



Regarding Type of Exception

- ▶ The type of the exception **must match** the type specified in a catch statement.

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

int main()
{
    cout << "Start\n";
    try {
        cout << "Inside try block\n";
        throw 100;
        cout << "This will not execute";
    }
    catch (double i) {
        cout << "Caught an exception -- value is: ";
        cout << i << "\n";
    }
    cout << "End";
    return 0;
}
```

Start
Inside try block
Abnormal program termination

https://www.onlinegdb.com/online_c++_compiler

Start
Inside try block
terminate called after throwing an instance of 'int'
Aborted (core dumped)



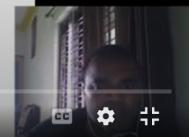
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Can **throw** be outside try block?

- ▶ An exception can be thrown from
 - ▶ **Outside the try block.**
 - ▶ However, **it should be thrown by a function that is called from within try block.**



Sai First EHM II

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

void Xtest(int test)
{
    cout << "Inside Xtest, test is: " << test << "\n";
    if(test)
        throw test;
}

int main()
{
    cout << "Start\n";
    try {
        cout << "Inside try block\n";
        Xtest(0);
        Xtest(1);
        Xtest(2);
    }
    catch (int i)
    {
        cout << "Caught an exception -- value is: ";
        cout << i << "\n";
    }
    cout << "End";
    return 0;
}
```

Press Esc to exit full screen

Start
Inside try block
Inside Xtest, test is: 0
Inside Xtest, test is: 1
Caught an exception -- value is: 1
End

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Sai First EHM II

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

int main()
{
    cout << "Start\n";
    try
    {
        cout << "Inside try block\n";
        cout << "Inside Xtest, test is: " << "test" << "\n";
        if(0) throw 0;
        cout << "Inside Xtest, test is: " << "test" << "\n";
        if(1) throw 1;
        cout << "Inside Xtest, test is: " << "test" << "\n";
        if(2) throw 2;
    }
    catch (int i)
    {
        cout << "Caught an exception -- value is: ";
        cout << i << "\n";
    }
    cout << "End\n";
    return 0;
}
```

Press Esc to exit full screen

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Sai First EHM II

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

void Xhandler(int test)
{
    try
    {
        if(test) throw test;
    }
    catch(int i)
    {
        cout << "Caught Exception #: " << i << '\n';
    }
}

int main()
{
    cout << "Start\n";
    Xhandler(1);
    Xhandler(2);
    Xhandler(0);
    Xhandler(3);
    cout << "End";
    return 0;
}
```

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Start

Caught Exception #: 1

Caught Exception #: 2

Caught Exception #: 3

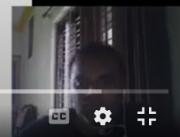
End

- After each exception,

- The function returns.

- When the function is called again,

- The exception handling is reset.



Sai First EHM II

```
#include <iostream>
using namespace std;
Press Esc to exit full screen

int main()
{
    cout << "Start\n";
    try{
        if(1) throw 1;
    }
    catch(int i) {
        cout << "Caught Exception #: " << i << '\n';
    }

    try{
        if(2) throw 2;
    }
    catch(int i) {
        cout << "Caught Exception #: " << i << '\n';
    }

    try{
        if(0) throw 0;
    }
    catch(int i) {
        cout << "Caught Exception #: " << i << '\n';
    }

    try{
        if(3) throw 3;
    }
    catch(int i) {
        cout << "Caught Exception #: " << i << '\n';
    }

    cout << "Start\n";
    return 0;
}
```

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What is the output of the following program?

```
#include <iostream>
using namespace std;
int main()
{
    cout << "Start\n";
    try
    {
        cout << "Inside try block\n";
        cout << "Still inside try block\n";
    }
    catch (int i)
    {
        cout << "Caught an exception -- value is: ";
        cout << i << "\n";
    }

    cout << "End";
    return 0;
}
```

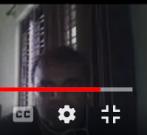
Start
Inside try block
Still inside try block
End

Code associated with a catch statement will be executed only if it catches an exception.



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What is the output of the following program?

```
#include <iostream>
using namespace std;
int main()
{
    cout << "Start\n";
    try
    {
        cout << "Inside try block\n";
        cout << "Still inside try block\n";
    }
    catch (int i)
    {
        cout << "Caught an exception -- value is: ";
        cout << i << "\n";
    }

    cout << "End";
    return 0;
}
```

Start
Inside try block
Still inside try block
End

Code associated with a catch statement will be executed only if it catches an exception.

Otherwise, execution simply bypasses the catch altogether.

