



TRAILHEAD
TECHNOLOGY PARTNERS

.NET and C# Training

Session 10

Overall Agenda

~~Session 1 – 6: Basic and Advanced C# and VS~~

~~Session 7: Classes available in .NET BCL~~

~~Session 8: Data Access Basics (ADO.NET)~~

Session 9 - 10: C# Advanced concepts

2 Week Break – Wed, Jul 27

Session 11 – 12: Data Access with Entity Framework 6

Session 13 – 14: Version Control with TFVC and Git

Session 15 – 16: ASP.NET (RESTful) Web APIS

Today's Agenda

1. Review last assignment (1 hr 30 min)
2. Advanced C# (2 hr)
3. New assignment (30 min)

Review Last Assignment

Assignment 9

- Rewrite your assignment 7 project (or another applicable previous assignment) where you used loops to find items in arrays/collections and use LINQ instead
- Try using both query and methods syntaxes in your code

Challenge 1: Create a WinForms application that uses event handlers from UI components <https://docs.microsoft.com/en-us/dotnet/desktop/winforms/event-handlers-overview-windows-forms?view=netframeworkdesktop-4.8>

Advanced C#

Demo

Revisit LINQ

Demo

Yield

Demo

Yield and LINQ

Demo

LINQ to XML

Demo

Tuples

Demo

Configuration

DEMO

ADO.NET Transactions and TransactionScope

DEMO

Creating Your Own Generic Types

Assignment 10

Pick 2 or more ideas below to implement over the next 2 weeks:

- A Weather API that is based on an address or ZIP code
https://geocoding.geo.census.gov/geocoder/Geocoding_Services_API.html#_Toc7768595
<https://weather-gov.github.io/api/gridpoints>
<https://ipinfo.io/developers/data-types#geolocation-data>
<https://www.ipify.org/>
- A console application that can compile a file or files of C# code
<https://docs.microsoft.com/en-us/troubleshoot/developer/visualstudio/csharp/language-compilers/compile-code-using-compiler#compile-code-by-using-c-compiler>
- A console application that reads from an RSS feed, checks each post for what language it is using an API, and filters out the non-English content
<https://azure.microsoft.com/en-us/pricing/details/cognitive-services/translator/>
<https://docs.microsoft.com/en-us/azure/cognitive-services/language-service/language-detection/quickstart?pivots=programming-language-csharp>
<https://www.planetxamarin.com/feed>
- Use a NASA API to do something cool or useful
<https://api.nasa.gov/index.html>
- Create a console application that is a public library management system which stores books, patrons, and loans in a database and does all the basic functions of a library – check-in, check-out, late notices/fees, waitlists/holds, etc.
- Create a graph (bar, line, pie, etc) programmatically using the Graphics namespace and base it on data from census API, caching the results in a database if they've already been retrieved recently
<https://www.census.gov/data/developers/data-sets.html>

<https://github.com/jonathantower/learning-dotnet>