1.Identify the error in program

```
#include<iostream>
void main()
{
        int i=0;
        i=i+1;
        cout<<i<<" ";
        cout<<i;
}
```

ANS: The error in the program is that it is missing the namespace declaration for "std" which is required for using "cout". Additionally, the return type of the "main" function should be "int" instead of "void". Here's the corrected version of the code

CORRECT CODE

```
#include <iostream>
using namespace std;
int main()
{
        int i = 0;
        i = i + 1;
        cout << i << " ";
        cout << i;
        return 0;
}
```

2.Identify the error

```
#include<iostream.h>
void main()
{
        short i=2500, j=3000;
        cout>>" i+j ">>=(i+j);
}
```

ANS:

There are several errors in the given code:

The header file should be <iostream> instead of <iostream.h>. The correct syntax for including the C++ standard input/output library is #include <iostream>.

The correct syntax for outputting data using cout is << (insertion operator), not >> (extraction operator). So, the line cout>>" i+j ">>=(i+j); should be changed to cout << " i+j " << (i+j);.

The main function, which is the entry point of a C++ program, should have a return type of int, not void. So, the function signature should be int main() instead of void main().

Here is the corrected code:

```
 #include <iostream>
using namespace std;

int main()
{
        short i = 2500, j = 3000;
        cout << " i+j " << (i + j);
        return 0;
}
```

3. What will happen when you run following program.

```
#include<iostream.h>
void main()
{
        int i=10, j=5;
        int modresult=0;

        int divresult=0;

        modresult=i%j;

        cout<<modresult;

        divresult=i/modresult;

        cout<<divresult;

}


*/


using namespace std;

#include<iostream>

int main()

{

        int i=10, j=5;

        int modresult=0;

        int divresult=0;

        modresult=i%j;

        cout<<modresult;

        divresult=i/modresult;

        cout<<divresult;

        return 0;

}
```

ANS:

The given program is written in C++ and performs the following steps:

Includes the header file iostream which provides input/output stream functionalities in C++.

Defines a function main() as the entry point of the program.

Declares and initializes two integer variables i and j with the values 10 and 5 respectively.

Declares two integer variables modresult and divresult without initializing them.

Calculates the modulo (remainder) of i divided by j using the modulus operator % and stores the result in modresult.

Prints the value of modresult using the cout object from the iostream library.

Attempts to calculate i divided by modresult and stores the result in divresult. However, this step may cause a runtime error because modresult may be 0, and dividing by 0 is undefined in C++.

Attempts to print the value of divresult using the cout object from the iostream library. However, if there was a runtime error in the previous step, this line may not be executed.

Returns 0 to indicate successful completion of the program to the operating system.

4.Write a c++ program

What happens if the following program is executed in C and C++?

```
/*

#include <stdio.h>

int main(void)

{

        const int j = 20;

        int *ptr = &j;

        printf("*ptr: %d\n", *ptr);

        return 0;

}


*/


using namespace std;

#include<iostream>

int main(void)

{
        int j = 20;

        int *ptr = &j;

        cout<<(*ptr);

        return 0;

}
```

ANS:

In C:

The program will compile without any errors.

When executed, the program will print the value of *ptr, which is the value stored at the memory location pointed to by ptr. This value will be 20, as ptr is assigned the address of j, which is initialized with the value 20.

However, since j is declared as a constant variable (const int j = 20;), attempting to change the value of j through the pointer ptr will result in undefined behavior. The program may crash or produce unexpected results.

In C++:

The program will compile without any errors.

When executed, the program will print the value of *ptr, which is the value stored at the memory location pointed to by ptr. This value will be 20, as ptr is assigned the address of j, which is initialized with the value 20.

Unlike in C, in C++, j is not declared as a constant variable, so changing the value of j through the pointer ptr will not result in undefined behavior. The value of j will be updated to the new value assigned through ptr. However, it is important to note that modifying the value of a variable through a pointer can have unintended consequences and should be done with caution.

It is generally good practice to avoid using pointers to modify constant variables in C and C++ to prevent potential issues with undefined behavior. If a variable is intended to be constant, it should be declared with the const keyword, and pointers to it should be declared as pointers to const.

```
const int j = 20;

const int *ptr = &j;
```

5.What happens if the following program is executed in C and C++?

```
/*
#include <stdio.h>
int main(void)
{
        int new = 5;
        printf("%d", new);
}
```

ANS:

The program you provided will not compile in both C and C++ due to the use of the reserved keyword "new" as a variable name. In both C and C++, "new" is a reserved keyword used for dynamic memory allocation.

In C++, you will get a compilation error with a message similar to "error: expected unqualified-id before 'new'". This is because C++ has stricter rules on variable naming and does not allow using reserved keywords as variable names.

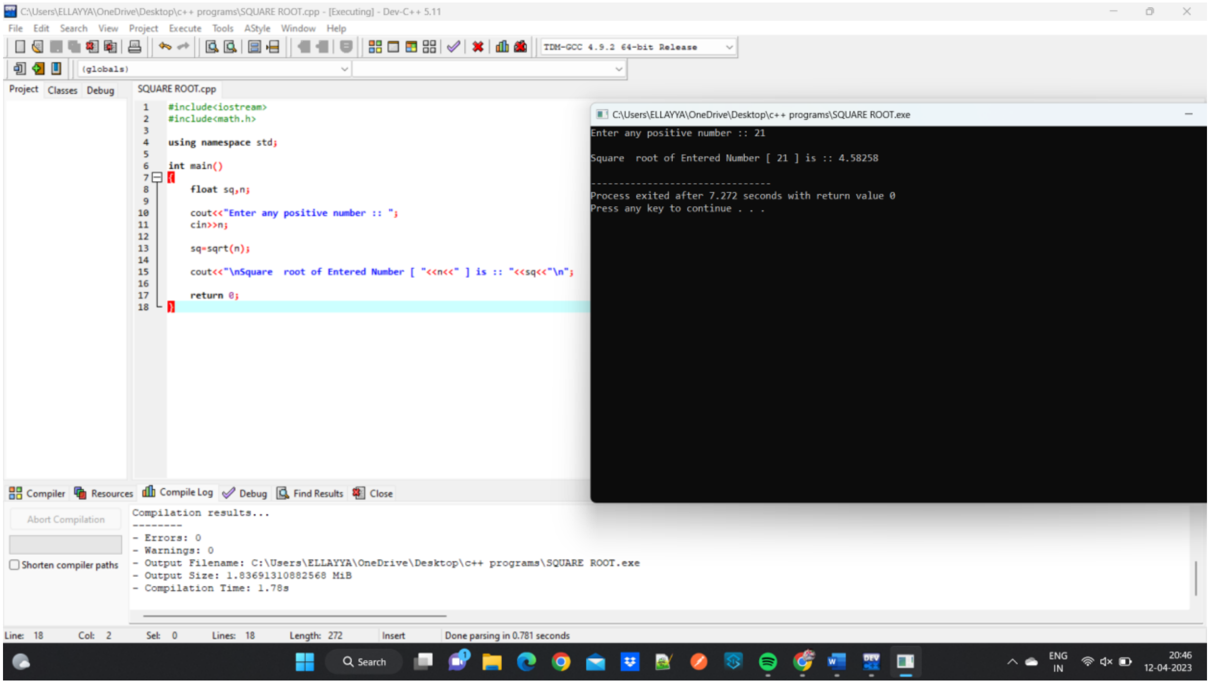
In C, you will also get a compilation error with a similar message, as "new" is also a reserved keyword in C and cannot be used as a variable name.

To fix the issue, you can choose a different variable name that is not a reserved keyword, such as "newVar" or "newValue". Here's an example of a corrected program in C++:

```
#include <iostream>
using namespace std;

int main()
{
        int newVar = 5;
        cout << newVar;
        return 0;
}
```

6.Write c++ program for finding Square root of number

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

using namespace std;

int main()
{
    float sq,n;

    cout<<"Enter any positive number :: ";
    cin>>n;

    sq=sqrt(n);

    cout<<"\nSquare  root of Entered Number [ "<<n<<" ] is :: "<<sq<<"\n";

    return 0;
}
```


C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\SQUARE ROOT.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
SQUARE ROOT.cpp
C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\SQUARE ROOT.exe
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Line: 18 Col: 2 Sel: 0 Lines: 18 Length: 272 Insert Done parsing in 0.781 seconds
Search
ENG IN
20:46
12-04-2023

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

using namespace std;

int main()
{
    float sq,n;

    cout<<"Enter any positive number :: ";
    cin>>n;

    sq=sqrt(n);

    cout<<"\nSquare  root of Entered Number [ "<<n<<" ] is :: "<<sq<<"\n";

    return 0;
}
```

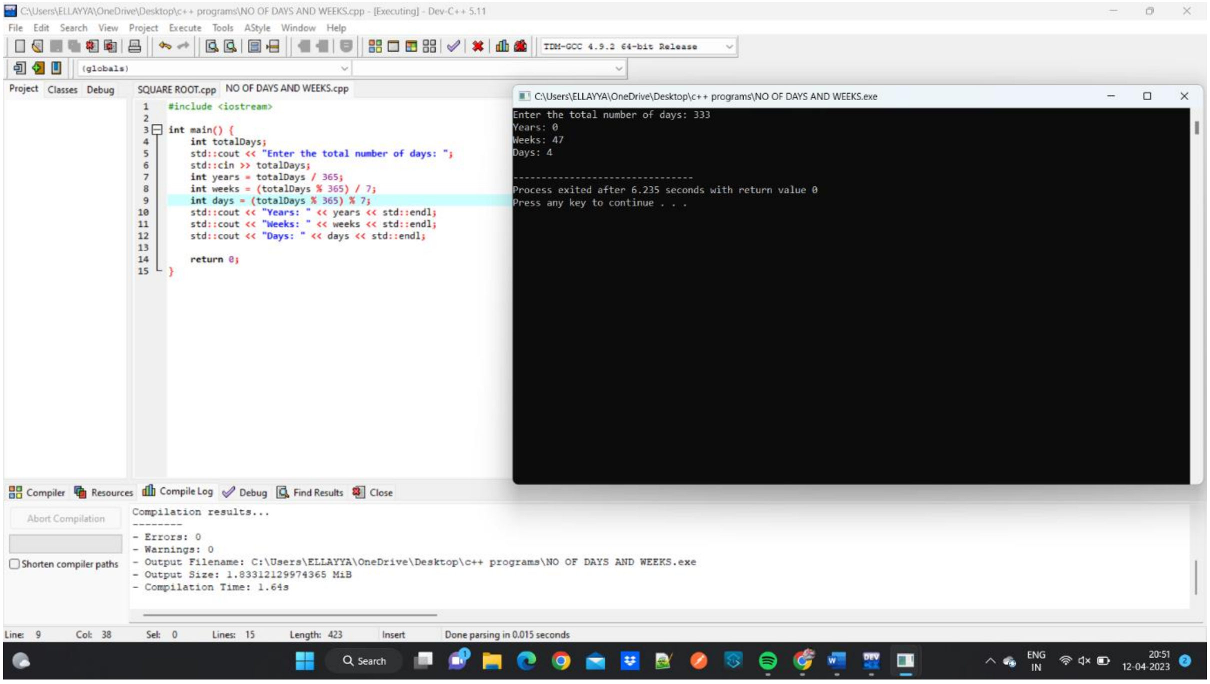
```
Enter any positive number :: 21

Square  root of Entered Number [ 21 ] is :: 4.58258

--------------------------------
Process exited after 7.272 seconds with return value 0
Press any key to continue . . .
```

```
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\SQUARE ROOT.exe
- Output Size: 1.83691310882568 MiB
- Compilation Time: 1.78s
```

7.A person wants to find his birthday day, but he has known no of days present only.

Find the no of days, no of years and no of weeks present for his birthday.

```
#include <iostream>


int main() {
    int totalDays;
    std::cout << "Enter the total number of days: ";
    std::cin >> totalDays;


    // Calculate years, weeks, and days
    int years = totalDays / 365;
    int weeks = (totalDays % 365) / 7;
    int days = (totalDays % 365) % 7;


    // Output the result
    std::cout << "Years: " << years << std::endl;
    std::cout << "Weeks: " << weeks << std::endl;
    std::cout << "Days: " << days << std::endl;

    return 0;
}
```



C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\NO OF DAYS AND WEEKS.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
SQUARE ROOT.cpp
NO OF DAYS AND WEEKS.cpp
C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\NO OF DAYS AND WEEKS.exe
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
□ Shorten compiler paths
Line: 9 Col: 38 Sel: 0 Lines: 15 Length: 423 Insert Done parsing in 0.015 seconds
Search
ENG IN
20:51
12-04-2023

```
#include <iostream>

int main() {
    int totalDays;
    std::cout << "Enter the total number of days: ";
    std::cin >> totalDays;
    int years = totalDays / 365;
    int weeks = (totalDays % 365) / 7;
    int days = (totalDays % 365) % 7;
    std::cout << "Years: " << years << std::endl;
    std::cout << "Weeks: " << weeks << std::endl;
    std::cout << "Days: " << days << std::endl;

    return 0;
}
```

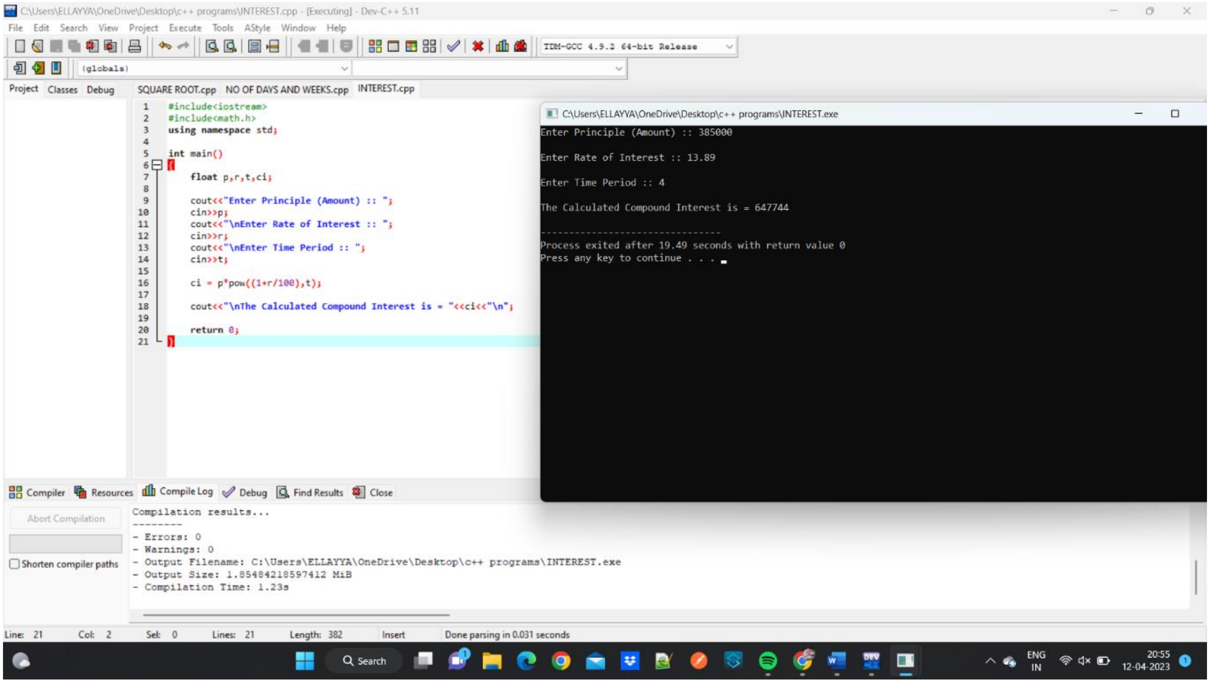
```
Enter the total number of days: 333
Years: 0
Weeks: 47
Days: 4

--------------------------------
Process exited after 6.235 seconds with return value 0
Press any key to continue . . .
```

```
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\NO OF DAYS AND WEEKS.exe
- Output Size: 1.83312129974365 MiB
- Compilation Time: 1.64s
```

8.A person wants to invest amount in financial institution and he wants find the compounded interest he will get, if no of year 385000, roi is 13.89 and time period is 4.

Write the code for above scenario.

```
#include<iostream>
#include<math.h>
using namespace std;
int main()
{
    float p,r,t,ci;
    cout<<"Enter Principle (Amount) :: ";

    cin>>p;

    cout<<"\nEnter Rate of Interest :: ";

    cin>>r;

    cout<<"\nEnter Time Period :: ";

    cin>>t;


    ci = p*pow((1+r/100),t);


    cout<<"\nThe Calculated Compound Interest is = "<<ci<<"\n";


    return 0;

}
```


C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\INTEREST.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
SQUARE ROOT.cpp NO OF DAYS AND WEEKS.cpp INTEREST.cpp
C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\INTEREST.exe
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Line: 21 Col: 2 Sel: 0 Lines: 21 Length: 382 Insert Done parsing in 0.031 seconds
Search
ENG IN
20:55 12-04-2023

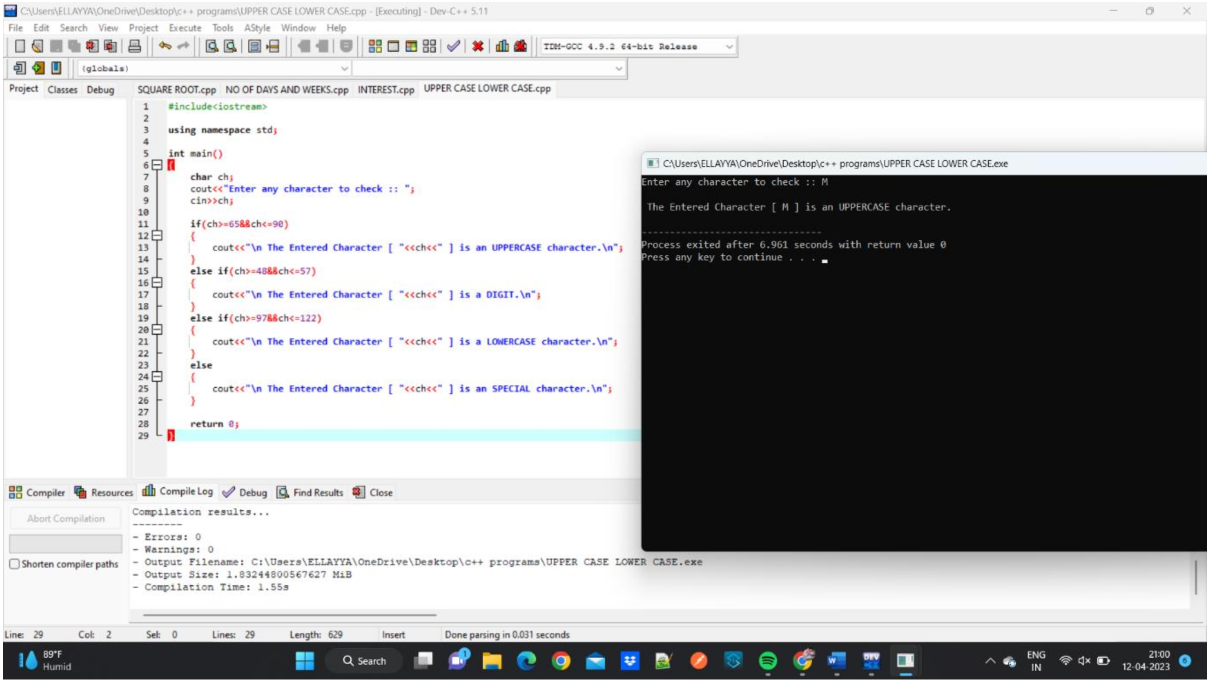
```
#include<iostream>
#include<math.h>
using namespace std;

int main()
{
    float p,r,t,ci;

    cout<<"Enter Principle (Amount) :: ";
    cin>>p;
    cout<<"\nEnter Rate of Interest :: ";
    cin>>r;
    cout<<"\nEnter Time Period :: ";
    cin>>t;

    ci = p*pow((1+r/100),t);

    cout<<"\nThe Calculated Compound Interest is = "<<ci<<"\n";

    return 0;
}
```

```
Enter Principle (Amount) :: 385000

Enter Rate of Interest :: 13.89

Enter Time Period :: 4

The Calculated Compound Interest is = 647744

--------------------------------
Process exited after 19.49 seconds with return value 0
Press any key to continue . . .
```

```
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\INTEREST.exe
- Output Size: 1.85484218597412 MiB
- Compilation Time: 1.23s
```

9.C++ Program to Check Character is Uppercase, Lowercase, Digit or Special

```
#include<iostream>

using namespace std;

int main()
{
   char ch;
   cout<<"Enter any character to check :: ";
   cin>>ch;

   if(ch>=65&&ch<=90)
   {
      cout<<"\n The Entered Character [ "<<ch<<" ] is an UPPERCASE character.\n";
   }
   else if(ch>=48&&ch<=57)
   {
      cout<<"\n The Entered Character [ "<<ch<<" ] is a DIGIT.\n";
   }
   else if(ch>=97&&ch<=122)
   {
      cout<<"\n The Entered Character [ "<<ch<<" ] is a LOWERCASE character.\n";
   }
   else
   {
      cout<<"\n The Entered Character [ "<<ch<<" ] is an SPECIAL character.\n";
   }

   return 0;
}
```



C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\UPPER CASE LOWER CASE.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
SQUARE ROOT.cpp NO OF DAYS AND WEEKS.cpp INTEREST.cpp UPPER CASE LOWER CASE.cpp
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Line: 29 Col: 2 Sel: 0 Lines: 29 Length: 629 Insert Done parsing in 0.031 seconds
89°F Humid
Search
ENG IN
21:00 12-04-2023

```
#include<iostream>

using namespace std;

int main()
{
    char ch;
    cout<<"Enter any character to check :: ";
    cin>>ch;

    if(ch>=65&&ch<=90)
    {
        cout<<"\n The Entered Character [ "<<ch<<" ] is an UPPERCASE character.\n";
    }
    else if(ch>=48&&ch<=57)
    {
        cout<<"\n The Entered Character [ "<<ch<<" ] is a DIGIT.\n";
    }
    else if(ch>=97&&ch<=122)
    {
        cout<<"\n The Entered Character [ "<<ch<<" ] is a LOWERCASE character.\n";
    }
    else
    {
        cout<<"\n The Entered Character [ "<<ch<<" ] is an SPECIAL character.\n";
    }

    return 0;
}
```

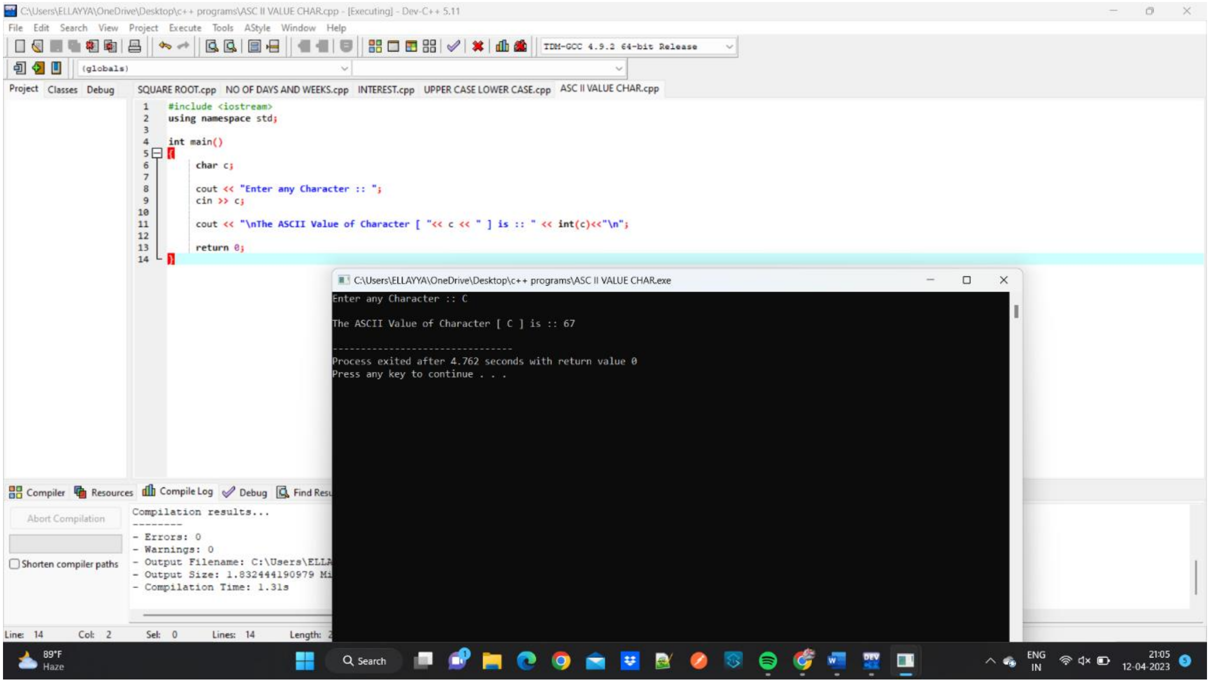
C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\UPPER CASE LOWER CASE.exe

```
Enter any character to check :: M

 The Entered Character [ M ] is an UPPERCASE character.

--------------------------------
Process exited after 6.961 seconds with return value 0
Press any key to continue . . .
```

```
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\UPPER CASE LOWER CASE.exe
- Output Size: 1.83244800567627 MiB
- Compilation Time: 1.55s
```

10.Write a program to display ascii value of character.

```
#include <iostream>
using namespace std;

int main()
{
    char c;

    cout << "Enter any Character :: ";
    cin >> c;

    cout << "\nThe ASCII Value of Character [ "<< c << " ] is :: " << int(c)<<"\n";
    return 0;

}
```



C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\ASC II VALUE CHAR.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
SQUARE ROOT.cpp NO OF DAYS AND WEEKS.cpp INTEREST.cpp UPPER CASE LOWER CASE.cpp ASC II VALUE CHAR.cpp

```
#include <iostream>
using namespace std;

int main()
{
	char c;
	
	cout << "Enter any Character :: ";
	cin >> c;
	
	cout << "\nThe ASCII Value of Character [ "<< c << " ] is :: " << int(c)<<"\n";
	
	return 0;
}
```

C:\Users\ELLAYYA\OneDrive\Desktop\c++ programs\ASC II VALUE CHAR.exe

```
Enter any Character :: C

The ASCII Value of Character [ C ] is :: 67

--------------------------------
Process exited after 4.762 seconds with return value 0
Press any key to continue . . .
```

Compiler Resources Compile Log Debug Find Resu
Abort Compilation
□ Shorten compiler paths

```
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ELLA
- Output Size: 1.832444190979 Mi
- Compilation Time: 1.31s
```