

C# - Learn via Examples

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Why This

- You will need some skills for labs
- To show you quickly “HOW TO”
 - Later we will discuss details
- When in doubt,
 - think JAVA & use google
 - You have solid chance it will work 😊

Reading And Writing Text Files

```
using System;
using System.IO;

namespace howto {
    class TextFileReader {
        static void Main(string[] args) {
            // create reader & open file
            StreamReader r = new StreamReader("input.txt");
            StreamWriter w = new StreamWriter("output.txt");

            // read a line of text and write it
            String line = r.ReadLine();
            Console.WriteLine(line);
            w.WriteLine(line);

            // close the stream
            r.Close();
            w.Close();
        }
    }
}
```

Exception Handling

```
using System;
using System.IO;

namespace howto {
    class TextFileReader {
        static void Main(string[] args) {
            StreamReader r = null;
            try { // work with inputs here }
            catch (FileNotFoundException ex) {
                Console.WriteLine("FileNotFoundException Error" + ex.Message);
            } catch (IOException) {
                Console.WriteLine("FileIO Error");
            } catch (UnauthorizedAccessException) {
                Console.WriteLine("F Access Error");
            } catch (System.Security.SecurityException) {
                Console.WriteLine("Security Error");
            }
            catch (Exception) { // any other exception
                Console.WriteLine("Any Other exception");
            } finally { if (r != null) r.Close(); }
        }
    }
}
```

Use MSDN to find out exceptions

- C# does not have throws
 - Nothing like checked and unchecked exceptions
 - See MSDN for list of exceptions
 - e.g. http://msdn.microsoft.com/cs-cz/library/system.io.streamreader_members.aspx

Command Line Arguments

```
using System;

namespace howto {
    class MainClass {
        static void Main(string[] args) {
            string s = args[1];
            try {
                int intParam = Int32.Parse(args[0]);
            }
            catch (Exception) {
                Console.WriteLine("Can not parse argument");
            } finally {
            }
        }
    }
}
```

Command Line Arguments

```
using System;

namespace howto {
    class MainClass {
        static void Main(string[] args) {
            string s;
            try {
                int intParam = Int32.Parse(args[0]);
                s = args[1];
            }
            catch (Exception) {
                Console.WriteLine("Can not parse argument");
            }
        }
    }
}
```

Collections - List

```
using System.Collections.Generic;
using System;

class Program {
    static void Main() {
        List<int> list = new List<int>();
        list.Add(2);
        list.Add(3);
        list.Add(5);
        list.Add(7);

        foreach (int prime in list){
            Console.WriteLine(prime);
        }

        for (int i = 0; i < list.Count; i++){
            Console.WriteLine(list[i]);
        }
    }
}
```


Collections - Dictionary

```
using System;  
using System.Collections.Generic;
```

```
class Program {  
    static void Main() {
```

```
        Dictionary<string, int> d = new Dictionary<string, int>();  
        d.Add("apple", 1); d.Add("windows", 2); d.Add("linux", 3);
```

```
        if (d.ContainsKey("apple")) {  
            int v = d["apple"];  
            Console.WriteLine(v);  
        }
```

```
        foreach (KeyValuePair<string, int> pair in d) {  
            Console.WriteLine("{0}, {1}", pair.Key, pair.Value);  
        }
```

```
        foreach (var pair in d) {  
            Console.WriteLine("{0}, {1}", pair.Key, pair.Value);  
        }
```

```
    }  
}
```

String.split

using System;

```
class Program {  
    static void Main() {  
        string s = "there is a cat\n in the house";  
        string[] words = s.Split(' ');  
        foreach (string word in words){  
            Console.WriteLine(word);  
        }  
        char[] delimiters = new char[] { ' ', '\n' };  
        words = s.Split(delimiters);  
        foreach (string word in words){  
            Console.WriteLine(word);  
        }  
        words = s.Split(delimiters, StringSplitOptions.RemoveEmptyEntries);  
        foreach (string word in words){  
            Console.WriteLine(word);  
        }  
    }  
}
```