

.NET Backend Track

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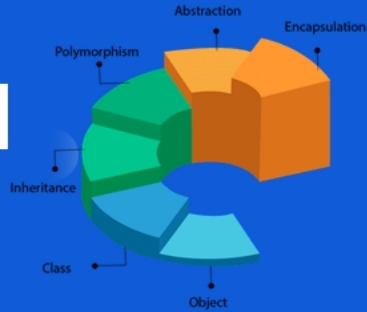


1



- History of C# and .NET technologies
- Installation the tools and setup the environment
- Types or error (compiler error, linker error, runtime error, logical error)
- The first program in C# (Hello world)
- Preprocess directive, comments, namespaces, basic of IO
- DataTypes & how store in memory and it's sizes
- Compound DataTypes (Arrays/list)
- Statements and operators
- Controlling program flow (if/else/switch/for/while/...etc)
- Characters and strings (C-style string & C++ String & C# String)
- Functions & return & Stack & Heap
- Value and References Types
- Challenge on each topic + Project (Numbers clipboard)

2

**OOP**

- Classes and object in details
 - Constructors & destructors
 - Delegate & Copy Constructors
 - Members (Methods/Attributes/Properties/Indexer)
 - Structs vs Classes
 - Operator Overloading (build our own String data type)
 - Inheritance
 - Polymorphism
 - System.Object
 - Exception handling
-
- Challenge on each topic
+ Project (Student management system)

Advanced C#

- Template / Generics
- Collections/Linq (Extension methods)
- Delegate event-driven programming (deep dive/built our own Delegate and more)
- Deal With Files
- Enums
- Anonymous types/Methods/Lambda Expression
- best practices in C#



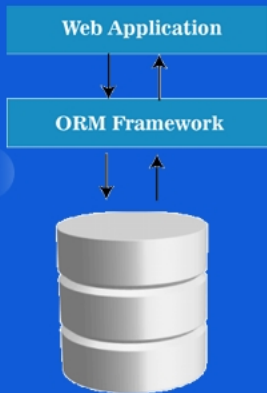
- Challenge on each topic + Problem Solving



- Database design & DB Engine
(ERD/EERD/Mapping/Normalization/...)
 - Data Definition & Manipulation Language (Implementation)
 - ANSI SQL / T-SQL
 - Advanced topics (Index/Stored Procedure/Triggers/XML/...)
 - Database backups and restores
-
- Challenges on each topic
+ Project (Design and implement fully Database to company)



5



- Basics of ADO.NET
- Basics of Dapper
- Entity Framework Core (Code First/scaffolding)

➤ Challenge on each topic



6



.NET Core



- Structure/Razor pages
- MiddleWares/Kestral
- State management
- Tag Helper
- Validations (Server side/client side/custom)
- SOLID Principles
- Some of design patterns
- Ajax calling
- Identity
- publish
- Blazor OR HTML and "Basics" of CSS/JS/Bootstap
- Task on each topic + Crud Project with authorization layer

MVC Task Management

(Attached)



7



- Structure/Cors
- RESTful services
- Jwt authentication/Filters

➤ Task on each topic





Mini fully Online Shop

(Attached)





➤ All of the course using Git/GitHub to save our projects

SignalR

➤ Plus: SignalR (mini real time chat application)

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