**What is .NET framework?**

The .NET framework is a software development framework from Microsoft. It provides a controlled programming environment where software can be developed, installed and executed on Windows-based operating systems. Software which are developed using .NET require .NET Framework to be installed in your system to be able to run. Once you install .NET Framework, it creates the required software environment so that it can provide the appropriate runtime requirements to the software.

The main two components of .Net Framework are Common Language Runtime and .Net Framework Class Library. The Common Language Runtime (CLR) is the runtime environment of the .Net Framework, that executes and manages all running code like a Virtual Machine. The .Net Framework Class Library (FCL) is a huge collection of language-independent and type-safe reusable classes.

**What is MSIL ?**

MSIL stands for Microsoft Intermediate Language. We can call it as Intermediate Language (IL) or Common Intermediate Language (CIL). During the compile time, the compiler convert the source code into Microsoft Intermediate Language (MSIL)

**What is GAC?**

GAC stands for Global Assembly Cache. It is an area of memory reserved to store the assemblies (compiled set of instructions) of all .NET applications that are running on a certain machine. It shares assemblies among multiple .NET applications. The assemblies must have a strong name and must be publicly shared to be installed in the GAC. It stores assemblies specifically designated to be shared by several applications on the computer.

**DLL:**

Stands for "Dynamic Link Library." A DLL (.dll) file contains a library of functions and other information that can be accessed by a Windows program. When a program is launched, links to the necessary .dll files are created. If a static link is created, the .dll files will be in use as long as the program is active. If a dynamic link is created, the .dll files will only be used when needed. Dynamic links help programs use resources, such as memory and hard drive space, more efficiently.

**DLL vs EXE:**

1. EXE is an extension used for executable files while DLL is the extension for a dynamic link library.

2. An EXE file can be run independently while a DLL is used by other applications.

3. A DLL file can be reused by other applications while an EXE cannot.

4. Exe is for single use whereas you can use DLL for multiple use.

5. You can create an objects of DLL but not of the EXE.

**CLR & JIT :**

The Common Language Runtime (CLR) is an execution environment . It works as a layer between Operating Systems and the applications written in .Net languages that conforms to the Common Language Specification. The main function of Common Language Runtime (CLR) is to convert the Managed Code into native code and then execute the Program. The Managed Code compiled only when it needed, that is it converts the appropriate instructions when each function is called.

JIT converts the MSIL code to native code which is CPU-specific code that runs on the same computer architecture as the JIT compiler and stores the resulting native code in memory so that it is accessible for subsequent calls in the context of that process. In .NET, Common Language Runtime (CLR) provides various JIT compilers, each works on a different CPU architecture depending on Operating System and makes possible to run MSIL (which is compiled from different .NET languages) executed on different Operating Systems without rewrite the source code.