

I. Catching exceptions

week 7

- an *exception* is an event, which occurs during the execution of a program, that disrupts the normal flow of the program's instructions
- after a method *throws* an exception, the runtime system attempts to find something to handle it, called an *exception handler*
- the exception handler chosen is said to *catch the exception*
- we will use try-catch blocks to try an operation, and catch any exceptions the illegal operation throws
- **no code** can be between the end of the `try` block and the beginning of the first `catch` block

```
try {
    System.out.print ("Enter an integer: ");           // code that could throw an error
    number = Integer.parseInt(in.nextLine());
}
catch (NumberFormatException e) {
    System.out.println ("You were supposed to enter an integer!\n");
}
```

- note `NumberFormatException` is the name of the specific exception class, and `e` is the name of the object which holds the exception (data or information)
- see `Double.parseDouble` exceptions
- see `TryParse` examples in text (see catching exceptions)
- in general: if an error **can be prevented, it should be prevented**, rather than letting it occur and then catching it (not all errors can be prevented though)

II. Intro to debugging and the debugger

- the debugger is a tool to help you examine your program variables and program control flow
- setting breakpoints
- stepping into/over
- looking at values of variables
- continuing
- removing breakpoints

ALWAYS REMEMBER: The debugger will not ever fix your program!

III. Try-Catch Example

```
package trycatchexample;

import java.util.Scanner;

public class TryCatchExample {

    public static void main(String[] args) {

        Scanner in = new Scanner(System.in);
        double number;

        try {                // try to parse to double
            System.out.print ("Enter a number: ");
            number = Double.parseDouble (in.nextLine());

            System.out.printf ("Your number was %f%n", number);
        }

        catch (NumberFormatException e) {
            System.out.println ("That is a bogus number " + e.getLocalizedMessage());
        }

        System.out.println ("Execution resumes here..." + "\n");

    }
}
```