



## **.Net C# Topics**

**This document provides the details of C# topics which will be covered in class.**

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1. What is C#.
2. What is consoleapplication.
3. Data Types in c#.
4. Operator used in c#.
5. What are Nullable types in c#.
6. DataType Conversions.
7. What are arrays.
8. If/Switch/While/Do while.
9. For/Foreach
10. What are methods. How to pass method parameter.
- 11.Namespaces.
- 12.Introduction to classes.
- 13.Purpose of a class constructor
14. Overloading class constructor
15. Understanding this keyword
16. Destructors
- 17.Static and instance class members
- 18.- Inheritance in c#
- 19.Method hiding in c#.
20. Why Properties in c#.
- 21.Properties in C#

22. Structs in C#
23. Explicit interfaces implementation
24. Abstract classes in c#
25. - Difference between abstract classes and interfaces
26. Problems of multiple class inheritance
27. Problems of multiple class inheritance
28. Multiple class inheritance using interfaces
29. Delegates in c#
30. Delegates usage in c#
31. - Delegates usage in c# continued
32. Tutorial Multicast Delegates in C#
33. Inner Exceptions in C#
34. Custom Exceptions in C#, Exception handling abuse
35. Preventing exception handling abuse
36. Tutorial Why Enums, Enums Example
37. Enums in c#
38. Difference between Types and Type Members.
39. Access Modifiers in C#
40. Internal and Protected Internal Access Modifiers in C#
41. Access Modifiers for types
42. Attributes in C#.
43. Reflection in C#, Reflection Example
44. Late binding using reflection
45. Generics in C#
46. OverRideToString(),override Equals Method
47. Difference between Convert ToString and ToString
48. Difference between String and StringBuilder.
49. Partial classes in c#,Creating partial classes in c#
50. Partial methods in c#
51. What is indexers& where used in .net
52. Overloading indexers in c#.
53. Optional parameters in c#.
54. Making method parameters optional using method overloading,  
Making method parameters optional by specifying parameter defaults
55. Making method parameters optional by using OptionalAttribute.

56. Code snippets in visual studio, dictionary c#.
57. dictionary in c# continued.
58. List collection, generic list class and ranges, Sort a list
59. Sort a list of complex types
60. Sort a list of complex types using Comparison delegate
61. methods of List collection class.
62. dictionary over list
63. Generic queue collection class
64. Generic stack collection class
65. Real time example of queue collection class
66. Real time example of stack collection class
67. Multithreading, Advantages and disadvantages of multithreading
68. ThreadStart delegate, ParameterizedThreadStart delegate
69. Passing data to the Thread function in a type safe manner
70. Retrieving data from Thread function using callback method
71. Significance of Thread Join and Thread IsAlive functions
72. Protecting shared resources from concurrent access in multithreading
73. Difference between Monitor and lock
74. Deadlock in a multithreaded program.
75. How to resolve a deadlock in a multithreaded program
76. Performance of a multithreaded program
77. Anonymous methods
78. Lambda expression, Func delegate