**✅ Overview -1**

We looked at C# as one of the programming language.

Reasons why C# is a widely used professional language

We shall discuss the tools required to creating C# programming (IDE)

**✅ Program Structure-2**

Namespace declaration

A Class

Class methods

Class attributes

A main method

Statements and Expressions

Comments

**✅ Primitive types and Variables-3**

Describe the types in C#

What are variable?

Defining a variable

**✅ Operators and Expression-4**

Arithmetic Operators

Relational Operators

Logical Operators

Miscellaneous

**✅ Conditional Statements (Decision Making)-5**

**✅ Loops and Arrays-6**

We look at the various types of Loop

What is Array

Declaring Arrays

Initializing an Arrays

Assigning Values to an Array

Accessing Array Element

**✅ Strings and Text Processing--7**

Creating a String Object

By assigning a string literal to a string variable

By using a String class constructor

By using the string concatenation operator (+)

By retrieving a property or calling a method that returns a string

By calling a formatting method to convert a value or an object to its string representation.

**✅ Enum --8**

Definition: An enumeration is a set of named integer constants.

Declaring enum variable with example

**✅ Abstraction and Encapsulation---9**

We shall briefly look into these OOP concepts before we discuss Method

Explain types of Access Modifiers

**✅ Methods---10**

Defining Methods in C#

How to create method

Passing Parameters to a method

**✅ Class---11**

Defining a Class

Member Functions and Encapsulation

C# Constructors---Types of constructors

Student should read about destructor

Static Members of a C# Class

**✅ Text files ---12**

What are Streams? (Data transport channel)

Basic things to know about Streams

Basic operation with Streams

**✅ Software Development Collaboration Tools and Libraries---13**

Git Setup and Configuration

Version control and code repository

Git commands

**✅ OOP Principles ---14**

Creating and Using objects

Fundamental principles of OOP

Encapsulation

Inheritance (Method Overloading and Method Overriding)

Abstraction

Polymorphism

SOLID Principles

AutoMapper

Circular Dependency

✅ **Exception Handling---15**

What is an Exceptions

Types of Exception (Application and System Exception (runtime))

C# exception handling is built upon four keywords: **try**, **catch**, **finally**, and **throw**.