

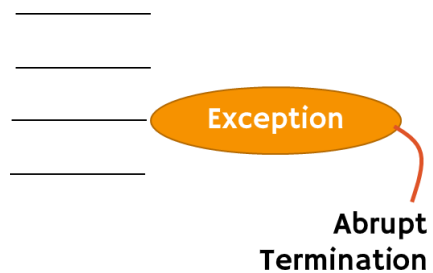
.NET > C#.NET > OOP

## Exception Handling

- by Harsha Vardhan

### Exception Handling

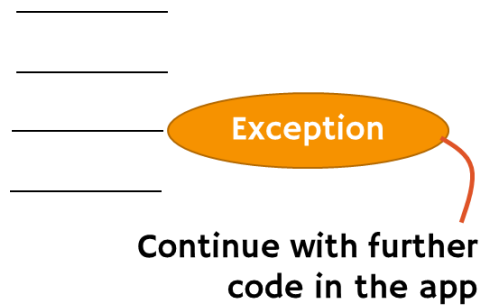
- Run-time errors are exceptions.
- Whenever the CLR is unable to execute a statement, for some reason, it is treated as "Exception".
- By default, exception leads to "abrupt termination application".
- Exception handling avoids abrupt termination; enables smooth continuation of application.
- **Mandatory blocks:** try, catch
- **Optional:** Multiple catch blocks, finally, throw



### Syntax of Exception Handling

```
Exception Handling

try
{
    //statements
}
catch (ExceptionType referenceVariable)
{
    //error handling
}
finally
{
    //finishing work
}
```



### try, catch, finally, throw

- **"try" block** contains all the actual source code to execute.
  - Multiple "try" blocks for one catch block is not allowed.
  - Nested "try" blocks is allowed.
- **"catch" block** contains error handling code; it executes only when a particular type of exception is raised during the execution of "try" block.
  - Multiple "catch" blocks is allowed.
- **"finally" block** executes after successful completion of "try" block; or after any catch block. It is optional.
- **"throw" keyword** is used to throw built-in or custom exceptions, in case of invalid values found.

### Common Exception Classes

- **System.Exception**
  - Base class for all exception classes.
  - Properties: Message, StackTrace, InnerException
- **System.IO.IOException**
  - Error during reading / writing some file in the disk.
- **System.IndexOutOfRangeException**
  - Given index is not found in the collection or array.
- **System.NullReferenceException**
  - The reference variable contains "null"; but you have tried to access some member though it.
- **System.InvalidOperationException**
  - The current state of the object is unable to execute a specific method.
- **System.ArgumentException**
  - The argument supplied to the method is invalid.
- **System.FormatException**
  - Unable to convert the given string into number (as the string contains other than digits).
- **System.Data.SqlClient.SqlException**
  - Unable to read / write from the SQL Server database.

## Catch-When [or] Exception Filters

- New feature introduced in C# 7.1.
- The "catch" block catches the exception, only when the given condition "true".
- "Catch-when" is also known as "Exception Filters".

### Catch When

```
try
{
    //statements
}
catch (ExceptionType referenceVariable) when condition
{
    //error handling
}
```