Chandpur Science and Technology University

Department of Computer Science and Engineering

LAB ASSIGNMENT #3

C Lab Assignment Submitted By:

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Submitted To:

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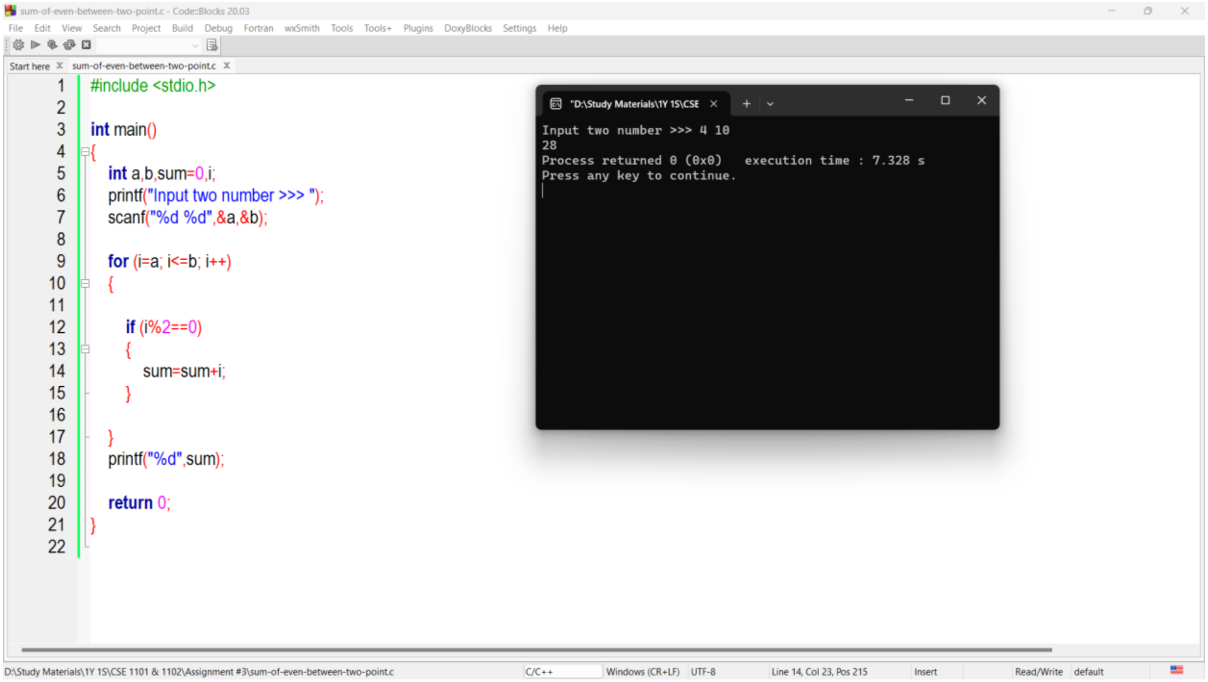
Lab Date:

Submission Date: 10/12/2023

Marks & Signature

Problem No – 1

Write a program to input two integer numbers and display the sum of even numbers between these two input numbers.

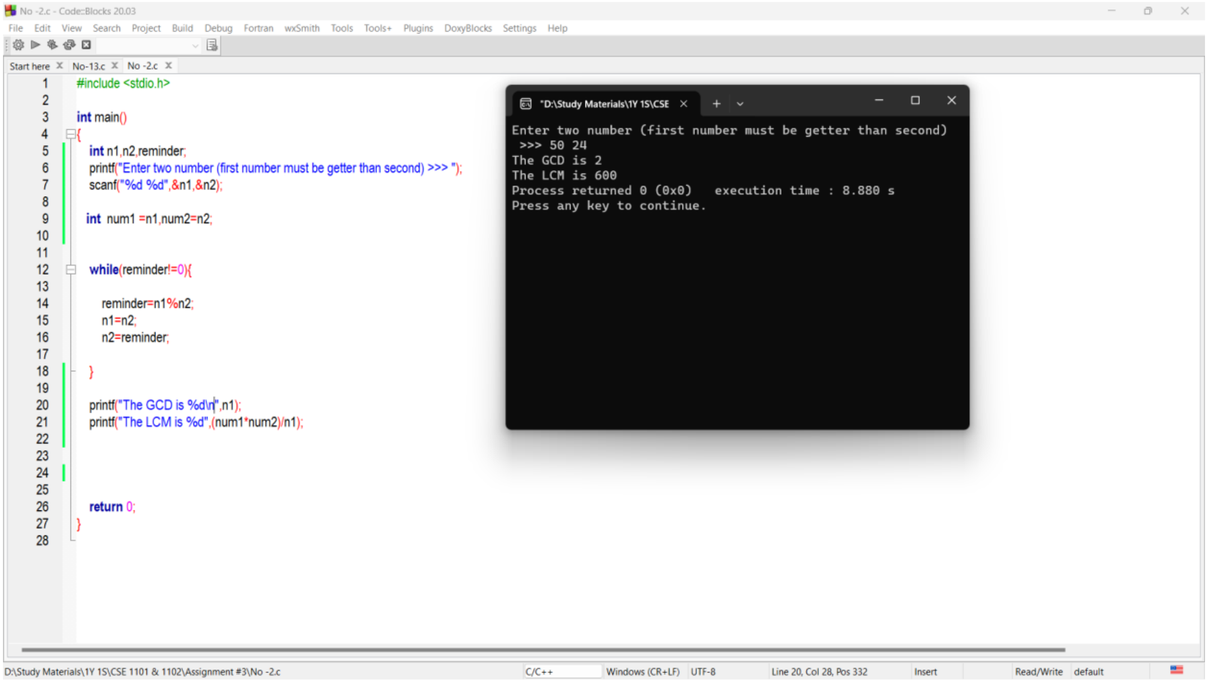

sum-of-even-between-two-point.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here
sum-of-even-between-two-point.c
"D:\Study Materials\1Y 1S\CSE
D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\sum-of-even-between-two-point.c
C/C++
Windows (CR+LF)
UTF-8
Line 14, Col 23, Pos 215
Insert
Read/Write
default

```c
#include <stdio.h>

int main()
{
    int a,b,sum=0,i;
    printf("Input two number >>> ");
    scanf("%d %d",&a,&b);

    for (i=a; i<=b; i++)
    {

        if (i%2==0)
        {
            sum=sum+i;
        }

    }
    printf("%d",sum);

    return 0;
}
```

```
Input two number >>> 4 10
28
Process returned 0 (0x0)   execution time : 7.328 s
Press any key to continue.
```

Problem No – 2

Write a program to find GCD (greates common divisor or HCF) and LCM (least common multiple) of two numbers.



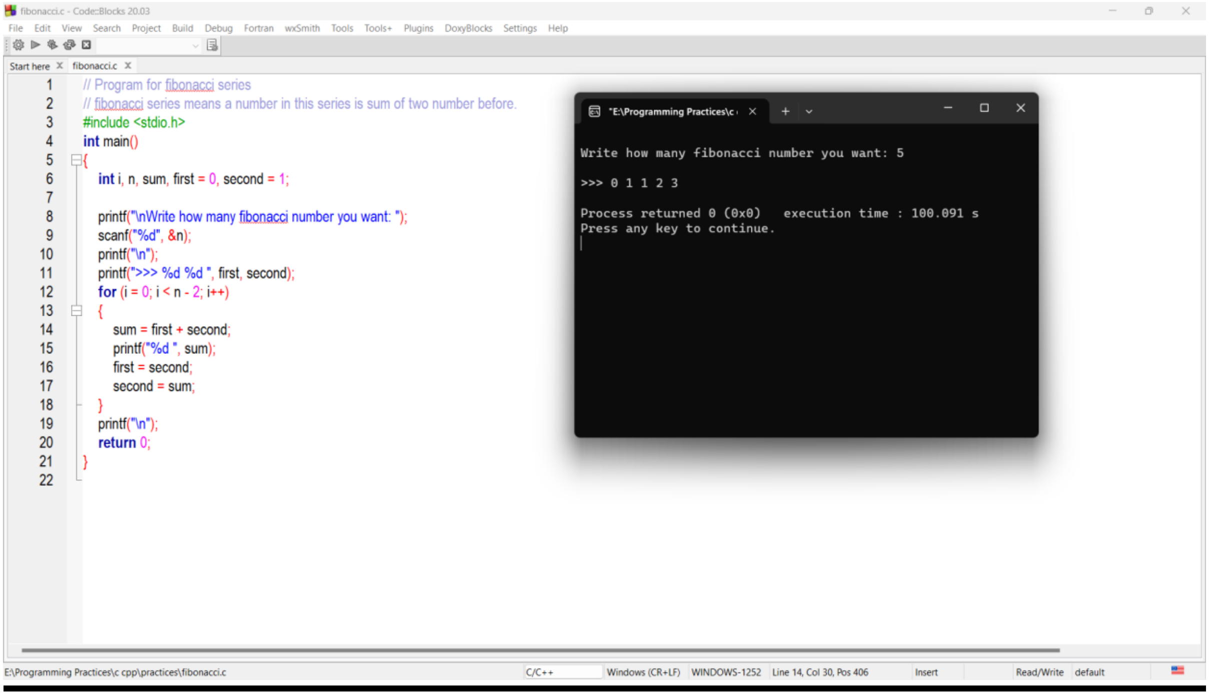
No -2.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here
No-13.c
No -2.c
"D:\Study Materials\1Y 1S\CSE

```c
#include <stdio.h>

int main()
{
    int n1,n2,reminder;
    printf("Enter two number (first number must be getter than second) >>> ");
    scanf("%d %d",&n1,&n2);

   int  num1 =n1,num2=n2;


    while(reminder!=0){

       reminder=n1%n2;
       n1=n2;
       n2=reminder;

    }

    printf("The GCD is %d\n",n1);
    printf("The LCM is %d",(num1*num2)/n1);




    return 0;
}

```

```
Enter two number (first number must be getter than second)
 >>> 50 24
The GCD is 2
The LCM is 600
Process returned 0 (0x0)   execution time : 8.880 s
Press any key to continue.
```

Problem No – 3

Write a program to print the Fibonacci series up to n terms where n is user input.

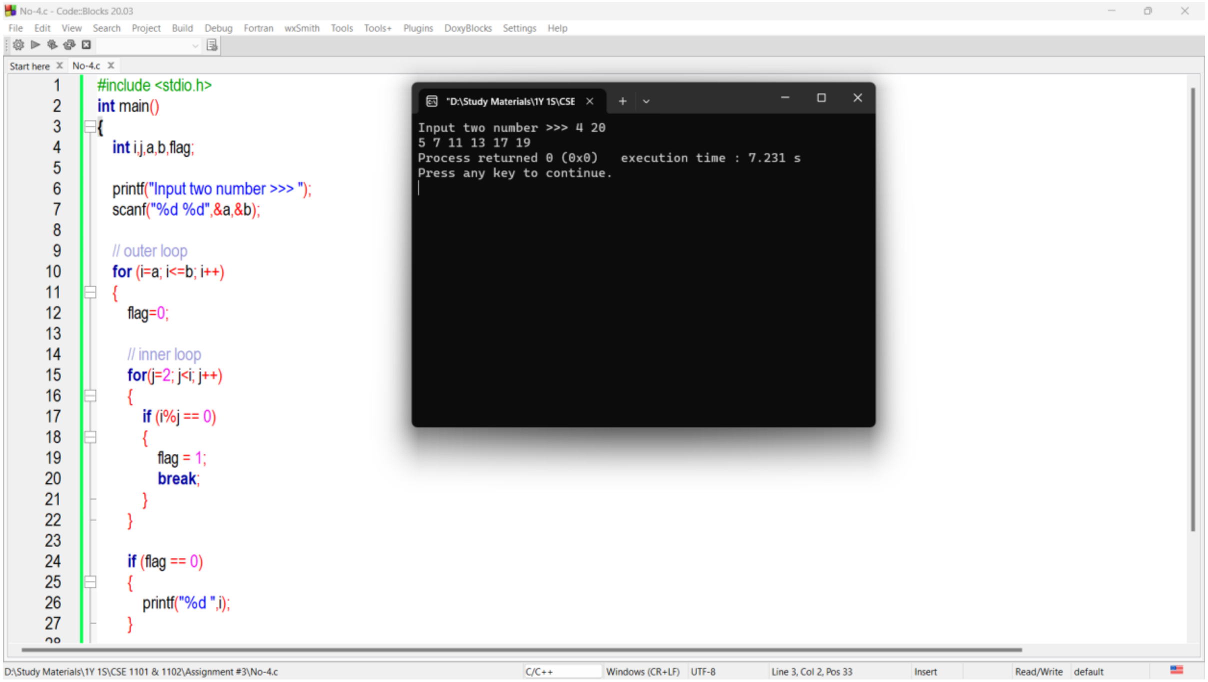

fibonacci.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here
fibonacci.c
"E:\Programming Practices\c

```c
// Program for fibonacci series
// fibonacci series means a number in this series is sum of two number before.
#include <stdio.h>
int main()
{
    int i, n, sum, first = 0, second = 1;

    printf("\nWrite how many fibonacci number you want: ");
    scanf("%d", &n);
    printf("\n");
    printf(">>> %d %d ", first, second);
    for (i = 0; i < n - 2; i++)
    {
        sum = first + second;
        printf("%d ", sum);
        first = second;
        second = sum;
    }
    printf("\n");
    return 0;
}
```

```
Write how many fibonacci number you want: 5

>>> 0 1 1 2 3

Process returned 0 (0x0)   execution time : 100.091 s
Press any key to continue.
```

Problem No – 4

Write a program to determine all prime numbers within the range [a ...b] where a & b are user input.


No-4.c - Code::Blocks 20.03
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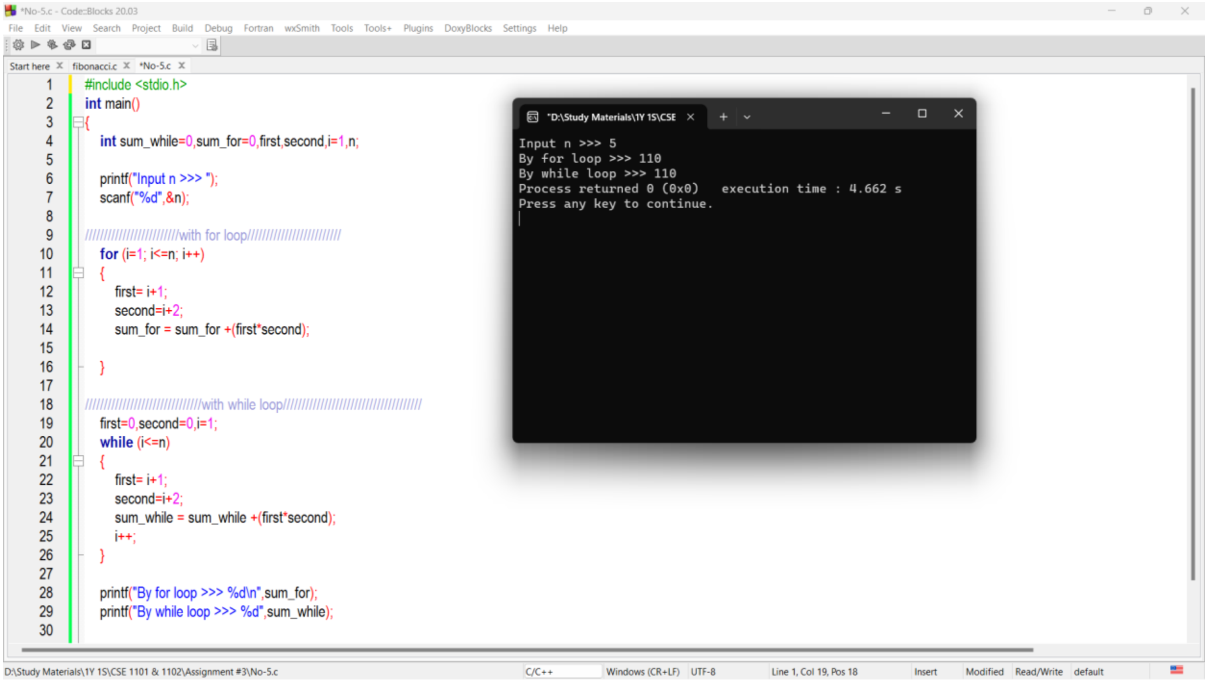
No-4.c
"D:\Study Materials\1Y 1S\CSE
D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\No-4.c
C/C++
Windows (CR+LF)
UTF-8
Line 3, Col 2, Pos 33
Insert
Read/Write
default

```c
#include <stdio.h>
int main()
{
    int i,j,a,b,flag;

    printf("Input two number >>> ");
    scanf("%d %d",&a,&b);

    // outer loop
    for (i=a; i<=b; i++)
    {
        flag=0;

        // inner loop
        for(j=2; j<i; j++)
        {
            if (i%j == 0)
            {
                flag = 1;
                break;
            }
        }

        if (flag == 0)
        {
            printf("%d ",i);
        }
```

```
Input two number >>> 4 20
5 7 11 13 17 19
Process returned 0 (0x0)   execution time : 7.231 s
Press any key to continue.
```

Problem No – 5

Write a program to find, first using a ‘while’ loop and then a ‘for’ loop, the sum of first n terms (n >= 1) of the series 2x3, 3x4, 4x5, …, (n+1)x(n+2). You need to verify that you get the same result in both the cases.


*No-5.c - Code::Blocks 20.03
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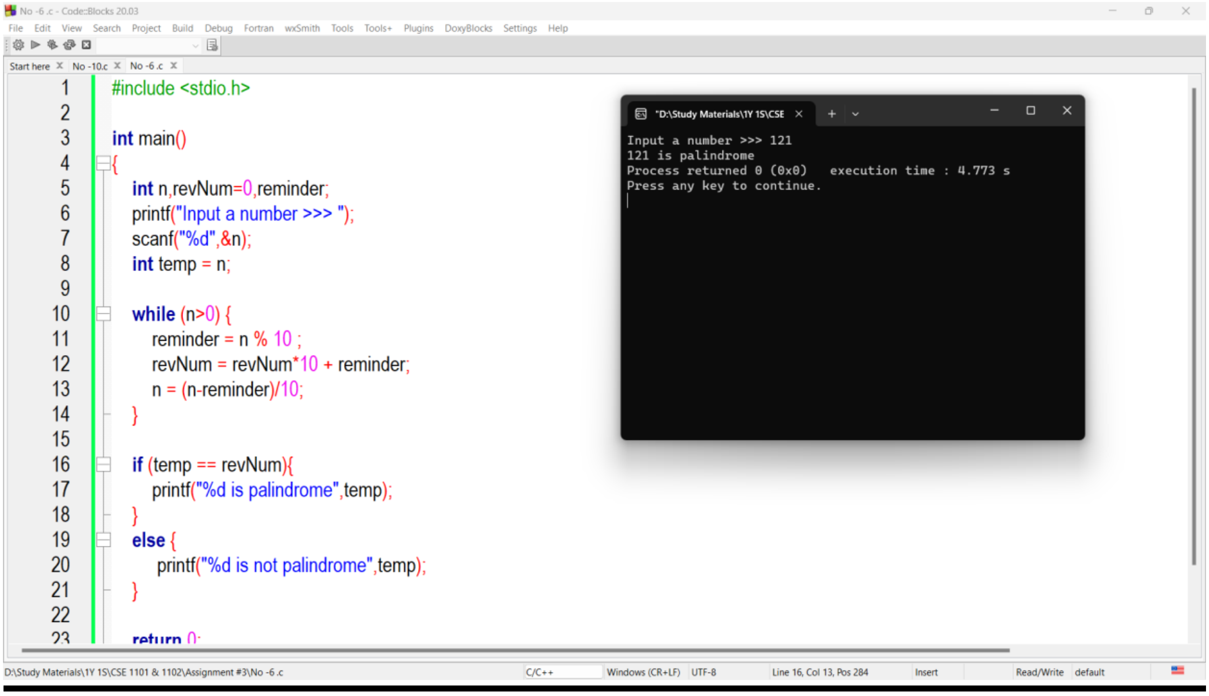
Start here
fibonacci.c
*No-5.c
"D:\Study Materials\1Y 1S\CSE
D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\No-5.c
C/C++
Windows (CR+LF)
UTF-8
Line 1, Col 19, Pos 18
Insert
Modified
Read/Write
default

```c
#include <stdio.h>
int main()
{
    int sum_while=0,sum_for=0,first,second,i=1,n;

    printf("Input n >>> ");
    scanf("%d",&n);

///////////////////////with for loop///////////////////////
    for (i=1; i<=n; i++)
    {
        first= i+1;
        second=i+2;
        sum_for = sum_for +(first*second);

    }

/////////////////////////////with while loop/////////////////////////////////
    first=0,second=0,i=1;
    while (i<=n)
    {
        first= i+1;
        second=i+2;
        sum_while = sum_while +(first*second);
        i++;
    }

    printf("By for loop >>> %d\n",sum_for);
    printf("By while loop >>> %d",sum_while);

```

```
Input n >>> 5
By for loop >>> 110
By while loop >>> 110
Process returned 0 (0x0)   execution time : 4.662 s
Press any key to continue.
```

Problem No – 6

Write a program to check whether a given integer is palindrome or not. [*121 is palindrome but 123 is not*]



No -6 .c - Code::Blocks 20.03
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Start here
No -10.c
No -6 .c

```c
#include <stdio.h>

int main()
{
    int n,revNum=0,reminder;
    printf("Input a number >>> ");
    scanf("%d",&n);
    int temp = n;

    while (n>0) {
        reminder = n % 10 ;
        revNum = revNum*10 + reminder;
        n = (n-reminder)/10;
    }

    if (temp == revNum){
        printf("%d is palindrome",temp);
    }
    else {
         printf("%d is not palindrome",temp);
    }

    return 0;
```

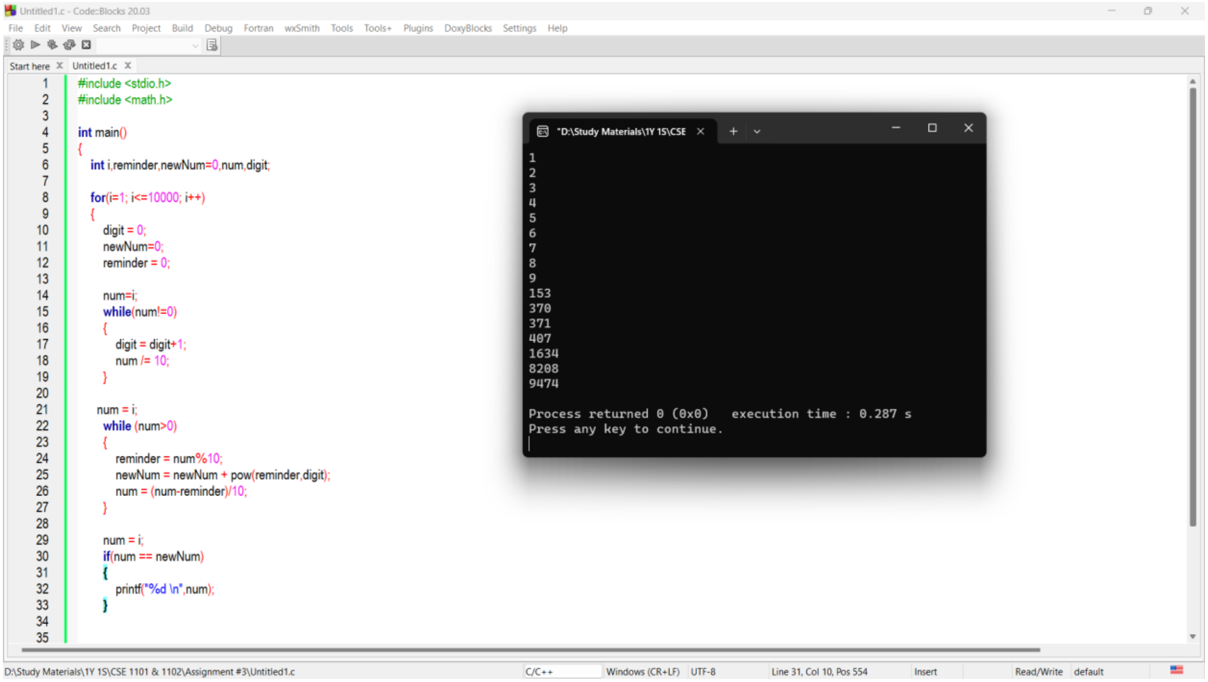
"D:\Study Materials\1Y 1S\CSE

```
Input a number >>> 121
121 is palindrome
Process returned 0 (0x0)   execution time : 4.773 s
Press any key to continue.
```

D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\No -6 .c
C/C++
Windows (CR+LF)
UTF-8
Line 16, Col 13, Pos 284
Insert
Read/Write
default

Problem No – 7

Write a program to print out all Armstrong numbers between 1 and 10000. [Example, 153 = (1*1*1) + (5*5*5) + (3*3*3)].


Untitled1.c - Code::Blocks 20.03
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Untitled1.c
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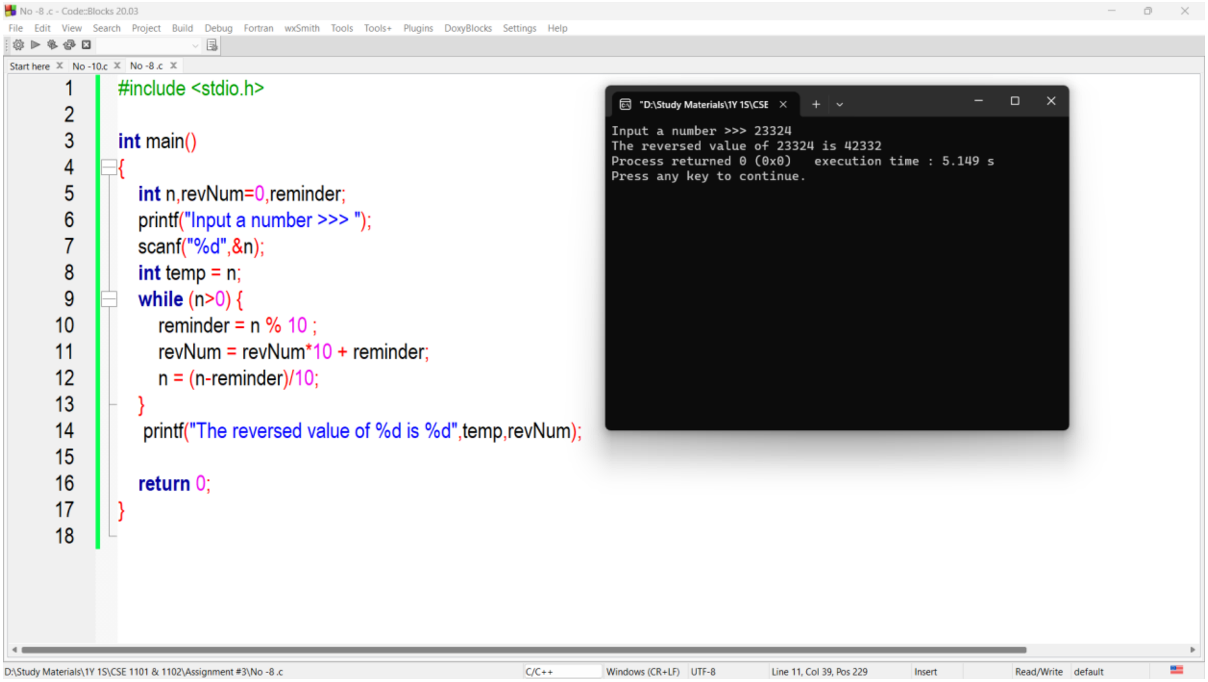
D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\Untitled1.c
C/C++
Windows (CR+LF)
UTF-8
Line 31, Col 10, Pos 554
Insert
Read/Write
default

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

int main()
{
   int i,reminder,newNum=0,num,digit;

   for(i=1; i<=10000; i++)
   {
      digit = 0;
      newNum=0;
      reminder = 0;

      num=i;
      while(num!=0)
      {
         digit = digit+1;
         num /= 10;
      }

     num = i;
      while (num>0)
      {
         reminder = num%10;
         newNum = newNum + pow(reminder,digit);
         num = (num-reminder)/10;
      }

      num = i;
      if(num == newNum)
      {
         printf("%d \n",num);
      }

```

```
1
2
3
4
5
6
7
8
9
153
370
371
407
1634
8208
9474

Process returned 0 (0x0)   execution time : 0.287 s
Press any key to continue.
```

Problem No – 8

Write a program to reverse a given number using while loop.



No -8 .c - Code::Blocks 20.03
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Start here
No -10.c
No -8 .c
"D:\Study Materials\1Y 1S\CSE

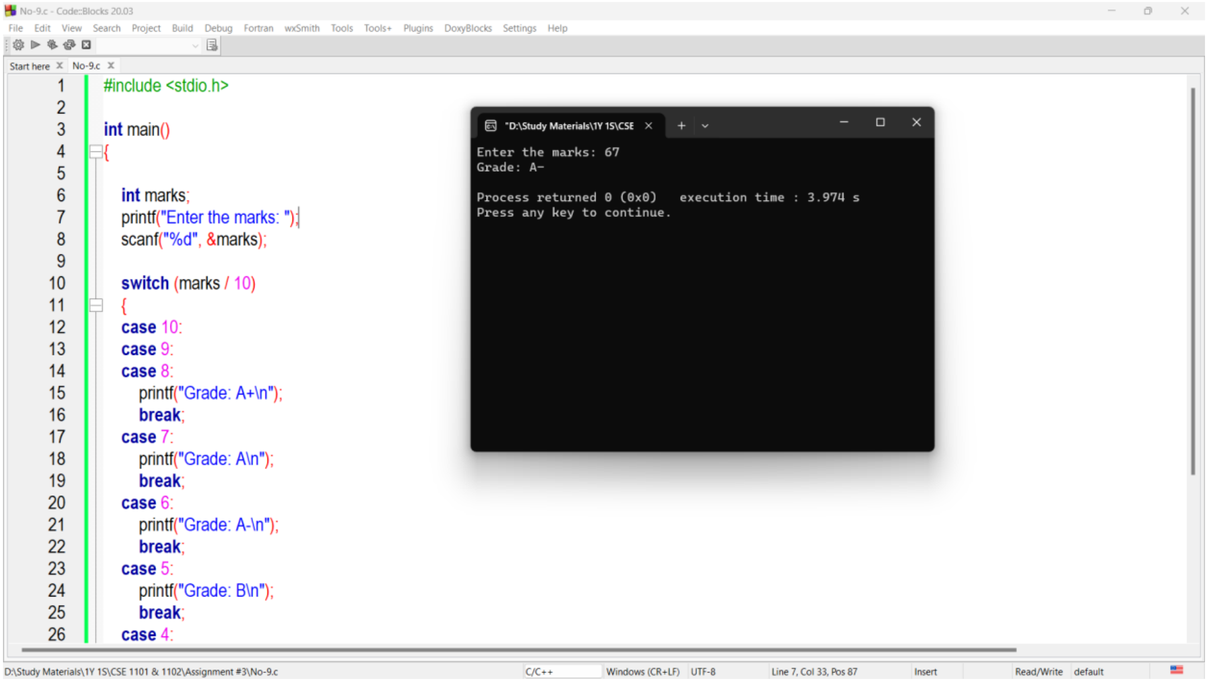
```c
#include <stdio.h>

int main()
{
    int n,revNum=0,reminder;
    printf("Input a number >>> ");
    scanf("%d",&n);
    int temp = n;
    while (n>0) {
        reminder = n % 10 ;
        revNum = revNum*10 + reminder;
        n = (n-reminder)/10;
    }
     printf("The reversed value of %d is %d",temp,revNum);

    return 0;
}
```

```
Input a number >>> 23324
The reversed value of 23324 is 42332
Process returned 0 (0x0)   execution time : 5.149 s
Press any key to continue.
```

D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\No -8 .c
C/C++
Windows (CR+LF)
UTF-8
Line 11, Col 39, Pos 229
Insert
Read/Write
default

Problem No – 9

Write a program to find a grade of given marks using switch case statement.


No-9.c - Code::Blocks 20.03
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No-9.c
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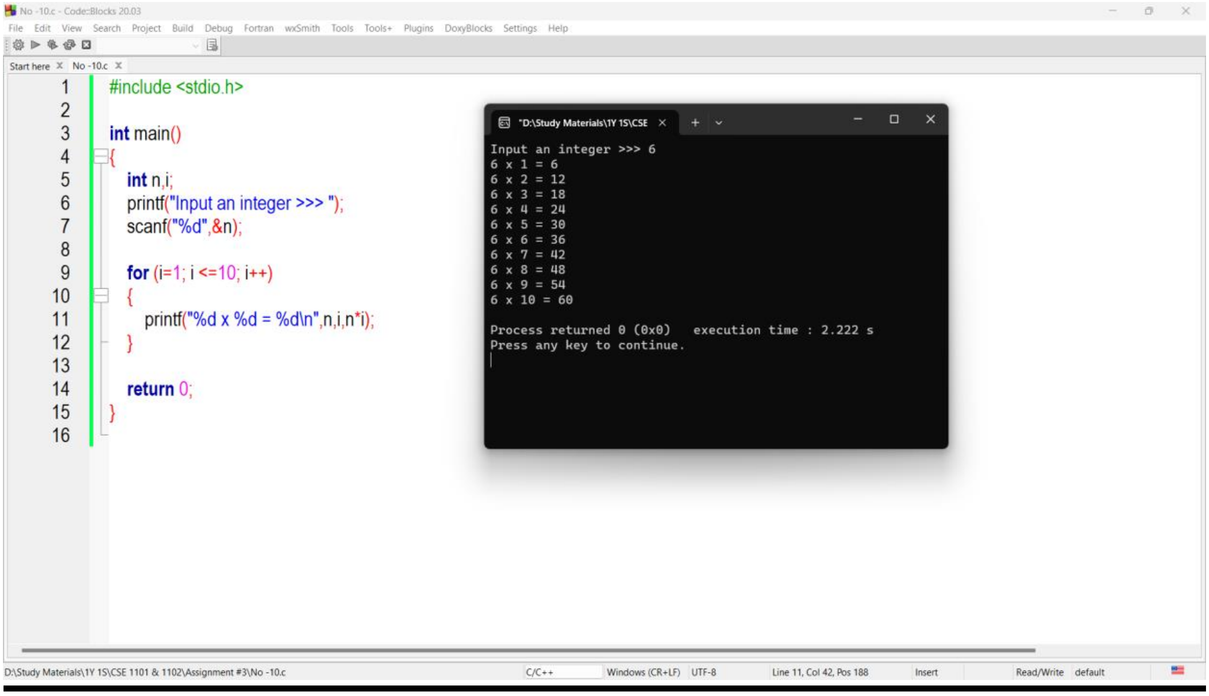
D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\No-9.c
C/C++
Windows (CR+LF)
UTF-8
Line 7, Col 33, Pos 87
Insert
Read/Write
default

```c
#include <stdio.h>

int main()
{

    int marks;
    printf("Enter the marks: ");
    scanf("%d", &marks);

    switch (marks / 10)
    {
    case 10:
    case 9:
    case 8:
        printf("Grade: A+\n");
        break;
    case 7:
        printf("Grade: A\n");
        break;
    case 6:
        printf("Grade: A-\n");
        break;
    case 5:
        printf("Grade: B\n");
        break;
    case 4:
```

```
Enter the marks: 67
Grade: A-

Process returned 0 (0x0)   execution time : 3.974 s
Press any key to continue.
```

Problem No – 10

Write a program in C to display the multiplication table for a given integer.


No -10.c - Code::Blocks 20.03
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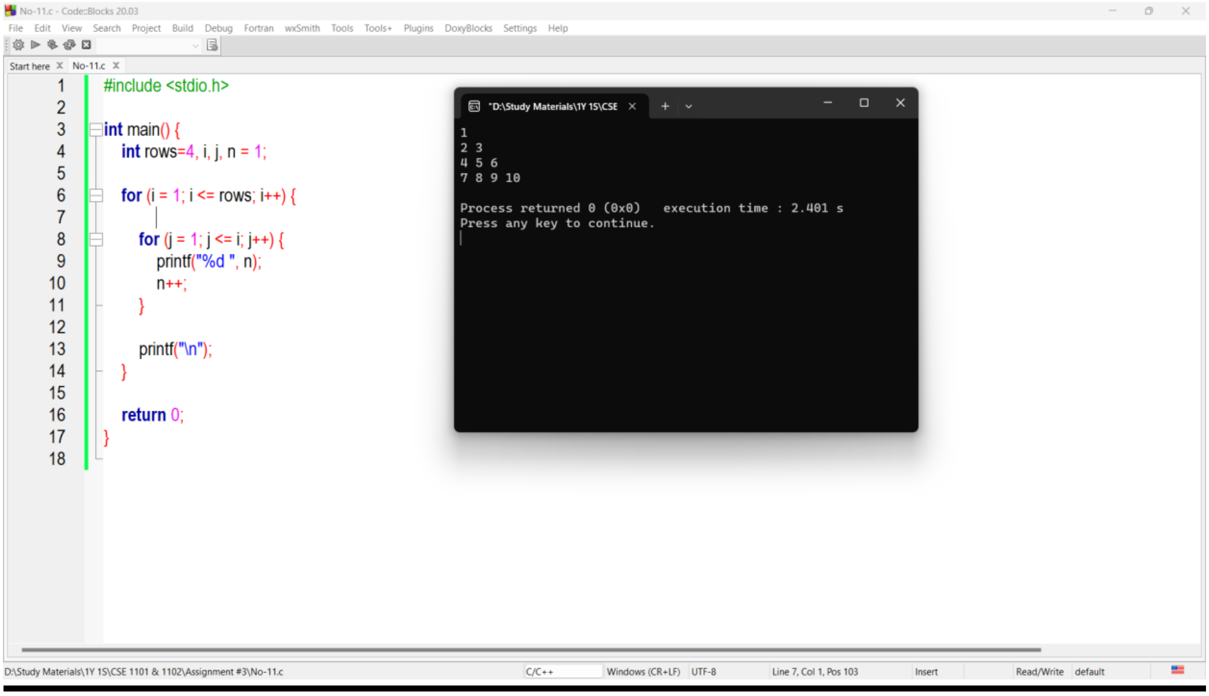
Start here
No -10.c
"D:\Study Materials\1Y 1S\CSE
D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\No -10.c
C/C++
Windows (CR+LF)
UTF-8
Line 11, Col 42, Pos 188
Insert
Read/Write
default

```c
#include <stdio.h>

int main()
{
    int n,i;
    printf("Input an integer >>> ");
    scanf("%d",&n);

    for (i=1; i <=10; i++)
    {
        printf("%d x %d = %d\n",n,i,n*i);
    }

    return 0;
}
```

```
Input an integer >>> 6
6 x 1 = 6
6 x 2 = 12
6 x 3 = 18
6 x 4 = 24
6 x 5 = 30
6 x 6 = 36
6 x 7 = 42
6 x 8 = 48
6 x 9 = 54
6 x 10 = 60

Process returned 0 (0x0)   execution time : 2.222 s
Press any key to continue.
```

Problem No – 11

Write a program in C to make such a pattern like a right angle triangle with the number increased by 1.


No-11.c - Code::Blocks 20.03
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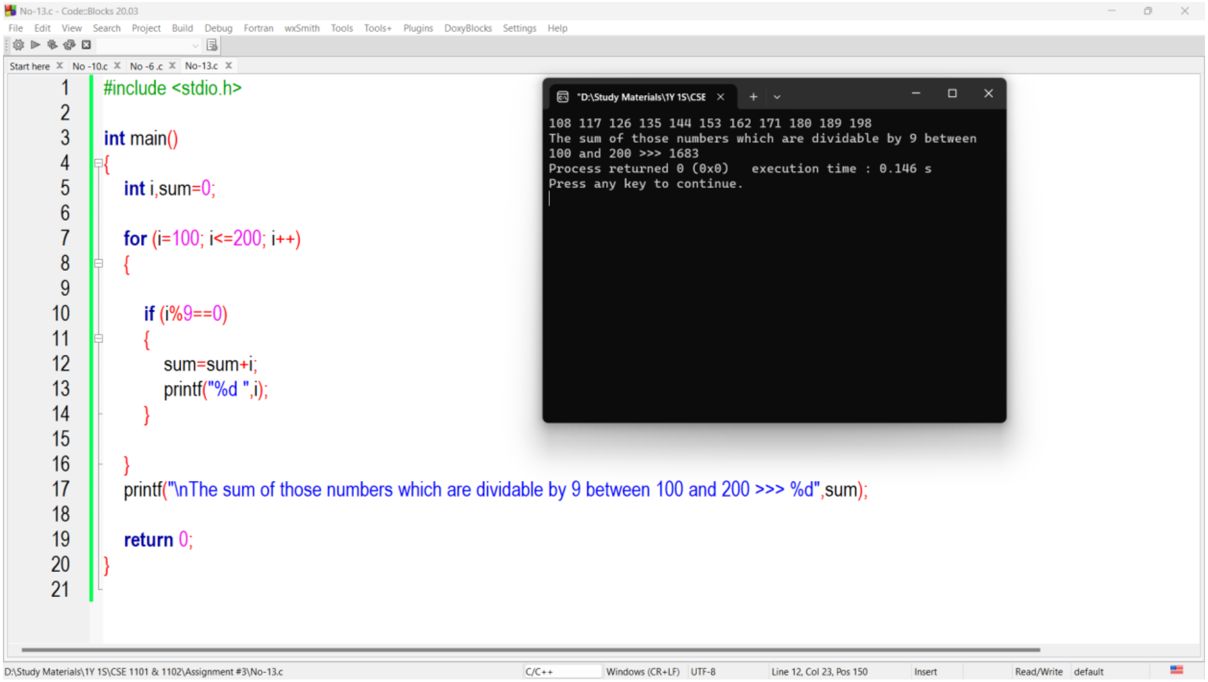
Start here
No-11.c
"D:\Study Materials\1Y 1S\CSE
D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\No-11.c
C/C++
Windows (CR+LF)
UTF-8
Line 7, Col 1, Pos 103
Insert
Read/Write
default

```c
#include <stdio.h>

int main() {
    int rows=4, i, j, n = 1;

    for (i = 1; i <= rows; i++) {

        for (j = 1; j <= i; j++) {
            printf("%d ", n);
            n++;
        }

        printf("\n");
    }

    return 0;
}
```

```
1
2 3
4 5 6
7 8 9 10

Process returned 0 (0x0)   execution time : 2.401 s
Press any key to continue.
```

Problem No – 13

Write a program in C to find the number and sum of all integers between 100 and 200, which are divisible by 9.



No-13.c - Code::Blocks 20.03
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No -10.c
No -6 .c
No-13.c
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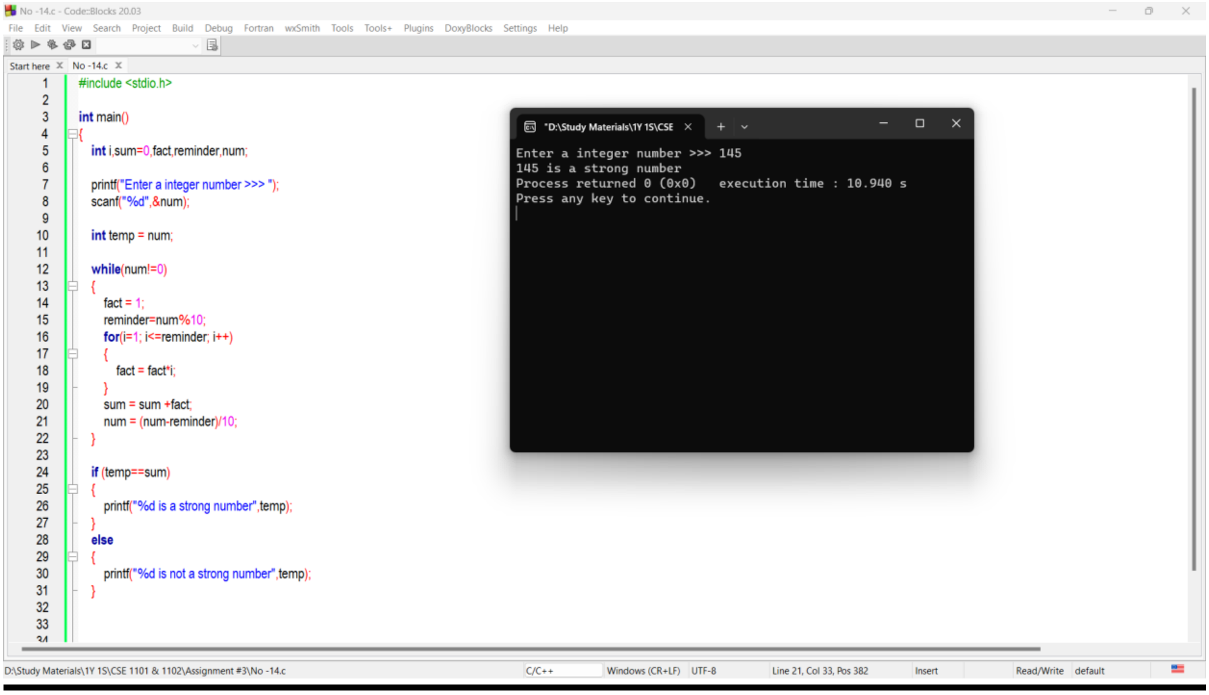
D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\No-13.c
C/C++
Windows (CR+LF)
UTF-8
Line 12, Col 23, Pos 150
Insert
Read/Write
default

```c
#include <stdio.h>

int main()
{
    int i,sum=0;

    for (i=100; i<=200; i++)
    {

        if (i%9==0)
        {
            sum=sum+i;
            printf("%d ",i);
        }

    }
    printf("\nThe sum of those numbers which are dividable by 9 between 100 and 200 >>> %d",sum);

    return 0;
}
```

```
108 117 126 135 144 153 162 171 180 189 198
The sum of those numbers which are dividable by 9 between
100 and 200 >>> 1683
Process returned 0 (0x0)   execution time : 0.146 s
Press any key to continue.
```

Problem No – 14

Write a C program to check whether a number is a Strong Number or not (A strong number is one in which the factorial of each digit of a number equals the original number's sum).



No -14.c - Code::Blocks 20.03
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No -14.c
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D:\Study Materials\1Y 1S\CSE 1101 & 1102\Assignment #3\No -14.c
C/C++
Windows (CR+LF)
UTF-8
Line 21, Col 33, Pos 382
Insert
Read/Write
default

```c
#include <stdio.h>

int main()
{
    int i,sum=0,fact,reminder,num;

    printf("Enter a integer number >>> ");
    scanf("%d",&num);

    int temp = num;

    while(num!=0)
    {
        fact = 1;
        reminder=num%10;
        for(i=1; i<=reminder; i++)
        {
            fact = fact*i;
        }
        sum = sum +fact;
        num = (num-reminder)/10;
    }

    if (temp==sum)
    {
        printf("%d is a strong number",temp);
    }
    else
    {
        printf("%d is not a strong number",temp);
    }
```

```
Enter a integer number >>> 145
145 is a strong number
Process returned 0 (0x0)   execution time : 10.940 s
Press any key to continue.
```