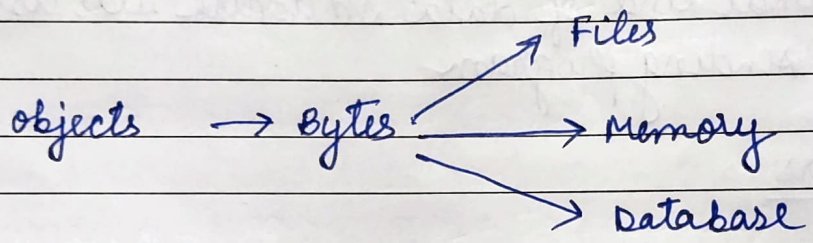
Serialization

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.



Serialization can be of the following types

- Binary Serialization
- SOAP Serialization
- XML Serialization
- JSON Serialization
- custom Serialization

why Serialization is needed?

→ It is a useful technique for storing objects as files, sending data over the network, and communicating with databases. It can also be used to simplify communication between different systems that use different formats for their data structure.

→ For example when you send an object over the network using serialization, the receiving program can deserialize as required.

This makes it possible for a program written in C# to communicate with another program written in Java or Python because they're both able to read whatever format they receive from each other - they don't need to know what kind of data structure was used by the sending program

For matters

They are responsible for converting objects into a stream of bytes and vice versa.

Two main formatters:

① Binary Formatter

→ Serializes objects into a binary format, which is efficient but not human readable. It preserves the object graph, including references between objects.

→ It is commonly used for local storage or network communication within a .NET environment.

- SOAP Formatter

→ Serializes objects into XML based SOAP (Simple Object Access Protocol) format. SOAP is a platform independent and can be used for interperability between different systems.

→ It's less efficient compared to binary serialization

The Data contract serializer

→ Introduced in .NET Framework 3.0, the data contract serializer is part of the windows communication Foundation (WCF). It serializes objects into XML or JSON formats using data contracts which defines the structure and behaviour of the serialized data.

→ It is particularly useful for web services and interperable communication between different platforms.

XML Serialization

It is used to convert objects into XML formats. It provides control over how objects are serialized using attributes such as XML Elements, XML Attribute etc. XML serialization is suitable when the serialized data needs to be human readable or when integrating with systems that require XML data interchange.