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# Exceptions (Solutions)

## Questions

1. In computing, what is an exception?
	* A compilation error.
	* When a program user requires a special accommodation.
	* When a behaviour not supposed to happen occurs during execution.
	* A keyword.
2. When a program meets an unexpected behaviour, we say that it…
	* … *raises* an exception.
	* … *throws* an exception.
	* All of the above.
3. An exception can occur when…
	* … a user enters for example the string “Test” when asked for a numerical value.
	* … a division by 0 occurs.
	* … the program tries to access an array outside of its index range.
	* All of the above.
4. A try-catch block…
	* … executes all the code inside its try block, then all its code inside its catch block.
	* … executes all the code inside its try block, then all its code inside its catch block if an exception was raised at any point.
	* … executes only if an exception was raised in the program before.
	* … executes the code inside its try block, and switches to its catch block if an exception was thrown.
	* … executes its catch block first, and then its try block if an exception was raised.
5. A try-catch-finally block…
	* … can have multiple catch block.
	* … can omit the finally block.
	* … can omit the catch block.
	* All of the above.

## Warm-up Exercise

1. Consider the following code:
* using System;

class Program
{
 static void Main()
 {
 try
 {
 Console.WriteLine("Enter a number");
 int uInput = int.Parse(Console.ReadLine());
 int[] t = { 10 };
 int div = 0 / (uInput -1);
 int tAcces = t[uInput];
 }
 catch (IndexOutOfRangeException)
 {
 Console.WriteLine("IndexOutOfRangeException");
 }
 catch (DivideByZeroException)
 {
 Console.WriteLine("DivideByZeroException");
 }
 catch (FormatException)
 {
 Console.WriteLine("FormatException");
 }
 catch (ArgumentNullException)
 {
 Console.WriteLine("ArgumentNullException");
 }
 }
}
* [*(Download this code)*](https:///princomp.github.io/code/projects/TriggeringExceptions.zip)
	+ Determine which input would the user needs to enter to get “IndexOutOfRangeException”, “DivideByZeroException”, “FormatException” and “ArgumentNullException” displayed.
	+ Is there something the user could enter that would *not* raise any exception?

Solution

| Exception | Input |
| --- | --- |
| “IndexOutOfRangeException” | Any number greater than 2. |
| “DivideByZeroException” | 1 |
| “FormatException” | Any string that is not a number (for example, “Test”) |
| “ArgumentNullException” | A null string (ctrl + d on linux, ctrl + z on windows) |

Entering 0 would not raise any exception.