

Day 1: C# Core Concepts

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| Introductions and brief Q&A | 15 minutes |
| Creating a GitHub Repository Fork | 15 Minutes |

| C# 5.0 Concepts I | | 180 minutes | | |
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| Module | Topics | Duration | Elapsed time | |
| Into to Visual Studio | Creating a project Editing code Running an app Debugging | 10m | 40m | |
| Controlling flow | Decision making (if/switch) Looping (while/do/for/foreach) | 10m | 50m | |
| Types and assemblies | Value vs reference types Assemblies Garbage collection | 10m | 60m | |
| Exercise | <ul style="list-style-type: none">Create a C# console app and writing to the console in a loop | 15m | 75m | |
| Classes and objects | Classes Inheritance Fields Properties Methods Virtual methods Statics | 20m | 95m | |
| Exercises / break | <ul style="list-style-type: none">Creating a classDefining a field and propertyAdding a methodCreating an instance of our class | 15m ex 15m br | 125m | |
| Interfaces | Why use interfaces? Defining Interfaces in C# Implementing interfaces | 10m | 135m | |
| Events | What are events? Inside an event Creating custom events | 15m | 150m | |
| Exercises / break | <ul style="list-style-type: none">Define, implement, and fire an event | 15ex 45br | 210m | |

| C# 5.0 Concepts II | | 150 minutes | | |
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| Module | Topics | Duration | Elapsed time | |
| Change Notification | Why use property notifications? Implementing INotifyPropertyChanged (INPC) | 15m | 225m | |
| Exercises / break | <ul style="list-style-type: none">Implement INPC in your classImplement an observer | 20m | 245m | |

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| Generics | Why use Generics? Creating a Generic Type Constraining the type of the generics | 15m | 260m |
| Exercises / break | <ul style="list-style-type: none"> Create a generic type | 15m ex 15m br | 290m |
| Iteration | IEnumerable foreach Yield return | 15m | 350m |
| Collections | Arrays Lists Dictionaries Stacks and queues Sets | 15m | 305m |
| Exercises | <ul style="list-style-type: none"> Creating and using arrays, lists and dictionaries | 20m | 325m |
| Attributes | What are attributes? Applying an attribute Creating a custom attribute Accessing attributes through reflection | 10m | 335m |
| Exercises / break | <ul style="list-style-type: none"> Implement an enumerable using yield return | 10m | 360m |