Advance Programming Techniques (APT)

Lecture # 7

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Properties

- A Property in C# is a member of a class that is used to set and get the data from a data field (i.e. variable) of a class

- Property in C# is never used to store any data, it just acts as an interface or medium to transfer the data

- Properties allow controlled access to private data fields while keeping the internal representation hidden from outside code

Properties

```
class Person
{
    private string name; // field

    public string Name    // property
    {
        get { return name; }   // get method
        set { name = value; }  // set method
    }
}
```

Types of Properties in C#

- The C#.NET supports four types of properties. They are as follows

  - Read-Only Property

  - Write-Only Property

  - Read Write Property

  - Auto-Implemented Property

Advantages of Properties in C#

- Properties will provide the abstraction to the data fields

- They also provide security to the data fields

- Properties can also validate the data before storing it in the data fields

Practice Exercise 1

- Create a class Account with balance as private data member

- Create getter and setter properties. Please note that balance can't be negative

- Create a constructor to set balance initially

- Create two objects of Account in main()

- Input amount and add into balance of both objects and show the balance

- Also format the output as currency

Practice Exercise 2

- Create a class Book with fields: Title, Author, Price. Add a method DisplayInfo()

- Create a class Rectangle with methods to calculate Area and Perimeter.

- Add constructor to both classes

- Create multiple objects and test them in main().