DOTNET INTERVIEW NOTES (1-MONTH PREPARATION)

PART 1: .NET BASICS

.NET is Microsoft's development framework to build Web, Mobile, Desktop, API, Cloud, and Game applications using C#.

It is fast, secure, and cross■platform.

.NET Framework vs .NET Core vs .NET (Unified)

- .NET Framework: Windows only.

- .NET Core: Cross■platform, fast.

- .NET Unified (.NET 5 to 8+): Latest, cross■platform, modern.

PART 2: C# BASICS

Important Data Types: int, float, double, string, bool, char, decimal, var.

Operators: Arithmetic (+, -, *, /), Comparison (==, !=), Logical (&&, ||, !).

PART 3: OOPS CONCEPTS

Encapsulation: Hiding data using private.

Abstraction: Showing only essential features using abstract class or interface.

Inheritance: Reusing code across classes.

Polymorphism: Overloading (compile■time) and overriding (runtime).

PART 4: IMPORTANT C# CONCEPTS

Constructors: default, parameterized, copy, static.

Interface vs Abstract Class: Interface has no implementation; abstract has partial implementation.

Value vs Reference Types: Value on stack; reference on heap.

PART 5: ASP.NET CORE BASICS

ASP.NET Core is a cross■platform web framework using MVC.

MVC:

- Model: Data

- View: UI

- Controller: Logic

Routing maps URLs to actions.

Dependency Injection improves testability.

PART 6: DATABASE & ENTITY FRAMEWORK CORE

EF Core: ORM for database operations (CRUD).

LINQ Example: var data = users.Where(x => x.Age > 20).ToList();

Approaches: Code First, Database First.

PART 7: REST API BASICS

Methods:

- GET: Read

- POST: Create

- PUT: Update

- DELETE: Remove

Status Codes:

200 OK, 201 Created, 400 Bad Request, 401 Unauthorized, 404 Not Found, 500 Server Error.

Authentication:

JWT, Identity Framework.

PART 8: 1■MONTH STUDY PLAN

Week 1: C# basics + OOPs

Week 2: Advanced C# + MVC

Week 3: SQL + EF Core

Week 4: REST API + JWT + Interview Questions