# Module 1 Day 17

File I/O: Writing Files

# What makes an application?

- Program Data
  - ✓ Variables & .NET Data Types
  - ✓ Arrays
  - ✓ More Collections (list, dictionary, stack, queue)
  - ✓ Classes and objects (OOP)
- Program Logic
  - ✓ Statements and expressions
  - ✓ Conditional logic (if)
  - ✓ Repeating logic (for, foreach, do, while)
  - ✓ Methods (functions / procedures)
  - ✓ Classes and objects (OOP)
  - ❑ Frameworks (MVC)

- Input / Output
  - User
    - ✓ Console read / write
    - ❑ HTML / CSS
    - ❑ Front-end frameworks (HTML / CSS / JavaScript)
  - Storage
    - ❖ File I/O
    - ❑ Relational database
    - ❑ APIs

# Exceptions

- Exceptions are how the .Net Framework reports runtime errors
- Exceptions are thrown when an error occurs
- Your code can catch an error and handle it
  - You can re-throw it using throw;
- Examples of runtime errors:
  - Attempting to int.Parse a non-numeric value
  - Attempting to read a File that does not exist
  - Divide by zero
  - NULL reference exception
- You can define and throw your own Exceptions
- Exceptions “unwind the stack” until someone catches it

# Exceptions

```
try
{
    // Do some work here...
}
catch (ArgumentNullException e)
{
    // catch most specific Exceptions first
}
catch (Exception e)
{
    // (optional) catch more general exceptions later
    // (optional) re-throw the same exception so it can be caught further up the stack
    throw;
}
finally
{
    // (optional) Do work that shouldexecute whether the above succeeded or failed
}
```

# Writing to a File

- Use a *StreamWriter*
- Write and WriteLine methods
- Flush method writes any *buffered* data
- Dispose does that for you (using)

```
using (StreamWriter sw = new StreamWriter(outPath, false)) // False is default (do not append - overwrite)
{
    sw.Write("Write a portion of a line.");
    sw.WriteLine("Write a line with line-feed.");
}  // End of using - buffer is flushed and file is closed
```