

PG-DAC TRIVANDRUM

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Mini Project

On

Division of Two Numbers

by

Catch Block Statement

By

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1.Project Statement

Write a program to read two double values from the keyboard and calculate the division of these two numbers.

- a)the program should throw an exception, when a wrong type of data is keyed-in
- b)the program should throw an exception, if the condition 'divide-by-zero' occurs.
- c)the program should throw an exception, if the condition second value is greater than the first.
- d)Write Appropriate catch block to handle the exceptions thrown

2. Project Code

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

char q,k,j;

character(double x, double y)
{
try
{
    if(!((('a'>=y)|| (y<='z')))||(!((('a'>=x)|| (x<='z')))))
    {
        throw k;
    }
}
catch(char c)
{
cout<<endl<<"No proper data entered"<<endl;
return 0;
exit;
}

};

int main()
{
    double x,y;
    cout<<"Enter two numbers to be divided "<<endl;
    cin>>x;
    cin>>y;
    character(x,y);
```

```

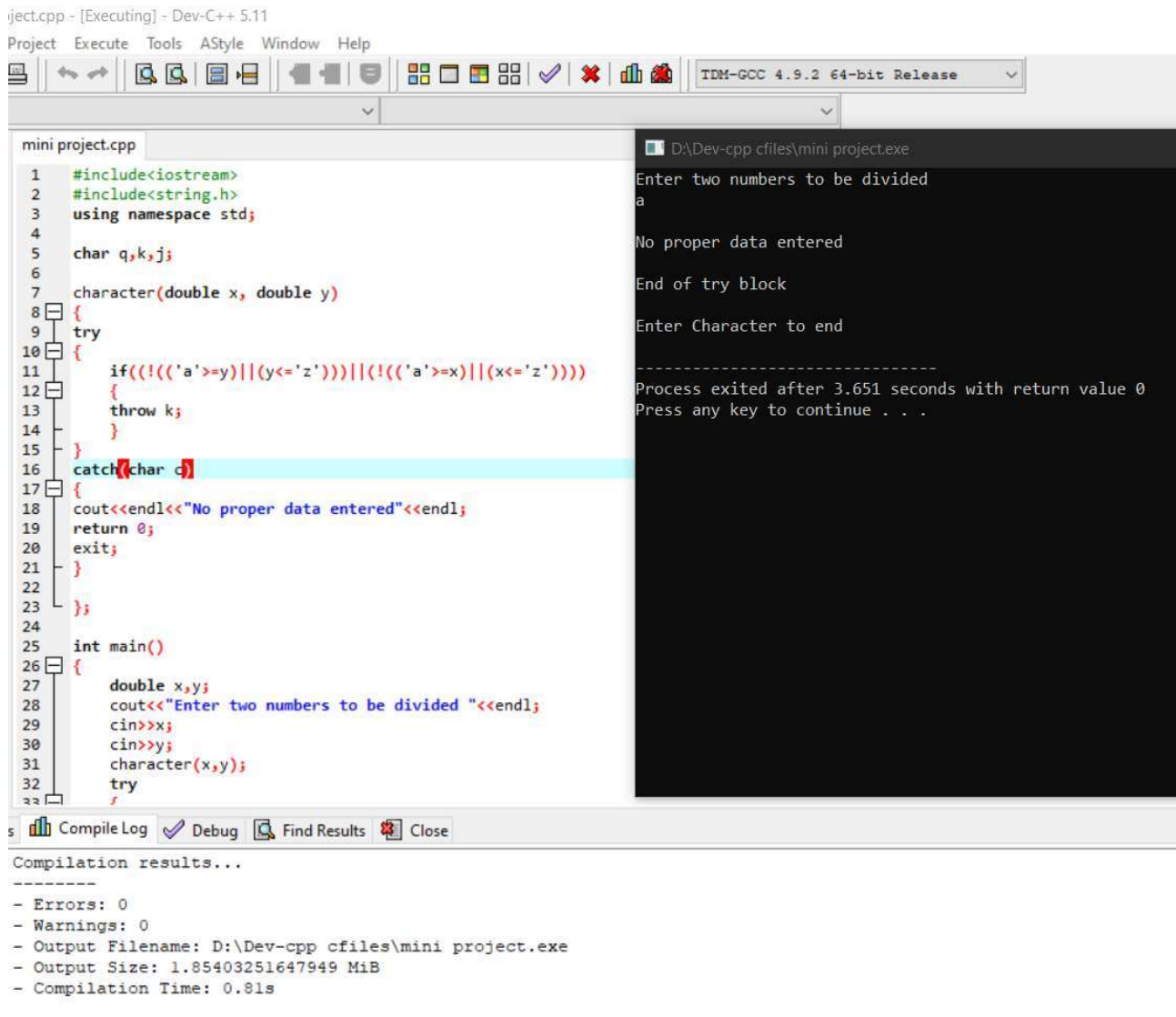
try
{
    if((x>y)&&(x>=0)&&(y!=0))
    {
        cout<<"x/y = "<<x/y<<endl;
    }
    else if((x<y)&&(y!=0)&&(x!=0))
    {
        throw 0;
    }
    else if(y==0)
    {
        throw 1.0;
    }
    else if((x==0)&&(y>=0))
    {
        cout<<"the result of given value is Zero "<<endl;
    }
    cout<<endl<<"End of try block"<<endl;
}
catch(int i)
{
    cout<<"Value of second number greater than first number
"<<endl;
}
catch(double y)
{
    cout<<"Cannot divide by 0"<<endl;
}
cout<<endl<<"Enter Character to end"<<endl;
cin>>j;
return 0;
}

```

3. Project Output

The Project Output is as below :-

Output 1 : For Character in x

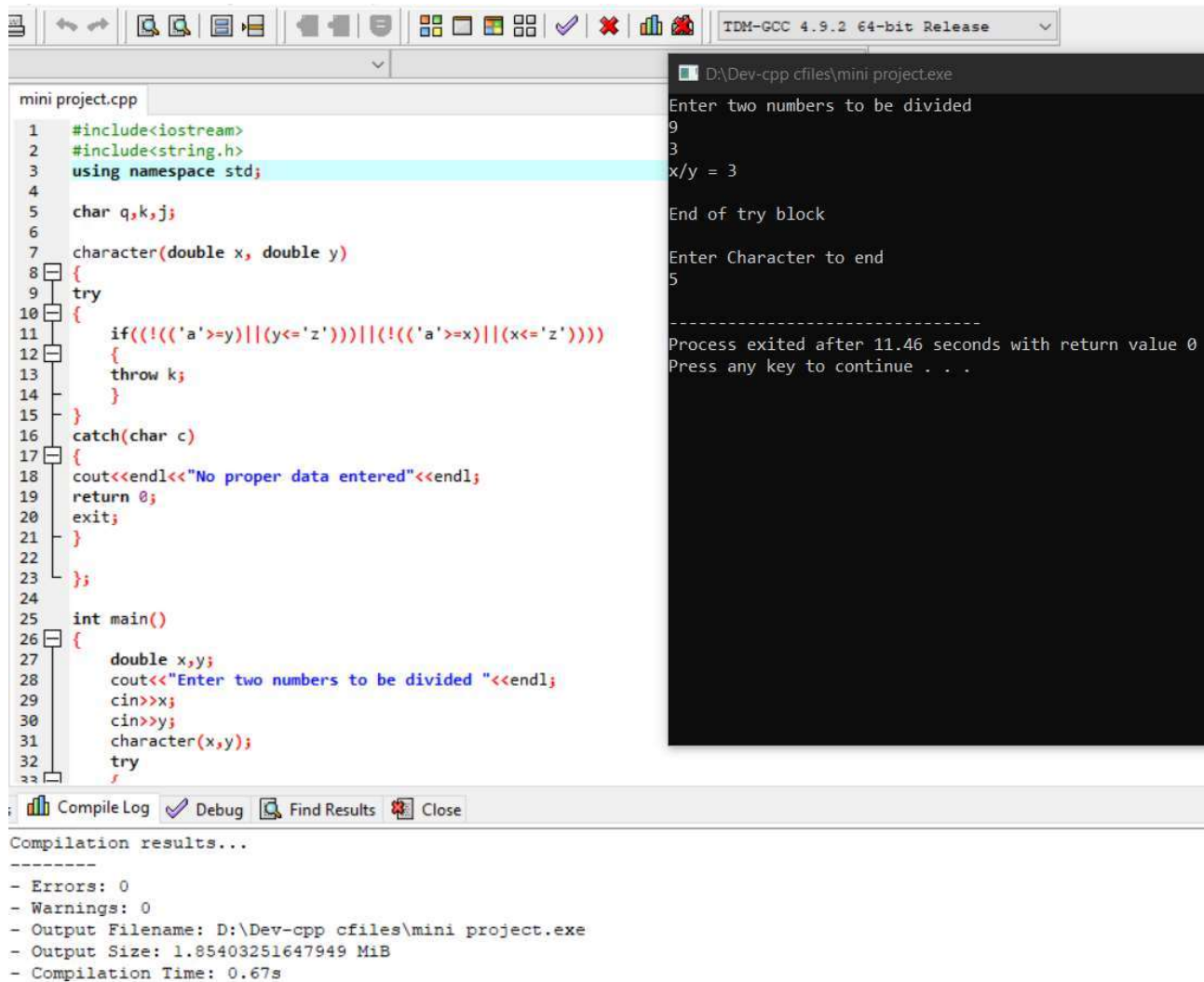


```
mini project.cpp
1  #include<iostream>
2  #include<string.h>
3  using namespace std;
4
5  char q,k,j;
6
7  character(double x, double y)
8  {
9      try
10     {
11         if(!(((('a'>=y)||('z'<=y)))||(!(((('a'>=x)||('z'<=x))))))
12         {
13             throw k;
14         }
15     }
16     catch(char d)
17     {
18         cout<<endl<<"No proper data entered"<<endl;
19         return 0;
20         exit;
21     }
22 }
23
24
25 int main()
26 {
27     double x,y;
28     cout<<"Enter two numbers to be divided "<<endl;
29     cin>>x;
30     cin>>y;
31     character(x,y);
32     try
33     {
```

```
D:\Dev-cpp cfiles\mini project.exe
Enter two numbers to be divided
a
No proper data entered
End of try block
Enter Character to end
-----
Process exited after 3.651 seconds with return value 0
Press any key to continue . . .
```

```
Compilation results...
-----
- Errors: 0
- Warnings: 0
- Output Filename: D:\Dev-cpp cfiles\mini project.exe
- Output Size: 1.85403251647949 MiB
- Compilation Time: 0.81s
```

Output 2 :Normal Division



The screenshot displays a C++ IDE with two windows. The left window, titled 'mini project.cpp', contains the following code:

```
1  #include<iostream>
2  #include<string.h>
3  using namespace std;
4
5  char q,k,j;
6
7  character(double x, double y)
8  {
9      try
10     {
11         if(!((('a'>=y)||('z'<=y))||(!((('a'>=x)||('z'<=x))))))
12         {
13             throw k;
14         }
15     }
16     catch(char c)
17     {
18         cout<<endl<<"No proper data entered"<<endl;
19         return 0;
20         exit;
21     }
22 }
23
24
25 int main()
26 {
27     double x,y;
28     cout<<"Enter two numbers to be divided "<<endl;
29     cin>>x;
30     cin>>y;
31     character(x,y);
32     try
33     {
```

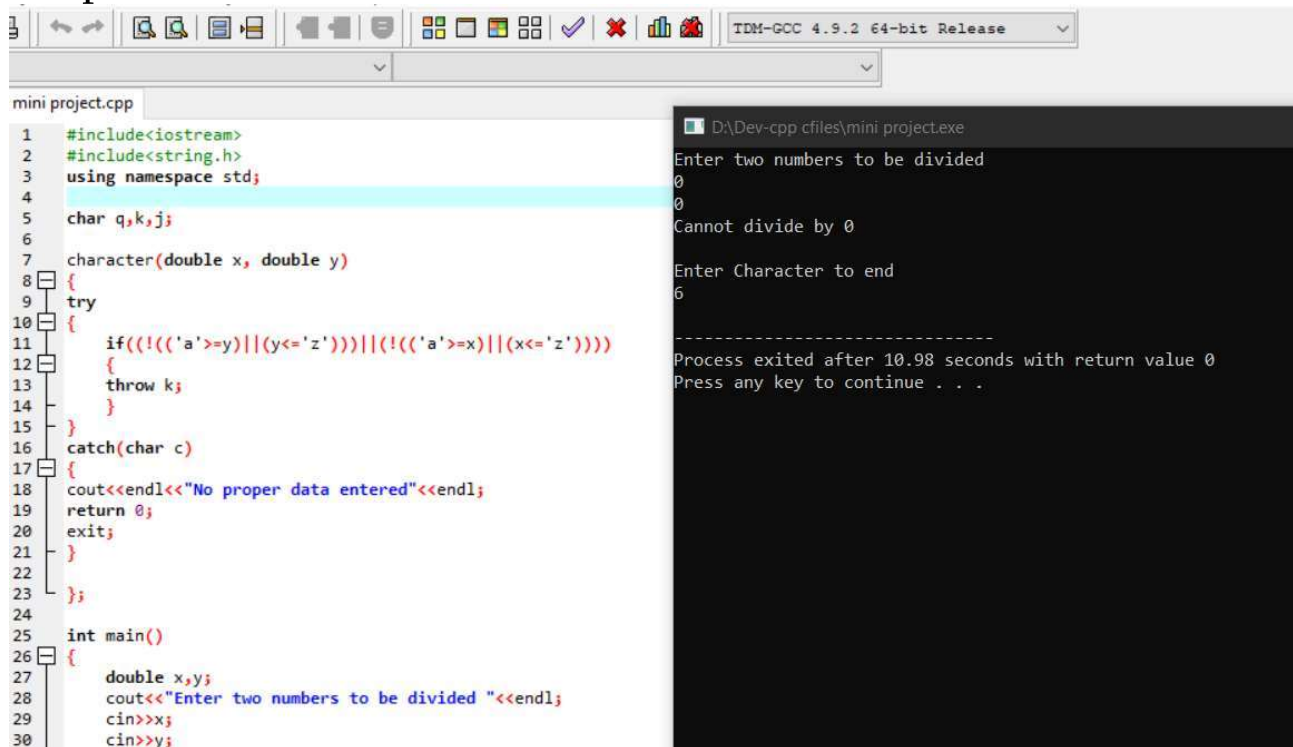
The right window, titled 'D:\Dev-cpp cfiles\mini project.exe', shows the program's execution output:

```
Enter two numbers to be divided
9
3
x/y = 3
End of try block
Enter Character to end
5
-----
Process exited after 11.46 seconds with return value 0
Press any key to continue . . .
```

At the bottom, the 'Compile Log' window shows the following compilation results:

```
Compilation results...
-----
- Errors: 0
- Warnings: 0
- Output Filename: D:\Dev-cpp cfiles\mini project.exe
- Output Size: 1.85403251647949 MiB
- Compilation Time: 0.67s
```

Output 3 : For Two Zero Values Entered



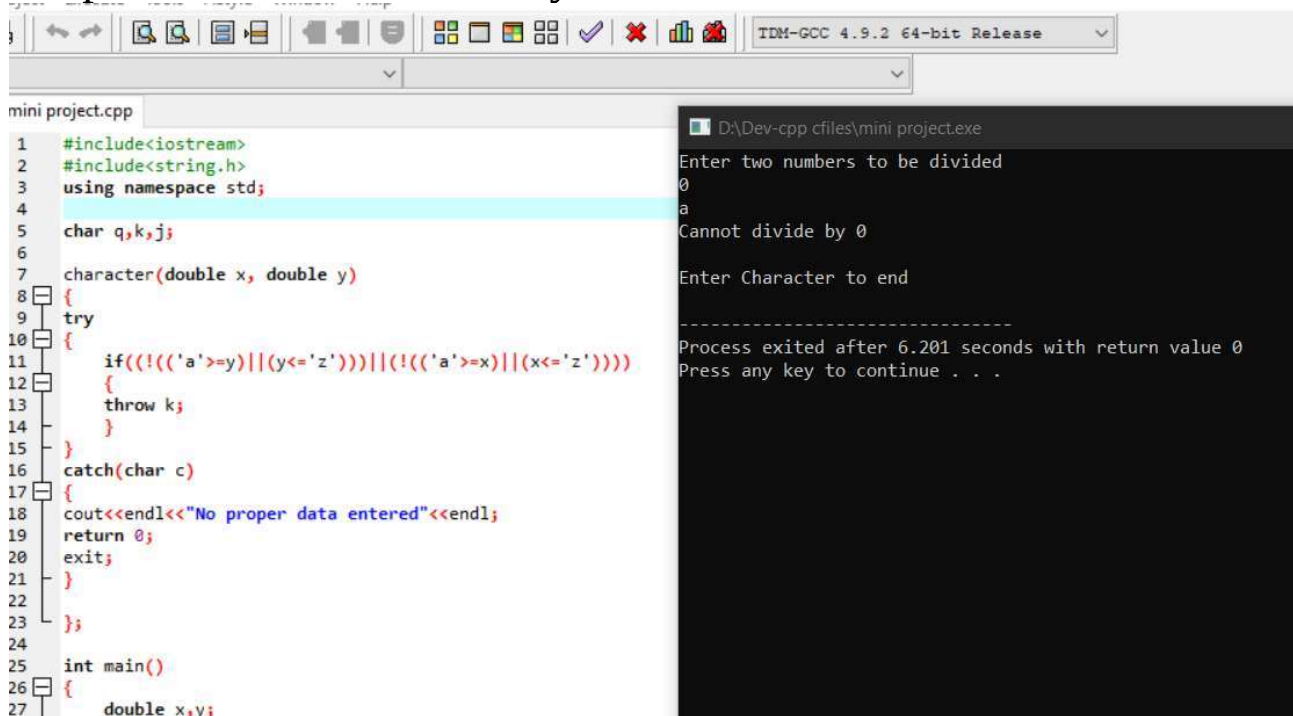
```
1 #include<iostream>
2 #include<string.h>
3 using namespace std;
4
5 char q,k,j;
6
7 character(double x, double y)
8 {
9     try
10    {
11        if(!(((('a'>=y)||('z'<=y))||(!((('a'>=x)||('z'<=x))))))
12        {
13            throw k;
14        }
15    }
16    catch(char c)
17    {
18        cout<<endl<<"No proper data entered"<<endl;
19        return 0;
20        exit;
21    }
22 }
23
24
25 int main()
26 {
27     double x,y;
28     cout<<"Enter two numbers to be divided "<<endl;
29     cin>>x;
30     cin>>y;
```

DA\Dev-cpp cfiles\mini project.exe

Enter two numbers to be divided
0
0
Cannot divide by 0
Enter Character to end
6

Process exited after 10.98 seconds with return value 0
Press any key to continue . . .

Output 4 : For character in 'y'

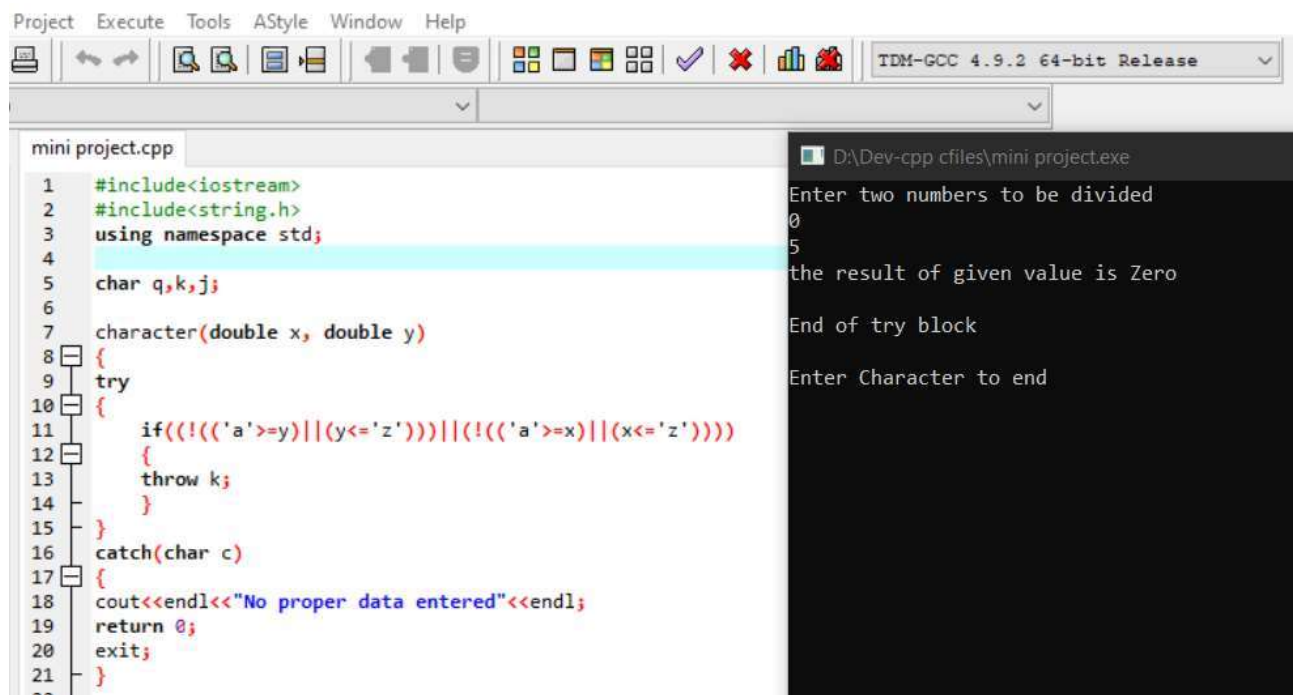


The screenshot shows a C++ IDE with a file named 'mini project.cpp'. The code defines a function 'character' that takes two doubles 'x' and 'y'. It uses a try-catch block to handle exceptions. The try block contains an if statement that checks if 'y' is greater than or equal to 'a' or 'y' is less than or equal to 'z'. If true, it throws an exception 'k'. The catch block catches the exception and prints 'No proper data entered' followed by a newline, then returns 0 and calls 'exit'. The main function calls 'character' with 'x' and 'y'.

```
1 #include<iostream>
2 #include<string.h>
3 using namespace std;
4
5 char q,k,j;
6
7 character(double x, double y)
8 {
9     try
10    {
11        if(((('a'>=y)|| (y<='z')))||((('a'>=x)|| (x<='z'))))
12        {
13            throw k;
14        }
15    }
16    catch(char c)
17    {
18        cout<<endl<<"No proper data entered"<<endl;
19        return 0;
20        exit;
21    }
22 }
23
24
25 int main()
26 {
27     double x,y;
```

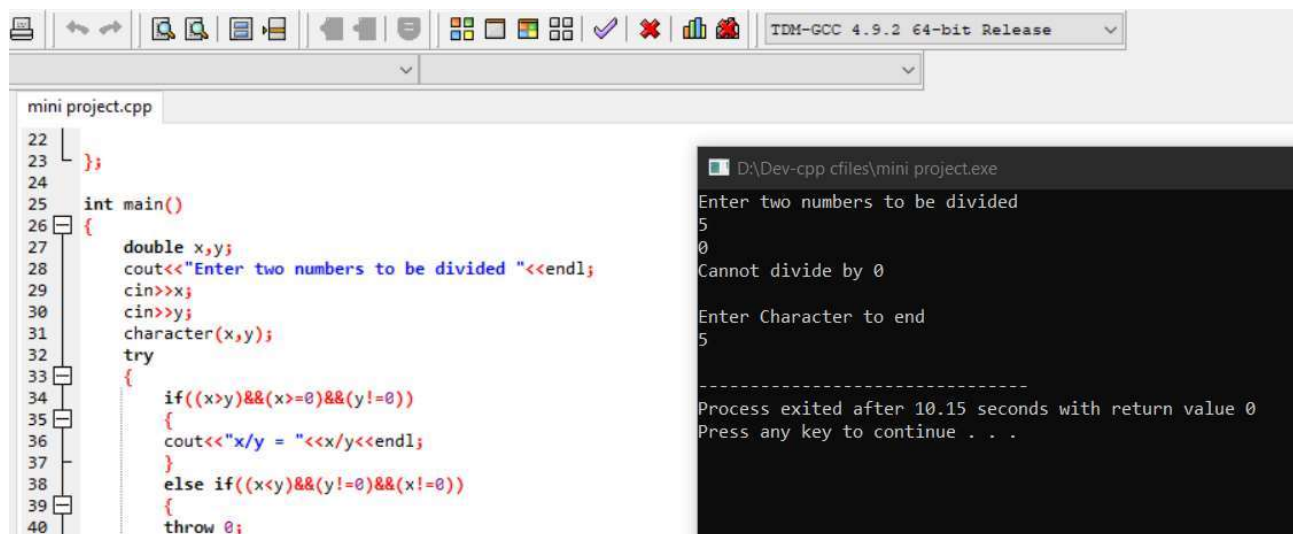
The output window shows the execution of 'mini project.exe'. It prompts 'Enter two numbers to be divided' and receives '0' and 'a'. It then prints 'Cannot divide by 0' and prompts 'Enter Character to end'. The process exits after 6.201 seconds with a return value of 0.

Output 5a : For one Zero Value (x)



The screenshot shows the same C++ IDE with the same code as before. The output window shows the execution of 'mini project.exe'. It prompts 'Enter two numbers to be divided' and receives '0' and '5'. It then prints 'the result of given value is Zero' and prompts 'Enter Character to end'. The process exits after 6.201 seconds with a return value of 0.

Output 5b : For one Zero Value (y)

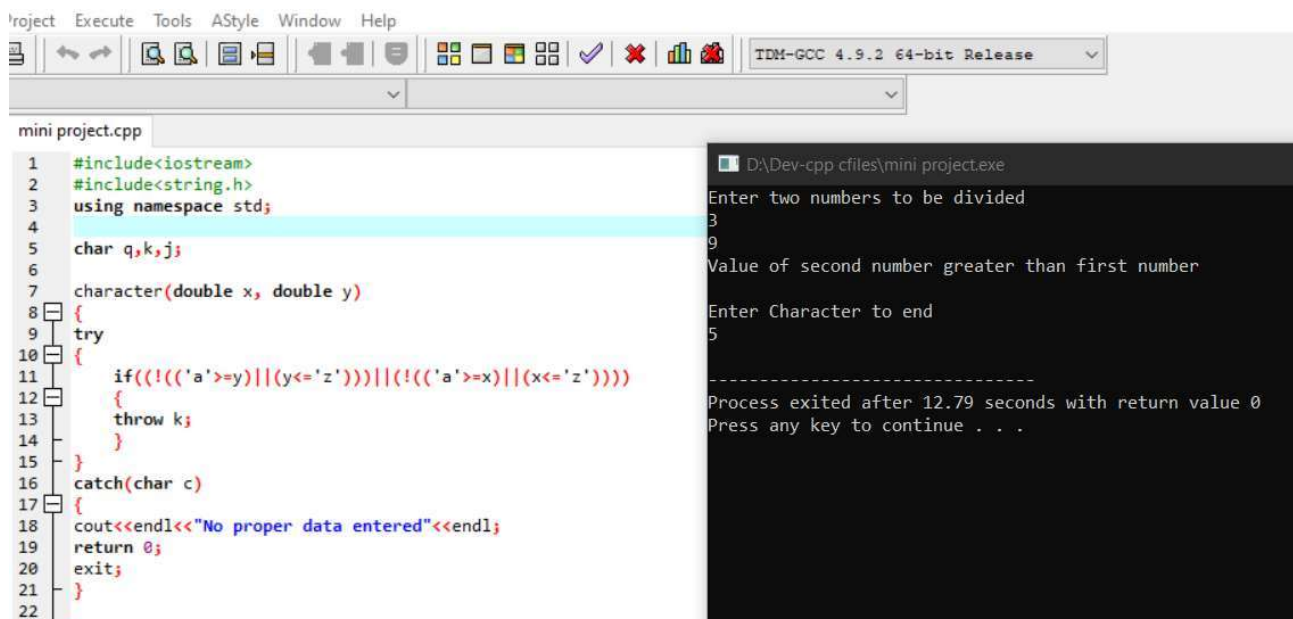


The screenshot shows the TDM-GCC 4.9.2 64-bit Release IDE. The editor displays a file named `mini project.cpp` with the following code:

```
22 |  
23 | };  
24 |  
25 | int main()  
26 | {  
27 |     double x,y;  
28 |     cout<<"Enter two numbers to be divided "<<endl;  
29 |     cin>>x;  
30 |     cin>>y;  
31 |     character(x,y);  
32 |     try  
33 |     {  
34 |         if((x>y)&&(x>=0)&&(y!=0))  
35 |         {  
36 |             cout<<"x/y = "<<x/y<<endl;  
37 |         }  
38 |         else if((x<y)&&(y!=0)&&(x!=0))  
39 |         {  
40 |             throw 0;  
41 |         }  
42 |     }  
43 | }
```

The output window shows the execution of `D:\Dev-cpp cfiles\mini project.exe`. The user enters two numbers, 5 and 0. The program outputs "Cannot divide by 0". The user then enters a character '5' to end the program. The output window shows "Process exited after 10.15 seconds with return value 0" and "Press any key to continue . . .".

Output 6 : Normal Error as per Project statement



The screenshot shows the TDM-GCC 4.9.2 64-bit Release IDE. The editor displays a file named `mini project.cpp` with the following code:

```
1 | #include<iostream>  
2 | #include<string.h>  
3 | using namespace std;  
4 |  
5 | char q,k,j;  
6 |  
7 | character(double x, double y)  
8 | {  
9 |     try  
10 |    {  
11 |        if(!((( 'a'>y)|| (y<= 'z')))||(!((( 'a'>x)|| (x<= 'z')))))  
12 |        {  
13 |            throw k;  
14 |        }  
15 |    }  
16 |    catch(char c)  
17 |    {  
18 |        cout<<endl<<"No proper data entered"<<endl;  
19 |        return 0;  
20 |        exit;  
21 |    }  
22 | }
```

The output window shows the execution of `D:\Dev-cpp cfiles\mini project.exe`. The user enters two numbers, 3 and 9. The program outputs "Value of second number greater than first number". The user then enters a character '5' to end the program. The output window shows "Process exited after 12.79 seconds with return value 0" and "Press any key to continue . . .".