

DAY 1

FullStack development

- front end + middle layer + data layer Web site + web services + database management

online shopping application using .NET

- Database:
 - MySQL + local database (local sql server)
- Business logic :
 - Product catalog logic
 - Shopping cart
 - order proccesing
 - Payment and billing
 - Authentication and Authorization
 - shipment (Delivery)
- Service layer:
 - Product Catalog service
 - Shopping cart service
 - order proccesing service
 - Payment process and billing service
 - Authentication service
 - Authorization service
 - shipment (Delivery) service

light weight , business logic accessed by via HTTP request REST ful web services

- Web Site:
 - web user interface + online web application management
 - web pages + validation + state management, web security, caching, personalization, multilingual web, etc..
 - Responsive UI

Baby step Learning:

- Hello world using Visual Studio.NET
- learn basics of C# Progtamming
- Learn Visual studio .NET Application Development Process

Rules to create project

- Launch VS IDE
- create .NET Framework Console Application
- Start working with Project by modifying or adding C# code

Console Class

- Two static major function
 - WriteLine, ReadLine

```
Console.ReadLine("hello world");  
Console.WriteLine();
```

- Everything in C# is defined within namespace
- Each class should be defined in namespace.
- Class can have static and nonstatic methods.
- Entrypoint function main is always methods.
- Command Arguments are always access through string[] args.
- public, private, protected and internal are access specifiers in C#.
- Class can have overloaded ctor.
- class expose private data members to outside using member functions as well as through properties.
- Properties always encapsulate private data members of instance.
- Properties can be readonly or writeonly as well.
- It is good practice to write new class in separate file.
- this keyword in C# represents self reference of an instance.
- value is a built-in keyword in C#

Day 3

Agenda

1. C# Language Features
2. .NET Framework
3. Assembly

Official Documentation

- Microsoft official .NET Documentation

No. Stackoverflow-----> this site gives a lot of ready-made problems

- solving samples

C# Language Features

Language syntax

- Basic syntax of C# is similar like C++
- New Keywords in C#
- New Approach while developing Solution
- Loosely Coupled, highly Cohesive
- Common Type System (CTS)

Value Types:

```
primitive types ( inbuilt types)
    int, float, double, ....
    enumeration
    structure
    values are stored on stack
```

Reference Types:

```
- class:
    - concrete class
    - abstract class
- interface:
    - IPrintable
    - ISacnnable
    Delegate:
    Event:
```

- they are always stored on heap
- Heap is used for dynamic memory allocation for objects in .NET
- Heap is managed by Garbage collector
- Garbade collector takes care Automatic Memory Management.