



G. H. RAISONI COLLEGE OF ENGINEERING

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Department of Artificial Intelligence

Phase 2 : Skill Course – Fundamentals of Programming Using C

TAE – I

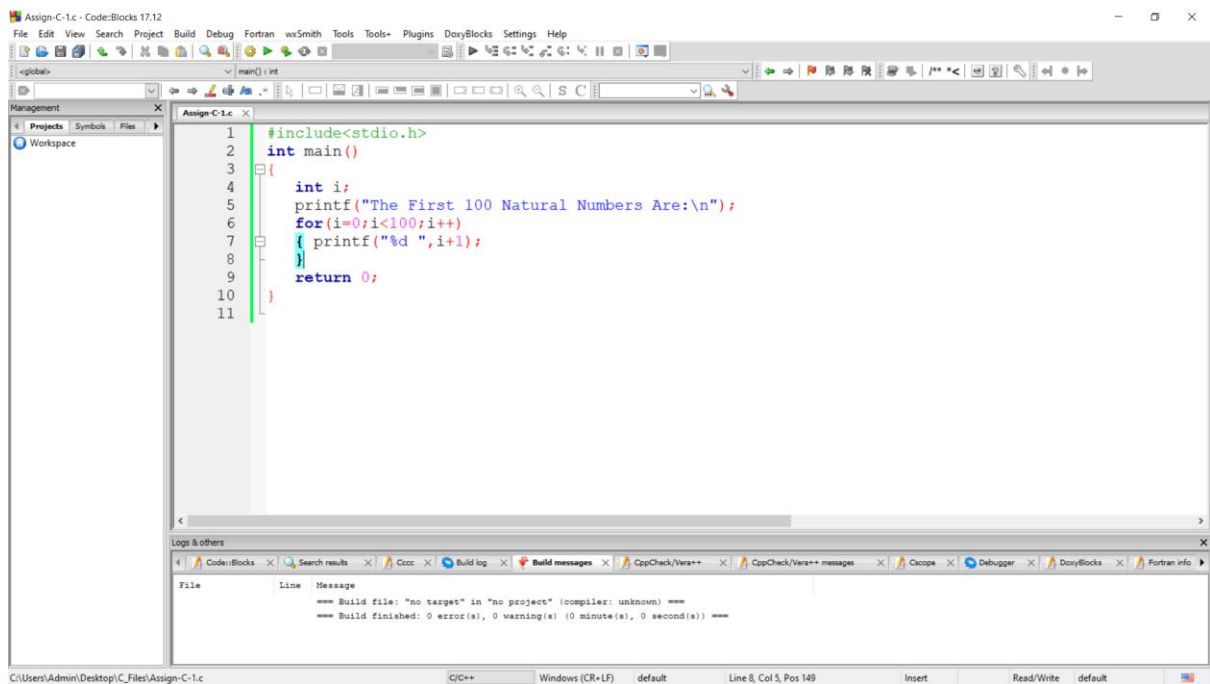
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Roll no.=44

Section=C

Submitted To: Prof. A. Thomas

1) Write a C program to print the first 100 natural numbers

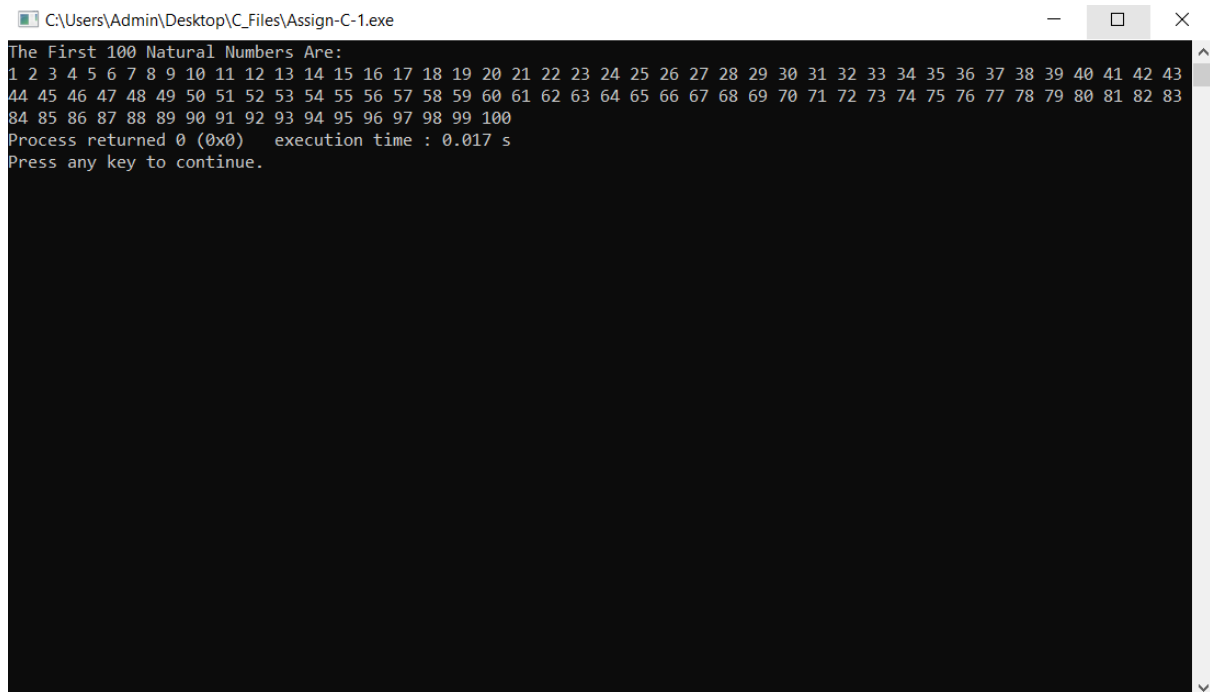


The screenshot shows a code editor window titled "Assign-C-1.c - Code::Blocks 17.12". The code is as follows:

```
1 #include<stdio.h>
2 int main()
3 {
4     int i;
5     printf("The First 100 Natural Numbers Are:\n");
6     for(i=0;i<100;i++)
7     { printf("%d ",i+1);
8     }
9     return 0;
10 }
11
```

The bottom panel shows the "Log & others" tab with the following build messages:

```
File      Line  Message
=====
Build file: "no target" in "no project" (compiler: unknown)
Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s))
```



The screenshot shows a terminal window titled "C:\Users\Admin\Desktop\C_Files\Assign-C-1.exe". The output of the program is as follows:

```
The First 100 Natural Numbers Are:
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 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83
84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
Process returned 0 (0x0)   execution time : 0.017 s
Press any key to continue.
```

2) Write a C program to find the sum of first n natural numbers

The image shows a C program in the Code::Blocks IDE and its execution output. The program calculates the sum of the first 100 natural numbers.

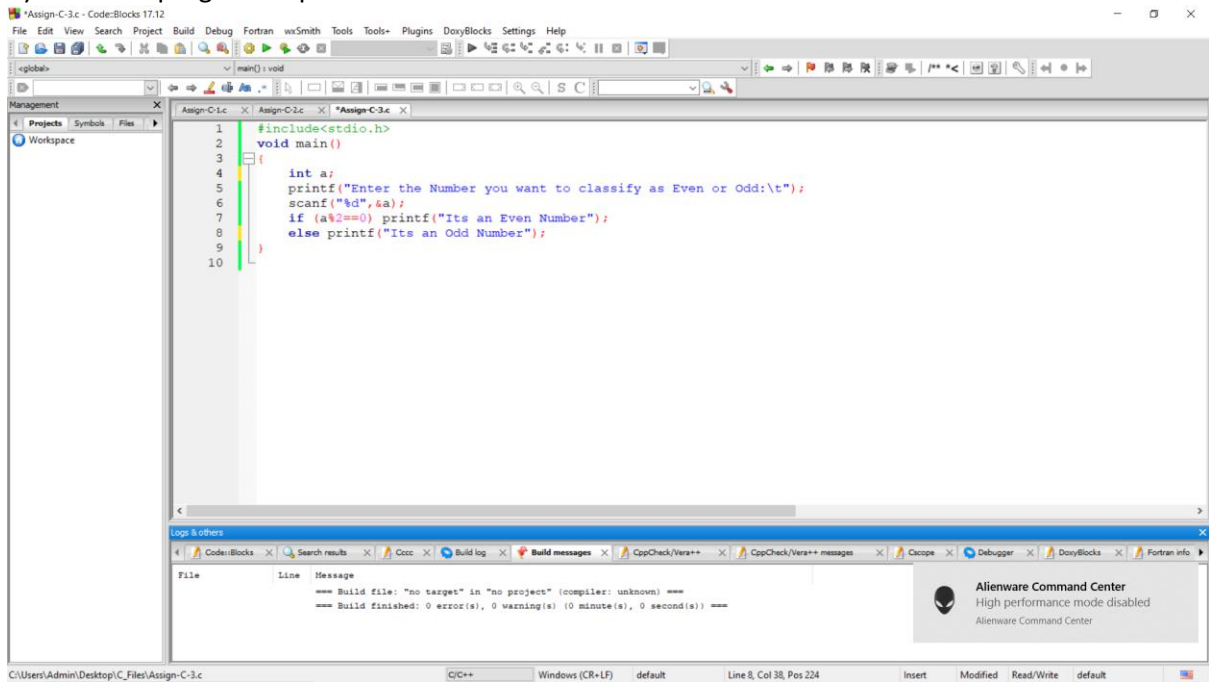
```
2  int total(int a)
3  {
4      int i, sum=0;
5      for(i=1; i<101; i++)
6      {
7          sum=sum+i;
8      }
9      return sum;
10 }
11
12 void main()
13 {
14     int a;
15     printf("The sum of First 100 Numbers are as Follows:\n");
16     a=total(100);
17     printf("The sum is = %d\n", a);
18 }
19
```

The execution output shows the program's results and execution details:

```
C:\Users\Admin\Desktop\C_Files\Assign-C-2.exe
The sum of First 100 Numbers are as Follows:
The sum is = 5050

Process returned 18 (0x12)   execution time : 0.011 s
Press any key to continue.
```

3) Write a C program to print if the entered number is even or odd



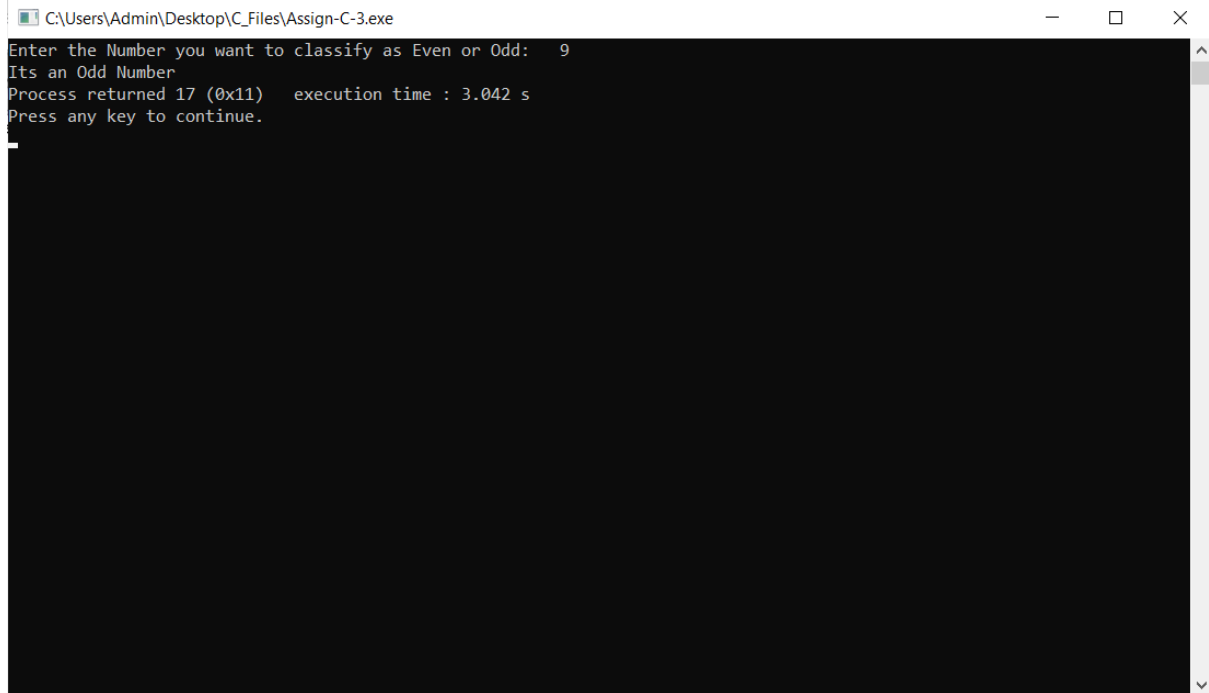
The screenshot shows the Code::Blocks IDE with a C program open. The program includes `<stdio.h>` and defines a `main` function. Inside `main`, it declares an integer `a`, prompts the user to enter a number, and uses `scanf` to read the input. It then checks if the number is even using `a%2==0` and prints the appropriate message. The status bar at the bottom indicates the current position is Line 8, Col 38, Pos 224.

```
1 #include<stdio.h>
2
3 void main()
4 {
5     int a;
6     printf("Enter the Number you want to classify as Even or Odd:\t");
7     scanf("%d",&a);
8     if (a%2==0) printf("Its an Even Number");
9     else printf("Its an Odd Number");
10 }
```

Log & others

File	Line	Message
		=== Build file: "no target" in "no project" (compiler: unknown) ===
		=== Build finished: 0 error(s), 0 warning(s), 0 minute(s), 0 second(s) ===

Alienware Command Center
High performance mode disabled
Alienware Command Center



The screenshot shows the command prompt window with the following output:

```
C:\Users\Admin\Desktop\C_Files\Assign-C-3.exe
Enter the Number you want to classify as Even or Odd: 9
Its an Odd Number
Process returned 17 (0x11)    execution time : 3.042 s
Press any key to continue.
```

4) Write a C program to find the sum of odd numbers and even numbers of n natural numbers

The image shows a C program in the Code::Blocks IDE and its execution output. The program calculates the sum of even and odd numbers up to a given number 'n'.

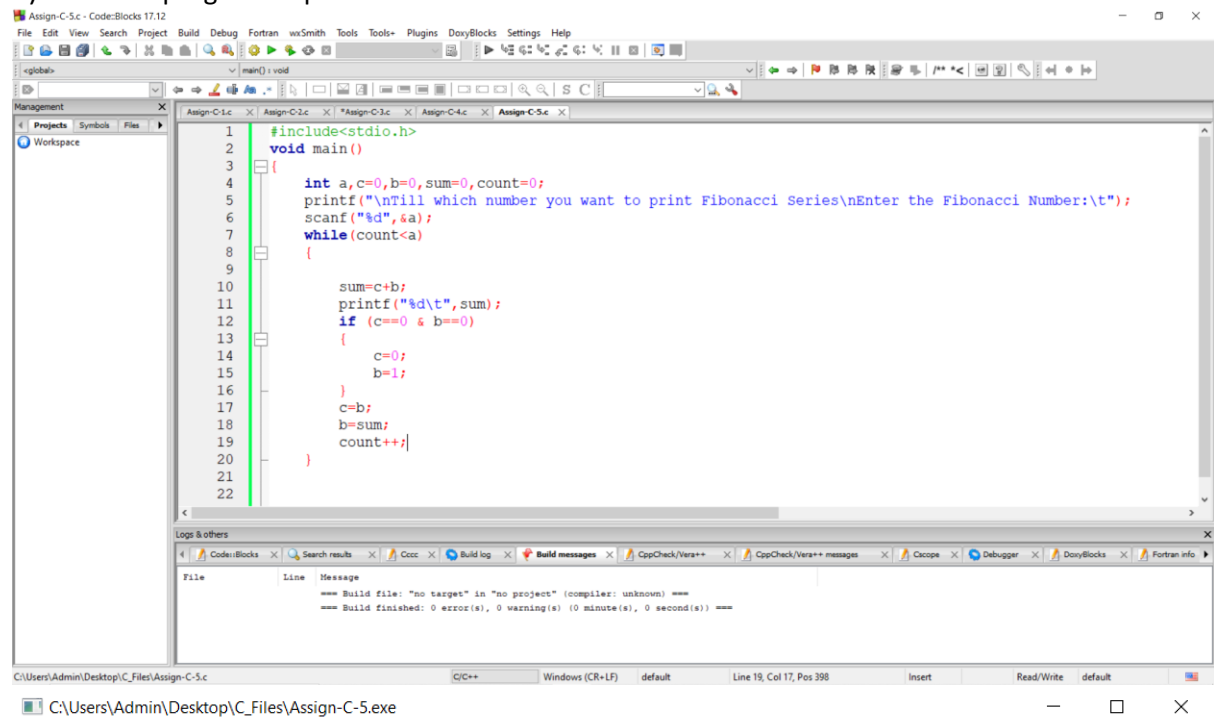
```
1 #include<stdio.h>
2 int total(int a)
3 {
4     int sum1=0, sum2=0, i;
5     for(i=0; i<=a; i++)
6     {
7         if(i%2==0)
8         {
9             sum1=sum1+i;
10        }
11        else
12        {
13            sum2=sum2+i;
14        }
15    }
16    printf("The sum of Even Numbers:\t %d\n", sum1);
17    printf("The sum of Odd Numbers:\t %d\n", sum2);
18    return 0;
19 }
20
21 void main()
22 {
23     int n;
24     printf("\nTill which number you want to find the sum of Even and Odd\nEnter the Number:\n");
25     scanf("%d", &n);
26     total(n);
27 }
```

The execution output shows the program running and displaying the sums for the input number 7:

```
Till which number you want to find the sum of Even and Odd
Enter the Number:
7
The sum of Even Numbers:      12
The sum of Odd Numbers:  16

Process returned 0 (0x0)   execution time : 4.217 s
Press any key to continue.
```

5) Write a C program to print the Fibonacci



The screenshot shows a C code editor with the following code:

```
1 #include<stdio.h>
2 void main()
3 {
4     int a,c=0,b=0,sum=0,count=0;
5     printf("\nTill which number you want to print Fibonacci Series\nEnter the Fibonacci Number:\t");
6     scanf("%d",&a);
7     while(count<a)
8     {
9
10        sum=c+b;
11        printf("%d\t",sum);
12        if (c==0 & b==0)
13        {
14            c=0;
15            b=1;
16        }
17        c=b;
18        b=sum;
19        count++;
20    }
21
22 }
```

The build output shows:

```
File Line Message
=== Build file: "no target" in "no project" (compiler: unknown) ===
=== Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ===
```

```
Till which number you want to print Fibonacci Series
Enter the Fibonacci Number: 20
0    1    1    2    3    5    8    13    21    34    55    89    144    233    377
610  987  1597  2584  4181
Process returned 20 (0x14) execution time : 3.242 s
Press any key to continue.
```

6) Write a C program to print a pyramid of stars.

The screenshot displays the Code::Blocks IDE interface. The top menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Plugins, DoryBlocks, Settings, and Help. The toolbar contains icons for file operations, building, running, and debugging.

The main editor window shows a C program named "Assign-C-6.c". The code is as follows:

```
#include<stdio.h>
void main()
{
    int i,j,b=1,a;
    printf("Enter the rows i structure:\t");
    scanf("%d",&a);
    for (j=0;j<a;j++)
    {
        for (i=0;i<(a-j);i++)
        {
            printf(" ");
        }
        for (i=0;i<j*2-1;i++)
        {
            printf("*");
            b=2;
        }
        printf("\n");
    }
}
```

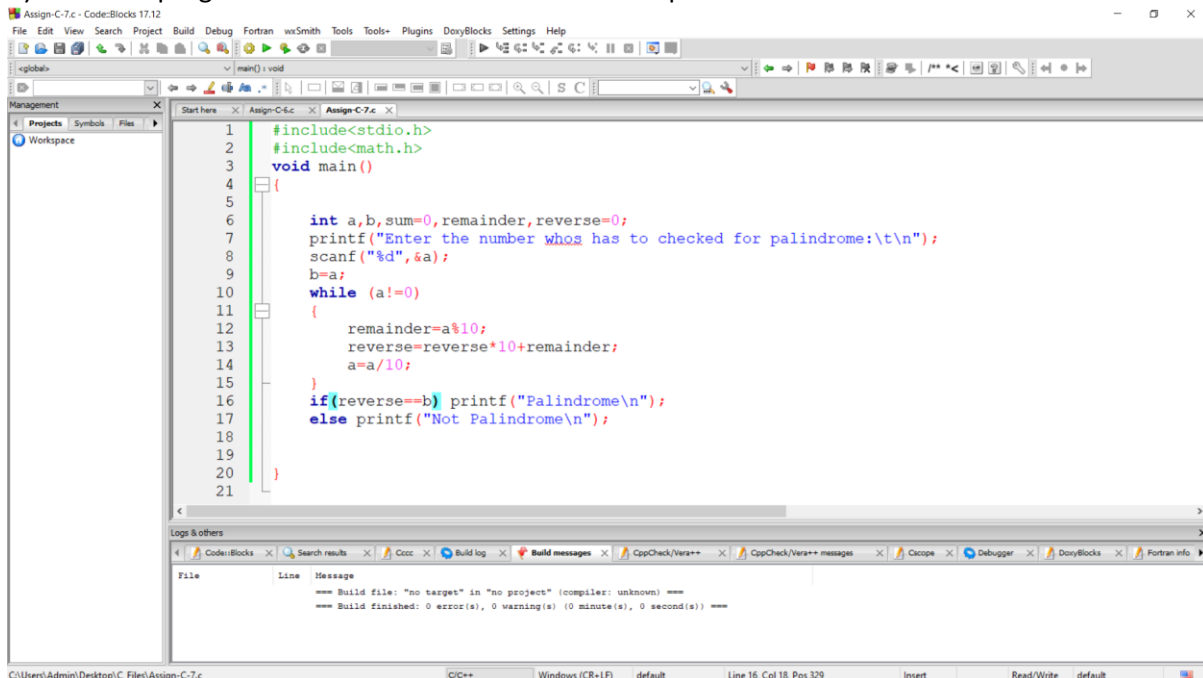
The bottom panel shows the "Build messages" window with the following output:

```
==== Build file: "no target" in "no project" (compiler: unknown) ====
==== Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ====
```

The status bar at the bottom indicates the current file is "C:\Users\Admin\Desktop\C_Files\Assign-C-6.c", the compiler is "C/C++", and the build system is "Windows (CR+LF)". It also shows the current position: "Line 13, Col 21, Pos 235".

A separate terminal window titled "C:\Users\Admin\Desktop\C_Files\Assign-C-6.exe" shows the program's execution. It prompts "enter the rows i structure:" and receives input "20". The output consists of a pattern of asterisks forming a series of nested triangles. Below the pattern, it states "Process returned 20 (0x14) execution time : 1.980 s" and "Press any key to continue."

7) Write a C program to find if the entered number is a palindrome

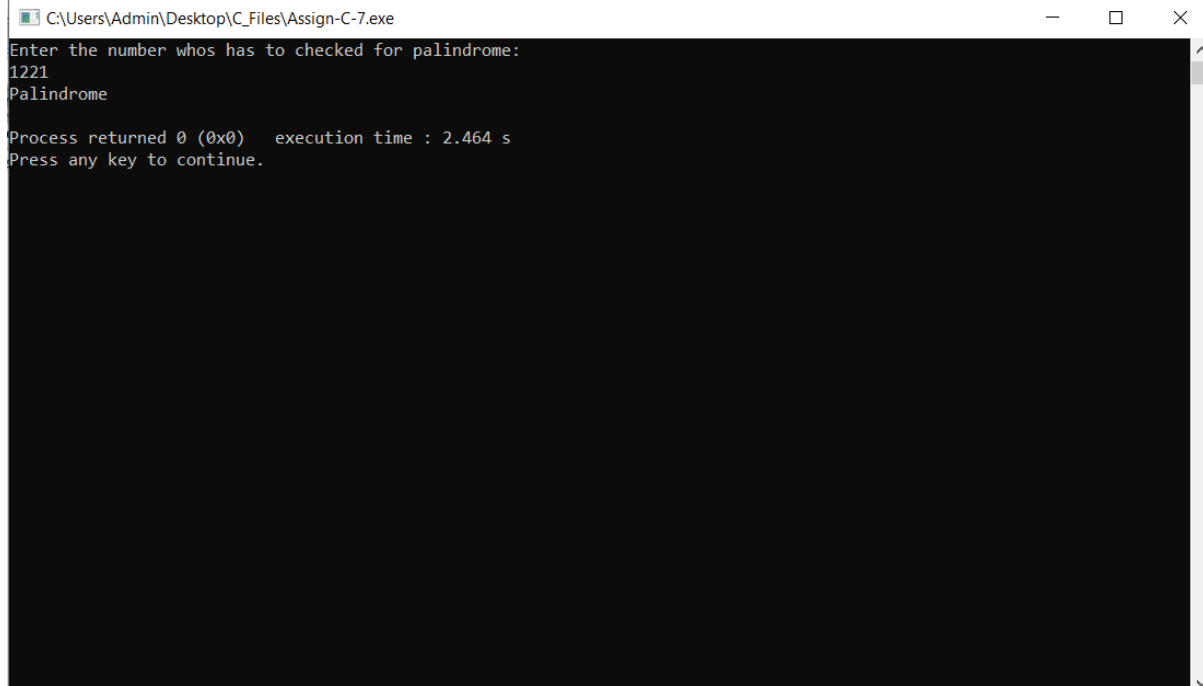


The screenshot shows the Code::Blocks IDE with a C program open. The program includes `<stdio.h>` and `<math.h>`, and defines a `main` function. It declares variables `a`, `b`, `sum`, `remainder`, and `reverse`. It prompts the user to enter a number, reads it into `a`, and then enters a `while` loop to reverse the digits. After the loop, it compares the original number `a` with the reversed number `b` and prints the result.

```
1 #include<stdio.h>
2 #include<math.h>
3 void main()
4 {
5
6     int a,b,sum=0,remainder,reverse=0;
7     printf("Enter the number whos has to checked for palindrome:\t\n");
8     scanf("%d",&a);
9     b=a;
10    while (a!=0)
11    {
12        remainder=a%10;
13        reverse=reverse*10+remainder;
14        a=a/10;
15    }
16    if(reverse==b) printf("Palindrome\n");
17    else printf("Not Palindrome\n");
18
19
20 }
21
```

The bottom pane shows the build log with the following messages:

```
==== Build file: "no target" in "no project" (compiler: unknown) ====
==== Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ====
```



The screenshot shows a terminal window titled `C:\Users\Admin\Desktop\C_Files\Assign-C-7.exe`. It displays the output of the program when the number 1221 is entered. The program correctly identifies it as a palindrome. Below the output, it shows the process returned 0 and the execution time was 2.464 seconds.

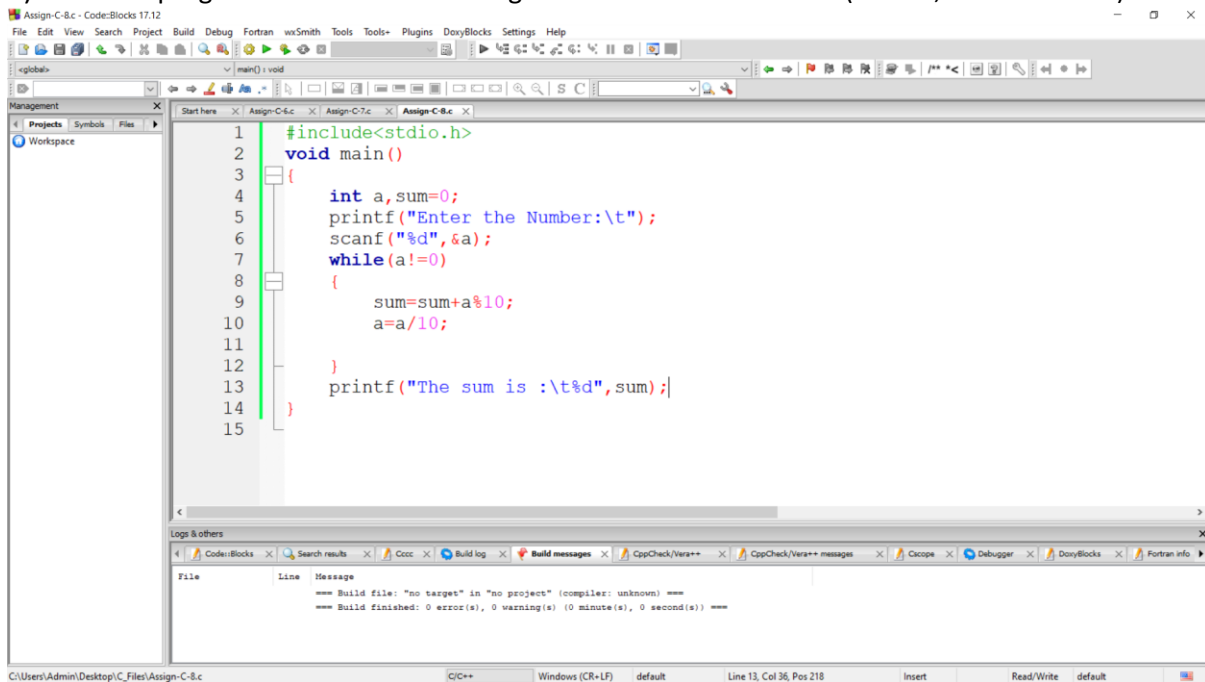
```
Enter the number whos has to checked for palindrome:
1221
Palindrome

Process returned 0 (0x0)   execution time : 2.464 s
Press any key to continue.
```



```
C:\Users\Admin\Desktop\C_Files\Assign-C-7.exe
Enter the number whos has to checked for palindrome:
123
Not Palindrome
Process returned 0 (0x0)   execution time : 1.924 s
Press any key to continue.
```

8) Write a C program to find the sum of digits of the entered number. (n=123 , sum=1+2+3=6)



The screenshot shows the Code::Blocks IDE with a C program open. The program prompts the user to enter a number and calculates the sum of its digits. The output shows the sum is 6 for the input 123. The IDE interface includes a menu bar, a toolbar, a project manager, and a console window at the bottom.

```
1 #include<stdio.h>
2 void main()
3 {
4     int a,sum=0;
5     printf("Enter the Number:\t");
6     scanf("%d",&a);
7     while(a!=0)
8     {
9         sum=sum+a%10;
10        a=a/10;
11    }
12    printf("The sum is :\t%d",sum);
13
14 }
15
```

Log & others

File	Line	Message
		== Build file: "no target" in "no project" (compiler: unknown) ==
		== Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ==

C:\Users\Admin\Desktop\C_Files\Assign-C-8.c C/C++ Windows (CR+LF) default Line 13, Col 36, Pos 218 Insert Read/Write default

```
C:\Users\Admin\Desktop\C_Files\Assign-C-8.exe
Enter the Number:      123456
The sum is :      21
Process returned 15 (0xF)   execution time : 2.432 s
Press any key to continue.
```

9) Write a C program to print the factorial of a number

```
Assign-C-9.c - Code::Blocks 17.12
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoryBlocks Settings Help
+global+
factorial(int a) : int
Management
Workspace
Start here | Assign-C-6.c | Assign-C-7.c | Assign-C-8.c | Assign-C-9.c
1  #include<stdio.h>
2  int factorial(int a)
3  {
4      if(a==0) return (1);
5
6      return (a*factorial(a-1));
7  }
8  void main()
9  {
10     int b,c;
11     printf("Enter the Number for which you have to calculate the Factorial:\t\n");
12     scanf("%d",&b);
13     c=factorial(b);
14     printf("The Factorial is :\t%d\n",c);
15 }
16

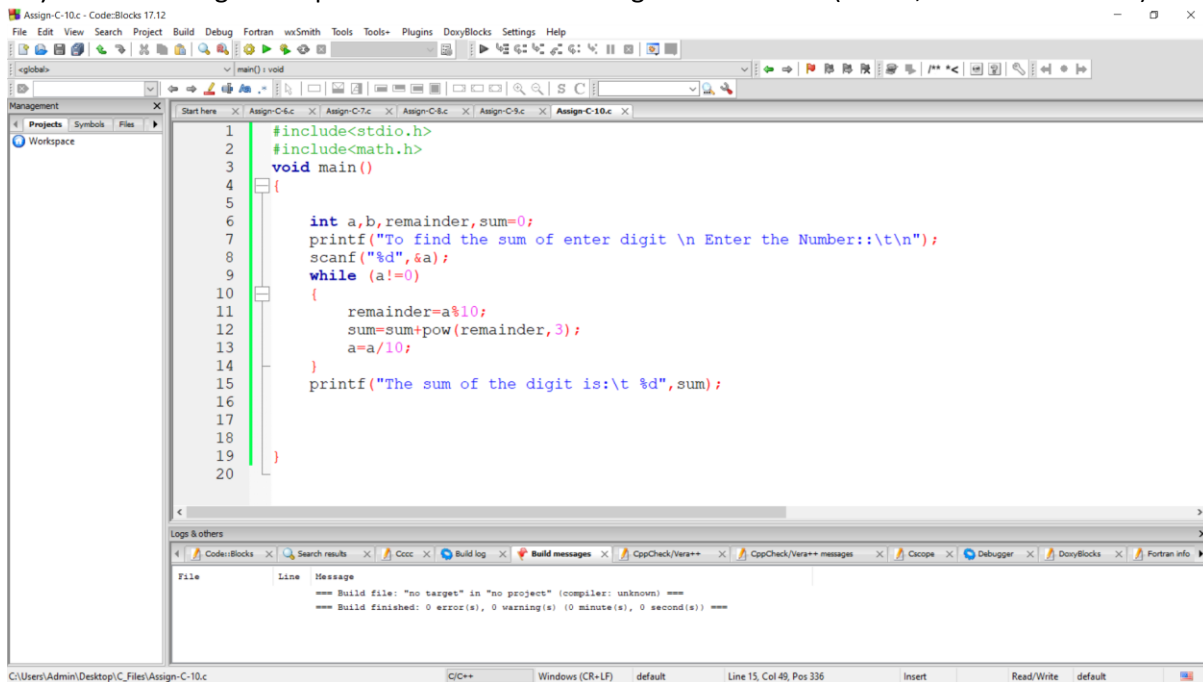
Log & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Ver++ CppCheck/Ver++ messages Cscope Debugger DoryBlocks Fortran info
File Line Message
=== Build file: "no target" in "no project" (compiler: unknown) ===
=== Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ===

C/C++ Windows (CR-LF) default Line 6, Col 26, Pos 97 Insert Read/Write default
```

```
C:\Users\Admin\Desktop\C_Files\Assign-C-9.exe
Enter the Number for which you have to calculate the Factorial:
5
The Factorial is :      120

Process returned 23 (0x17)   execution time : 2.191 s
Press any key to continue.
```

10) Write a C Program to print the sum of cube of digits of a number (n=123, sum = $1+4+9 = 14$)



```
1  #include<stdio.h>
2  #include<math.h>
3  void main()
4  {
5
6      int a,b,remainder,sum=0;
7      printf("To find the sum of enter digit \n Enter the Number::\t\n");
8      scanf("%d",&a);
9      while (a!=0)
10     {
11         remainder=a%10;
12         sum=sum+pow(remainder,3);
13         a=a/10;
14     }
15     printf("The sum of the digit is:\t %d",sum);
16
17
18
19
20 }
```

Log & others

File	Line	Message
		== Build file: "no target" in "no project" (compiler: unknown) ==
		== Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ==

C:\Users\Admin\Desktop\C_Files\Assign-C-10.c C/C++ Windows (CR+LF) default Line 15, Col 49, Pos 336 Insert Read/Write default

```
C:\Users\Admin\Desktop\C_Files\Assign-C-10.exe
To find the sum of enter digit
Enter the Number::
123
The sum of the digit is:          36
Process returned 28 (0x1C)   execution time : 2.256 s
Press any key to continue.
```

11) Write a program that reads number until a negative number is read and prints the number of values read, the largest values, smallest value and the range

```
#include <stdio.h>
void main()
{
    int a,b=1,range=0,l=0,s=0;
    while(b==1)
    {
        printf("Enter the value :\t");
        scanf("%d",&a);
        if (l==0){l=a;}
        if(a==0)
        {
            printf("The Entered value:\t%d\n",a);
            range=range+1;
            printf("The Range is :\t%d\n",range);
            if(a<1)
            {
                l=a;
            }
            printf("The Largest No. :\t%d\n",l);
            if(a>a)
            {
                s=a;
            }
            printf("The smallest No. :\t%d\n",s);
        }
        else
        {
            break;
        }
        printf("\n");
    }
}
```

Build messages:

```
== Build file: "no target" in "no project" (compiler: unknown) ==
== Build finished: 0 error(s), 0 warning(s) (0 minute(s), 0 second(s)) ==
```

```
C:\Users\Admin\Desktop\C_Files\Assign-C-11.exe

Enter the value : 1
The Entered value: 1
The Range is : 1
The Largest No. : 1
The smallest No. : 1

Enter the value : 3
The Entered value: 3
The Range is : 2
The Largest No. : 3
The smallest No. : 1

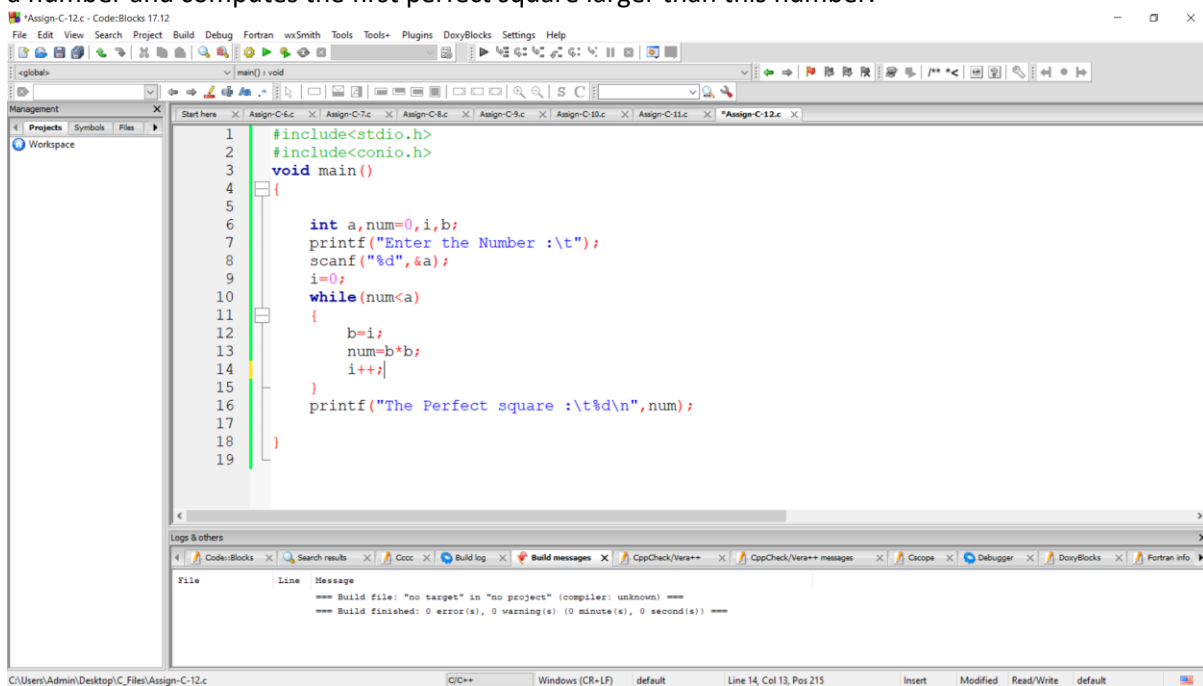
Enter the value : 6
The Entered value: 6
The Range is : 3
The Largest No. : 6
The smallest No. : 1

Enter the value : 8
The Entered value: 8
The Range is : 4
The Largest No. : 8
The smallest No. : 1

Enter the value : -49

Process returned -49 (0xFFFFFFFF) execution time : 10.390 s
Press any key to continue.
```

12) A perfect square is an integer which is the square of another integer. Write a program that reads a number and computes the first perfect square larger than this number.



```
*Assign-C-12.c - Code::Blocks 17.12
File Edit View Search Project Build Debug Fortran wsSmith Tools Tools+ Plugins DoryBlocks Settings Help

<global>
main() : void

Management
Workspace

1 #include<stdio.h>
2 #include<conio.h>
3 void main()
4 {
5
6     int a,num=0,i,b;
7     printf("Enter the Number :\t");
8     scanf("%d",&a);
9     i=0;
10    while (num<a)
11    {
12        b=i;
13        num=b*b;
14        i++;
15    }
16    printf("The Perfect square :\t%d\n",num);
17
18 }
19

Log & others
Code::Blocks Search results Cccc Build log Build messages CppCheck/Ver++ CppCheck/Ver++ messages Cscope Debugger DoryBlocks Fortran info

File Line Message
==== Build file: "no target" in "no project" (compiler: unknown) ====
==== Build finished: 0 error(s), 0 warning(s), 0 minute(s), 0 second(s) ====

C:\Users\Admin\Desktop\C_Files\Assign-C-12.c C/C++ Windows (CR-LF) default Line 14, Col 13, Pos 215 Insert Modified Read/Write default
```

```
C:\Users\Admin\Desktop\C_Files\Assign-C-12.exe
Enter the Number :    45
1  0
2  1
3  4
4  9
5 16
6 25
7 36
8 49
The Perfect square :    49

Process returned 24 (0x18)   execution time : 2.369 s
Press any key to continue.
```