**C# Serialization & Deserialization with Example**

In C#, serialization is the process of converting object into byte stream so that it can be saved to memory, file or database. The reverse process of serialization is called deserialization.

Serialization is internally used in remote applications.

## C# SerializableAttribute

To serialize the object, you need to apply SerializableAttribute attribute to the type. If you don't apply SerializableAttribute attribute to the type, SerializationException exception is thrown at runtime.

## # Serialization example

Let's see the simple example of serialization in C# where we are serializing the object of Student class. Here, we are going to use **BinaryFormatter.Serialize(stream, reference)** method to serialize the object.

1. **using** System;
2. **using** System.IO;
3. **using** System.Runtime.Serialization.Formatters.Binary;
4. [Serializable]
5. **class** Student
6. {
7. **int** rollno;
8. **string** name;
9. **public** Student(**int** rollno, **string** name)
10. {
11. **this**.rollno = rollno;
12. **this**.name = name;
13. }
14. }
15. **public** **class** SerializeExample
16. {
17. **public** **static** **void** Main(**string**[] args)
18. {
19. FileStream stream = **new** FileStream("e:\\sss.txt", FileMode.OpenOrCreate);
20. BinaryFormatter formatter=**new** BinaryFormatter();
22. Student s = **new** Student(101, "sonoo");
23. formatter.Serialize(stream, s);
25. stream.Close();
26. }
27. }

# C# Deserialization

In C# programming, deserialization is the reverse process of serialization. It means you can read the object from byte stream. Here, we are going to use **BinaryFormatter.Deserialize(stream)** method to deserialize the stream.

### C# Deserialization Example

Let's see the simple example of deserialization in C#.

1. **using** System;
2. **using** System.IO;
3. **using** System.Runtime.Serialization.Formatters.Binary;
4. [Serializable]
5. **class** Student
6. {
7. **public** **int** rollno;
8. **public** **string** name;
9. **public** Student(**int** rollno, **string** name)
10. {
11. **this**.rollno = rollno;
12. **this**.name = name;
13. }
14. }
15. **public** **class** DeserializeExample
16. {
17. **public** **static** **void** Main(**string**[] args)
18. {
19. FileStream stream = **new** FileStream("e:\\sss.txt", FileMode.OpenOrCreate);
20. BinaryFormatter formatter=**new** BinaryFormatter();
22. Student s=(Student)formatter.Deserialize(stream);
23. Console.WriteLine("Rollno: " + s.rollno);
24. Console.WriteLine("Name: " + s.name);
26. stream.Close();
27. }
28. }