum+i;
    }
    printf("Sum of Even Numbers : %d",sum);
}
```

A terminal window shows the output of the program:

```
Enter the value of Number : 5
Sum of Even Numbers : 6
```

The status bar at the bottom indicates the file is 'D:\CSE Assignment\p41\main.c', the language is 'C/C++', the window title is 'Windows (CR+LF) - WINDOWS-1252', the line number is 'Line 17, Col 1', the position is 'Pos 243', and the status is 'Insert'.

Problem No:42

Problem Name : C program to display Sum of Odd Numbers between 1-10.

Solution:

Input:

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

int main()

{
    int num,sum=0,i;
    printf("Enter the value of Number : ");
    scanf("%d",&num);
    for(i=1 ; i <=num ; i =i+2)
    {

```

```

sum=sum+i;

}

printf("Sum of Odd Numbers = %d\n",sum);

return 0;
}

```

Output:

The screenshot shows the Code::Blocks IDE interface. In the center, there is a terminal window displaying the output of a C program. The program prompts the user to enter a number (9) and then prints the sum of odd numbers up to that point (25). The terminal window also shows the command to run the program ('./p42') and the path to the executable ('D:\CSE Assignment\p42\bin\Debug\p42.exe'). The status bar at the bottom provides system information like the date and time.

Problem No:43

Problem Name : C program to display the addition of two matrix

Solution:

Input:

```

#include <stdio.h>

#include <stdlib.h>

int main()

{

    int numOfRows, numOfCol, i, j;

    int A[10][10], B[10][10], C[10][10];

```

```
printf("Enter the number of Rows and Columns :");

scanf("%d %d",&numOfRows,&numOfcol);

//Scanning A Matrix

printf("Enter the elements of A matrix :\n");

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

{

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

{

printf("A[%d][%d]=",i,j);

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

}

printf("\n");

}

//Scanning B Matrix

printf("Enter the elements of B matrix:\n");

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

{

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

{

printf("B[%d][%d]=",i,j);

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

}

printf("\n");

}

//Printing A Matrix

printf("A = ");
```

```
for(i= 0; i<numOfRows ; i++)
{
    for(j=0 ; j<numOfcol ; j++)
    {
        printf("%d\t",A[i][j]);
    }
    printf("\n ");
}

//Printing B Matrix

printf("\nB = ");

for(i=0 ; i<numOfRows ; i++)
{
    for(j=0 ; j<numOfcol ; j++)
    {
        printf("%d\t",B[i][j]);
    }
    printf("\n ");
}

// ADDING THE MATRIX TO C= A+B

for(i=0 ; i<numOfRows ; i++)
{
    for(j=0 ; j<numOfcol ; j++)
    {
        C[i][j] = A[i][j] + B[i][j];
    }
}
```

```
//Printing C Matrix...C=A+B
```

```
printf("\n A+B = ");

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

{

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

{

printf("%d",C[i][j]);

}

printf("\t\n");

printf("\t");

}

return 0;
```

Output:

Problem No:44

Problem Name : C program to display the Fibonacci Series (using array).

Solution:

Input:

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

int main()
{
    int fibo[30], i, n;
    printf("How many Fibonacci Series? :\n");
    scanf("%d",&n);
    fibo[0]=0;
    fibo[1]=1;
    for(i=2 ; i<n ; i++)
    {
        fibo[i]= fibo[i-1] + fibo[i-2];
    }
    printf("\n");
    for(i=0 ; i<n ; i++)
    {
        printf("%d\t",fibo[i]);
    }
    return 0;
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays a C program named 'main.c' with code for generating a Fibonacci series. The code includes #include directives for stdio.h and stdlib.h, a main function that prompts for the number of terms, initializes an array 'fib' with values 1, 1, 2, 3, and then prints them. The output window shows the execution of the program and its results. The taskbar at the bottom shows the operating system environment.

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

int main()
{
    int n;
    printf("How many Fibonacci Series? :");
    scanf("%d", &n);
    int fib[4];
    fib[0] = 1;
    fib[1] = 1;
    fib[2] = 2;
    fib[3] = 3;
    for(i=0; i<n; i++)
    {
        printf("%d\n", fib[i]);
    }
    return 0;
}
```

Problem No:45

Problem Name : C program that can take some numbers and display maximum and minimum (using array).

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{ int num[100], n, i, max, min ;

printf("How many numbers? :\n");

scanf("%d",&n);

printf("Enter the values of numbers :\n");

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

{

scanf("%d",&num[i]);

}
```

```

max=num[0];

min=num[0];

for(i=1 ; i<n ; i++)

{

if(max < num[i])

max=num[i] ;

if (min > num[i])

min=num[i];

}

printf("Maximum =%d\n",max);

printf("Minimum =%d\n",min);

return 0;
}

```

Output:

The screenshot shows the Code::Blocks IDE interface. On the left is the Project Explorer with several projects listed under 'Workspace'. In the center is the Code Editor with the file 'main.c' open. The code implements a program to find the maximum and minimum values from a list of integers. The terminal window on the right displays the execution of the program, asking for input and then printing the results.

```

main.c [p45] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
D:\CSE Assignment\p45\bin\Debug\p45.exe
How many numbers? :
Enter the values of numbers :
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
Process returned 0 (0x0)   execution time : 13.686 s
Press any key to continue.
Maximum =9
Minimum =1

```

Problem No:46

Problem Name : C program to calculate the sum & average of given numbers and values of the given number from the user.

Solution:

Input:

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int a[100], sum=0, i, n;
    printf("How Many Numbers ? :\n");
    scanf("%d",&n);
    printf("Enter the value of indexes :\n ");
    for(i=0 ; i<n ; i++)
    {
        printf("a[%d]=",i);
        scanf("%d",&a[i]);
    }
    for(i=0 ; i<n ; i++)
    {
        sum=sum+a[i];
    }
    printf("The Sum is = %d\n",sum);
    printf("The Average is = %.2f\n",(float)sum/n);
    return 0;
}
```

Output:

The screenshot shows the Code::Blocks IDE interface. The main window displays a C code editor with the following content:

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int a[10];
    int i;
    printf("How Many Numbers : ");
    scanf("%d", &i);
    printf("Enter %d numbers\n", i);
    for(i=0 ; i<i ; i++)
    {
        scanf("%d", &a[i]);
    }
    printf("The Sum is = %d", sum=a[0]+a[1]+a[2]+a[3]);
    printf("The Average is = %f", (float)sum/4);
    return 0;
}
```

The output window shows the execution results:

```
How Many Numbers : 4
Enter 4 numbers
1
2
3
4
The Sum is = 10
The Average is = 3.00
```

The status bar at the bottom indicates the file path D:\CSE Assignment\p46\main.c, the code language C/C++, the operating system Windows (CR+LF), the code page WINDOWS-1252, the current line 20, column 49, position 393, and the date/time 5/14/2022 1:51 PM.

Problem No:47

Problem Name : C program to find the length of a string using strlen() function.

Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

char s1 []="Mehedi Hasan" ;

printf("your name=%s\n",s1);

int length = strlen(s1) ;

printf("Length = %d\n",length);

return 0;

}
```

Output:

```
#include <stdio.h>
#include <string.h>
int main()
{
    char s1[30];
    printf("Enter your full name : ");
    gets(s1);
    printf("Full name is = %s\n",s1);
    int i= 0 ;
    while(s1[i] != '\0')
    {
        printf("%c\n",s1[i]);
    }
}
```

Problem No:48

Problem Name : C program that input a name and display the string and display string character wise.

Solution:

Input:

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

int main()

{ char s1[30];

printf("Enter your full name : ");

gets(s1);

printf("Full name is = %s\n",s1);

int i= 0 ;

while(s1[i] != '\0')

{

printf("%c\n",s1[i]);
```

```

i++ ;
}

return 0;
}

```

Output:

The screenshot shows the Code::Blocks IDE interface. On the left is the 'Management' panel displaying a workspace with multiple projects (p40, p41, p42, p43, p44, p45, p46, p47, p48) and their source files. The main editor window contains the following C code:

```

#include <stdio.h>
int main()
{
    char name[100];
    printf("Enter your full name : ");
    gets(name);
    printf("Full name is : %s", name);
    return 0;
}

```

Below the code, the terminal window shows the execution results:

```

Process returned 0 (0x0)   execution time : 7.297 s
Press any key to continue.

```

The system tray at the bottom right shows the date as 5/14/2022 and the time as 2:00 PM.

Problem No:49

Problem Name : C program to copy string using strcpy() function.

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```
char source[50];
```

```
printf("Input\t");
```

```
gets(source);
```

```
char target[20];  
  
strcpy(target,source);  
  
printf("Source String =%s\n",source);  
  
printf("Target String =%s\n",target);  
  
return 0;  
  
}
```

Output:

D:\CSE Assignment\p49\main.c C++ Windows (CR+LF) WINDOWS-1252 Line 15, Col 1, Pos 253 Insert Read/Write default 90°F Haze 2:05 PM 5/14/2022

Problem No:50

Problem Name : C program of concatenation string by using strcat() function.

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```
char str1[50];
```

```

printf("first Name=");

gets(str1);

char str2[50];

printf("Last Name=");

gets(str2);

strcat(str1,str2);

printf("Concatenation String = %s\n",str1);

return 0;

}

```

Output:

The screenshot shows the Code::Blocks IDE interface. On the left is the project tree, and the main workspace contains a terminal window. The terminal window displays the following text:

```

First Name=Mehedi
Last Name=Hasan
Concatenation String = MehediHasan
Press any key to continue.

```

Problem No:51

Problem Name : C program to compare strings whether they are equal or not by using strcmp() function.

Solution:

Input:

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

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```
char str1[50];
```

```
printf("first Name=");
```

```
gets(str1);
```

```
char str2[50];
```

```
printf("Last Name=");
```

```
gets(str2);
```

```
int d= strcmp(str1,str2);
```

```
if (d==0)
```

```
{
```

```
printf("String are equal.");
```

```
}
```

```
else
```

```
printf("Strings are not equal.");
```

```
return 0; }
```

Output:

The screenshot shows the Code::Blocks IDE interface. On the left, the project tree displays multiple source files named 'main.c' under various project folders. The main code editor window shows the C program provided above. The output window to the right shows the execution results:

```
First Name=Mehedi
Last Name=Hasan
Strings are not equal.
Process returned 0 (0x0) execution time : 7.240 s
Press any key to continue.
```

The status bar at the bottom indicates the file is 'D:\CSE Assignment\p51\main.c', the compiler is 'C/C++', the encoding is 'Windows (CR+LF)', the code page is 'WINDOWS-1252', the line is 'Line 21, Col 1', the position is 'Pos 330', and the build configuration is 'Insert'.

Problem No:52

Problem Name : C program to reverse a string by using strrev() function. Solution:

Input:

```
#include <stdio.h>

#include <stdlib.h>

int main()

{

    char str1[50];

    printf("first Name=");

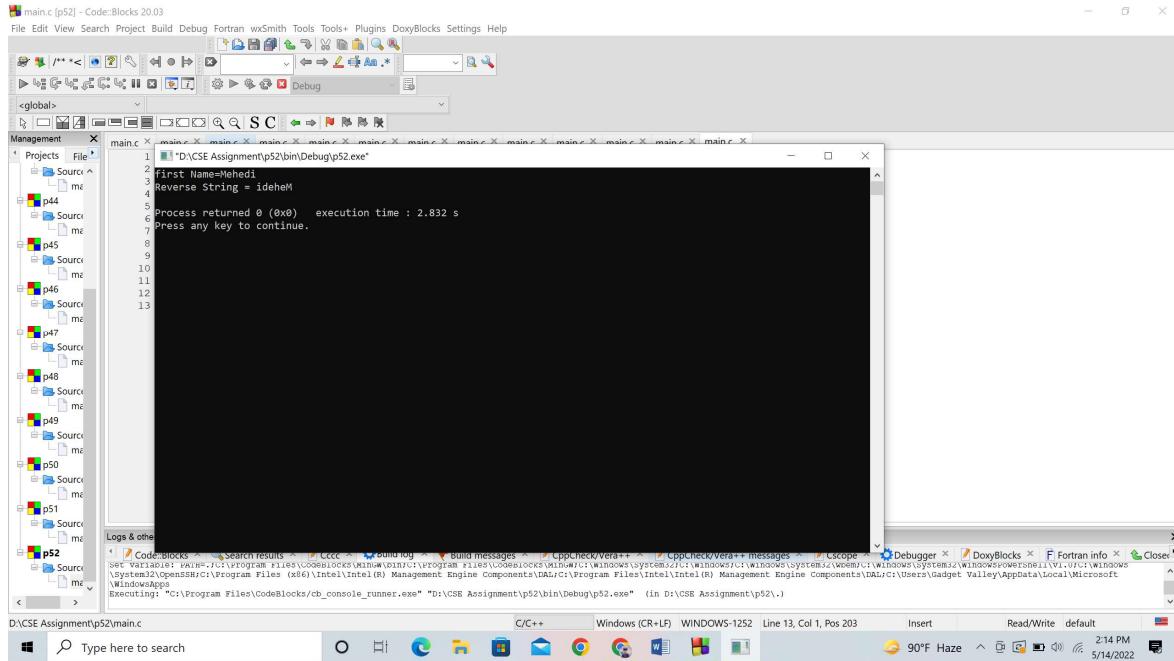
    gets(str1);

    strrev(str1);

    printf("Reverse String = %s\n",str1);

    return 0;
}
```

} Output:



```
main.c [p52] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
Management X
Projects File X
Source X
main.c X
Source X
Logs & other X
CodeBlocks - Search results CCCC Build messages CppCheck/Vera+ CppCheck/Vera+ messages CppCheck/Vera+ messages Debugger Doxygen Fortran info F Fortran info X
Set environment variable: C:\Program Files (x86)\CodeBlocks\MinGW\bin;C:\Windows\system32;C:\Windows;C:\Windows\system32\WBEM\;C:\Windows\system32\WindowsPowerShell\v1.0\;C:\Windows\System32\OpenSSH\;C:\Program Files (x86)\Intel\Intel(R) Management Engine Components\IBMC\;C:\Program Files\Intel\Intel(R) Management Engine Components\IBMC\;C:\Users\Aduya\appdata\local\Microsoft\WindowsApps
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "D:\CSE Assignment\p52\bin\Debug\p52.exe" (In D:\CSE Assignment\p52\)
Type here to search
C/C++ Windows (CR+LF) WINDOWS-1252 Line 13, Col 1, Pos 203 Insert Read/Write default
2:14 PM 90°F Haze 5/14/2022
```

Problem No:53

Problem Name :: C program to swap two strings.

Solution:

Input:

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    char str1[50];
    printf("first Name=");
    gets(str1);
    char str2[50];
    printf("Last Name=");
    gets(str2);
    char temp[100];
    strcpy(temp,str1);
    strcpy(str1,str2);
    strcpy(str2,temp);
    printf("\nAfter Swapping\n");
    printf("First Name = %s\n",str1);
    printf("Last name = %s\n",str2);
    return 0;
}
```

Output:

```
#include <stdio.h>
#include <string.h>
int main()
{
    char str[100];
    gets(str);
    int i, len = strlen(str);
    for(i=0; i<len; i++)
    {
        if(str[i] >='A' && str[i] <='Z')
            str[i] = str[i] + 32;
    }
    printf("%s", str);
}
```

D:\CSE Assignment\p53\main.c

Problem No:54

Problem Name : C program to count the number of Vowels,Consonants,Digits & Letter.

Solution:

Input:

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

int main()

{
    char name[100],ch;
    int i, vowel, consonant, digit,letter ,other ;
    digit=consonant=vowel=other=letter= 0;
    printf("Enter any sentence : ");
    gets(name);
    while((ch=name[i])!='\0')
    {
        if(ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' || ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=='U')
            vowel++;
        else if(ch=='b' || ch=='c' || ch=='d' || ch=='f' || ch=='g' || ch=='h' || ch=='j' || ch=='k' || ch=='l' || ch=='m' || ch=='n' || ch=='p' || ch=='q' || ch=='r' || ch=='s' || ch=='t' || ch=='v' || ch=='w' || ch=='x' || ch=='y' || ch=='z' || ch=='B' || ch=='C' || ch=='D' || ch=='F' || ch=='G' || ch=='H' || ch=='J' || ch=='K' || ch=='L' || ch=='M' || ch=='N' || ch=='P' || ch=='Q' || ch=='R' || ch=='S' || ch=='T' || ch=='V' || ch=='W' || ch=='X' || ch=='Y' || ch=='Z')
            consonant++;
        else if(ch=='0' || ch=='1' || ch=='2' || ch=='3' || ch=='4' || ch=='5' || ch=='6' || ch=='7' || ch=='8' || ch=='9')
            digit++;
        else
            other++;
    }
    printf("Number of Vowels : %d", vowel);
    printf("Number of Consonants : %d", consonant);
    printf("Number of Digits : %d", digit);
    printf("Number of Other Characters : %d", other);
}
```

```
if(ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' || ch=='A' || ch=='E' ||  
ch=='I' || ch=='O'  
|| ch=='U')  
vowel++;  
  
else if(ch>='a' && ch<='z' || ch>='A' && ch<='Z')  
consonant++;  
  
else if(ch>='0' && ch<='9')  
digit++;  
  
else if (ch==' ')  
other++;  
  
i++;  
}  
  
letter++;  
}  
  
printf(" Vowel Counted = %d\n",vowel);  
  
printf(" Consonant Counted = %d\n",consonant);  
  
printf(" Digit Counted = %d\n",digit);  
  
printf(" Letters & Space Counted = %d\n",letter);  
  
printf(" Space & Special Character Counted = %d\n",other);  
  
return 0;  
}
```

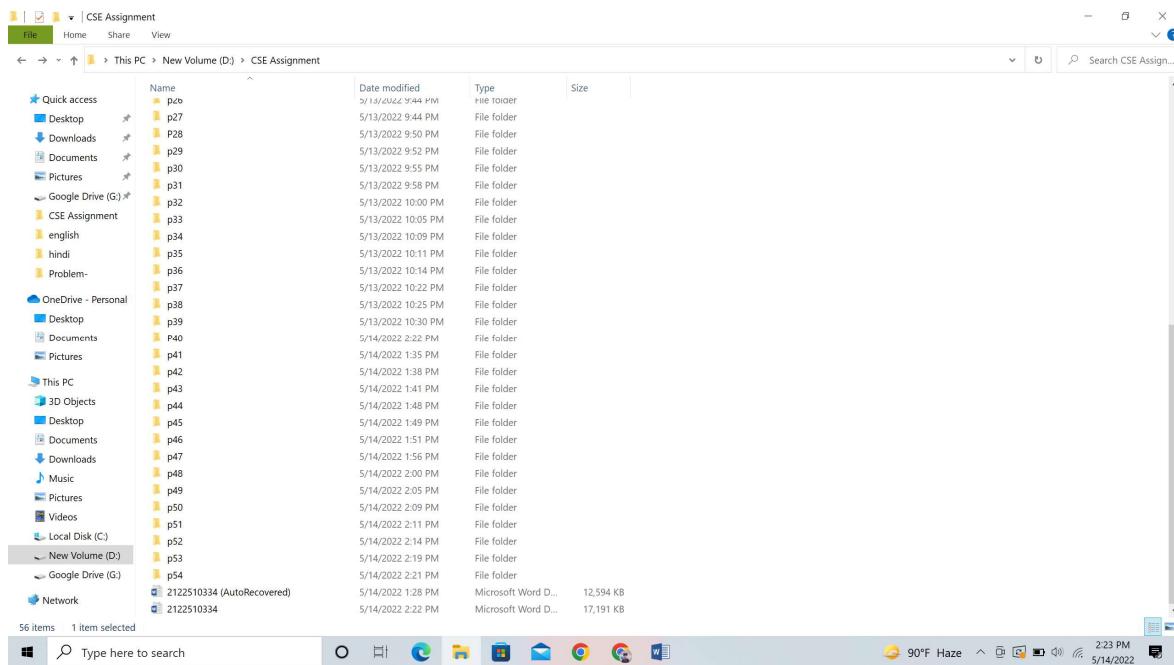
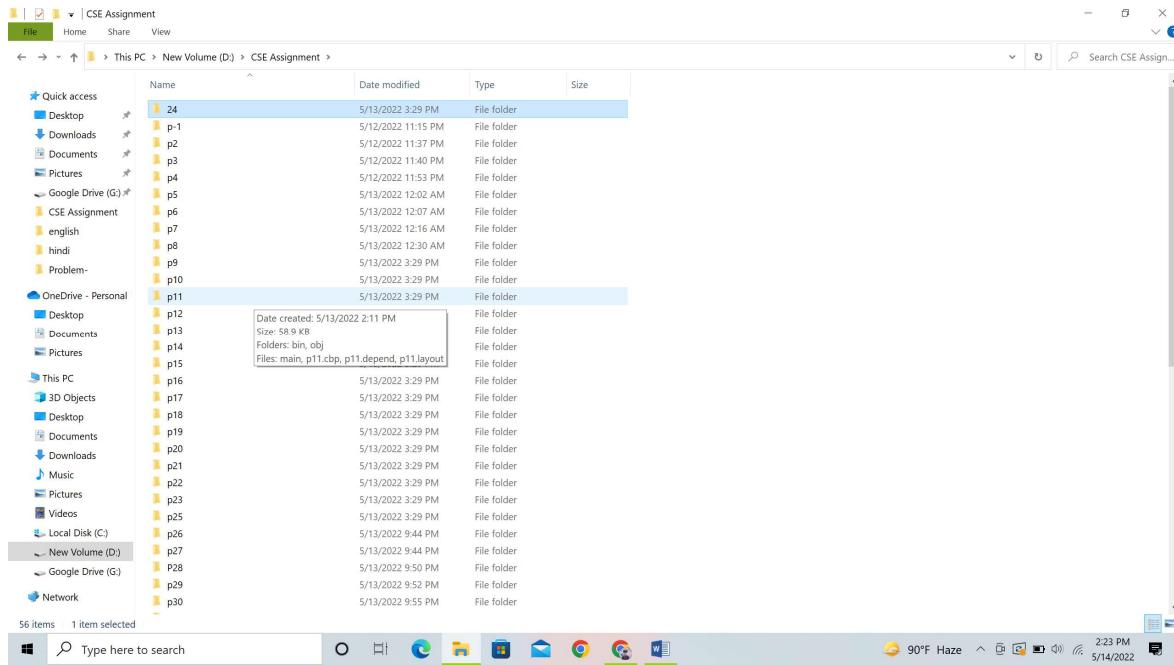
Output:

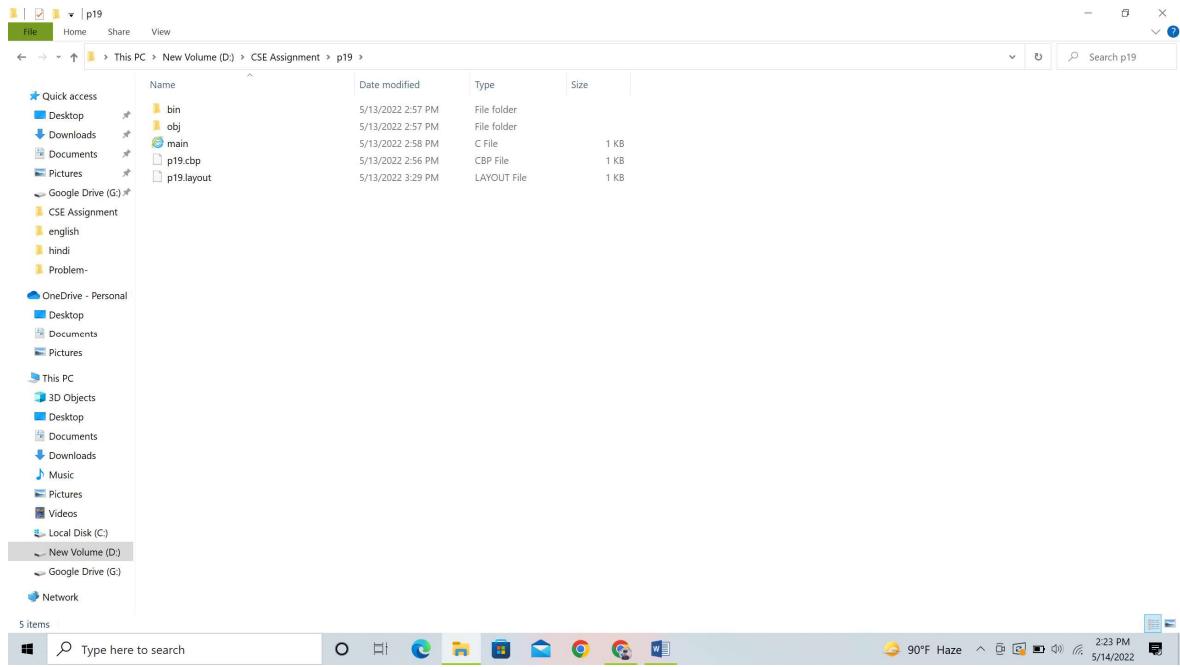
The screenshot shows the Code::Blocks IDE interface. The main window displays a terminal session with the following output:

```
main.c [p54] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran Tools Tools+ Plugins Doxygen Settings Help
Management X main.c X D:\CSE Assignment\p54\bin\Debug\p54.exe
Projects File main.c X Enter any sentence : Mehedi HASAN wants to be a programmer
1 Vowel Counted = 12
2 Consonant Counted = 19
3 Digit Counted = 8
4 Letters & Space Counted = 37
5 Space & Special Character Counted = 6
6
7 Process returned 0 (0x0) execution time : 24.476 s
8 Press any key to continue.
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
```

The terminal window title is "D:\CSE Assignment\p54\bin\Debug\p54.exe". The status bar at the bottom shows the path "D:\CSE Assignment\p54\main.c", file type "C/C++", encoding "Windows (CR+LF)", line "25", column "544", and the date/time "5/14/2022 2:22 PM".

Problem sove .cpp file list.





Thank You