**Q-1: What is the .NET framework?**

**Ans:** The .NET framework supports an object-oriented approach that is used for building applications on windows. It supports various languages like C#, VB, Cobol, Perl, .NET, etc. It has a wide variety of tools and functionalities like class, library and APIs that are used to build, deploy and run web services and different applications.

**Q-2: What are the different components of .NET?**

**Ans:** Following are the components of .NET

* Common Language run-time
* Application Domain
* Common Type System
* .NET Class Library
* .NET Framework
* Profiling

**Q-3: What is CLR?**

**Ans:** CLR stands for common language run-time, it is an important component of the .NET framework. We can use CLR as a building block of various applications and provides a secure execution environment for applications.

Whenever an application written in C# is compiled, the code is converted into an intermediate language. After this, the code is targeted to CLR which then performs several operations like memory management, security checks, loading assemblies, and thread management.

**Q-6: What do you know about JIT?**

JIT is a compiler which stands for Just In Time. It is used to convert the intermediate code into the native language. During the execution, the intermediate code is converted into the native language.

**Q-9: What is the difference between managed and unmanaged code?**

|  |  |
| --- | --- |
| **Managed code** | **Unmanaged code** |
| Managed code is managed by **CLR** | Any code that is not managed by **CLR** |
| .NET framework is necessary to execute managed code | Independent of .NET framework |
| **CLR**manages memory management through garbage collection | Own runtime environment for compilation and execution |

**Q-10: Explain the difference between a class and an object?**

|  |  |
| --- | --- |
| **Class** | **Object** |
| Class is the definition of an object | An object is an instance of a class. |
| It is a template of the object | A class does not become an object unless instantiated |
| It describes all the methods, properties, etc | An object is used to access all those properties from the class. |

**Q-11: What do you know about boxing and unboxing?**

|  |  |
| --- | --- |
| **Boxing** | **Unboxing** |
| Implicit | Explicit |
| Converting a value type to the type object | Extracting the value type from the object |
| eg : obj myObject = i; | eg : i = (int)myObject; |

**Q-14: What are the different versions of the .NET framework?**

|  |  |  |
| --- | --- | --- |
| **Version** | **.NET Framework** | **Visual Studio** |
| C# 1.0 | .NET Framework 1.0/1.1 | Visual Studio .NET 2002 |
| C# 2.0 | .NET Framework 2.0 | Visual Studio 2005 |
| C# 3.0 | .NET Framework 3.0/3.5 | Visual Studio 2008 |
| C# 4.0 | .NET Framework 4.0 | Visual Studio 2010 |
| C# 5.0 | .NET Framework 4.5 | Visual Studio 2012/2013 |
| C# 6.0 | .NET Framework 4.6 | Visual Studio 2013/2015 |
| C# 7.0 | .NET CORE | Visual Studio 2017 |

**Q-15: What is the difference between namespace and assembly?**

An assembly is a physical grouping of logical units whereas namespace groups classes. Also, a namespace can span multiple assemblies as well.

**Q-16: What is LINQ?**

It is an acronym for Language integrated query which was introduced with visual studio 2008. LINQ is a set of features that extend query capabilities to the .NET framework language syntax that allows data manipulation irrespective of the data source. LINQ bridges the gap between the world of objects and the world of data.

**Q-5: What are MDI and SDI?**

* MDI( Multiple Document Interface): An MDI lets you open multiple windows, it will have one parent window and as many child windows. The components are shared from the parent window like menubar, toolbar, etc.
* SDI( Single Document Interface): It opens each document in a separate window. Each window has its own components like menubar, toolbar, etc. Therefore it is not constrained to the parent window.

**Q-6: What is the difference between custom and user control?**

|  |  |
| --- | --- |
| **Custom Control** | **User Control** |
| Derives from control | Derives from UserControl |
| Dynamic Layout | Static Layout |
| Defines a single control | Defines a set of con |
| It has full toolbox support | Cannot be added to the toolbox |
| Loosely coupled control | Tightly coupled control |

**Q-7: What is a garbage collector?**

Garbage collector feature in .NET frees the unused code objects in the memory. The memory head is divided into 3 generations:

* Generation 0: It stores short-lived objects.
* Generation 1: This is for medium-lived objects.
* Generation 2: It stores long-lived objects.

Collection of garbage refers to the collection of objects stored in the generations.

**Q-8: What is caching?**

Caching simply means storing the data temporarily in the memory so that the data can be accessed from the memory instead of searching for it in the original location. It increases the efficiency of the application and also increases its speed.

Following are the types of caching:

* Page caching
* Data caching
* Fragment caching

**Q-9: Explain MVC.**

MVC stands for model view controller which is an architecture to build .NET applications.

**Model:**They are the logical part of any application that handles the object storage and retrieval from the databases for an application.

**View:**View handles the UI part of an application. They get the information from the models for their display.

**Controller:**They handle the user interactions, figure out the responses for the user input and also render the view that is required for the user interaction.

**Difference between interface and abstract class in .NET?**

|  |  |
| --- | --- |
| **Interface** | **Abstract Class** |
| An interface merely declares a contract or behavior that implementing classes should have. | An abstract class provides a partial implementation for a functionality that must be implemented by the inheriting entities. |
| An interface may declare only properties, methods and events with no access modifier. | An abstract class declares fields too. |

Neither interface nor an abstract class can be instantiated.

**Q-15: What is the difference between a stack and a heap?**

|  |  |
| --- | --- |
| **Stack** | **Heap** |
| Stored value type | Stored reference type |
| A stack is responsible for keeping track of each executing thread and its location. | The heap is responsible for keeping track of the more precise objects or data. |

**Q-16: What are the different validators in ASP.NET?**

* **Client-side validation –**When the validation takes place on the client-side browser, it is called client-side validation. Usually, JavaScript is used for client-side validation.
* **Server-side validation –**When the validation takes place on the server then it is called server-side validation. Server-side validation is considered as a secure form of validation because even if the user bypasses the client-side validation we can still catch it in server-side validation.

**What are EXE and DLL?**

EXE and DLL are assembly executable modules.

**EXE:**It is an executable file that runs the application for which it is designed. When we build an application, an exe file is generated. Therefore the assemblies are loaded directly when we run an exe. But an exe file cannot be shared with other applications.

**DLL:** It stands for dynamic link library that consists of code that needs to be hidden. The code is encapsulated in this library, an application can have many DLLs and can also be shared with other applications.

**Q-2: What is the difference between function and stored procedure?**

|  |  |
| --- | --- |
| **Function** | **Stored Procedure** |
| Must return a single value | Always used to perform a specific task |
| It can only have the input parameter | It can have both input and output parameters |
| Exception handling is not possible using a try-catch block | Exception handling can be done using a try-catch block |
| A stored procedure cannot be called from a function | A function can be called from a procedure |

**Q-3: List the events in the page life cycle.**

Following are the events in the page life cycle:

* Page\_PreInit
* Page\_Init
* Page\_InitComplete
* Page\_PreLoad
* Page\_Load
* Page\_LoadComplete
* Page\_PreRender
* Render

**Q-11: List all the templates of the Repeater control.**

* ItemTemplate
* AlternatingItemTemplate
* SeparatorTemplate
* HeaderTemplate
* FooterTemplate

**Q-12: What is the appSettings section in the web.config file?**

If we want to set the user-defined values for the whole applications, we can use the appSettings block in the web.config file. For example the code below uses the ConnectionString throughout the project for the database connection:

|  |  |
| --- | --- |
|  |  |

**Q-13: What is MIME?**

MIME stands for multipurpose internet mail extensions, it is the extension of the e-mail protocol which lets users use the protocol to exchange files over the internet.

**Q-15: What are the different types of cookies in ASP.NET?**

* **Session Cookie:**It resides on the client machine for a single session until the user logs out.
* **Persistent Cookie:**Resides on the user machine for a period specified for its expiry. It may be an hour, a month or never.

**Q-16: What is the difference between ExecuteScalar and ExecuteNonQuery?**

|  |  |
| --- | --- |
| **ExecuteScalar** | **ExecuteNonQuery** |
| Returns the output value | Does not return any value |
| Used for fetching a single value | Used to execute insert and update statements |
| Does not return the number of affected rows | Returns the number of affected rows |

**Q1. What is .NET?**

**Ans.**[.Net](https://www.naukri.com/learning/what-is-dotnet-st619-tg1412) is a software framework of Microsoft for developing applications on Windows. It is similar to other software development frameworks like Java Platform, Enterprise Edition (J2EE), and comprises ASP .Net, languages such as C#, VB .Net, COBOL, Perl, etc.

**Q2. What is ASP.NET?**

**Ans.**ASP.NET is another software framework to build web applications and is a part of the .NET Framework. ASP.NET helps to build the front end and runs on IIS(Internet Information Services) , a Web Server.

**Q7. What are cookies?**

**Ans.**Cookies are small bits of text information. Cookies are created by the server on the client for identifying users. It may contain the username and ID, interests, password remember option, or any other information. Cookies are domain-specific.

**Q8. Name some of the disadvantages of cookies.**

**Ans.**The main disadvantages of cookies include:

* Possible security risk, as they are stored in a clear text
* Not secure, as encryption & decryption is easy
* Cookies can be disabled on any user’s computer
* Can be edited or deleted
* Cookies can store limited data.

**Q9. How many languages are supported by .NET?**

**Ans.**.NET supports almost 60 languages, including:

* C#.NET
* VB.NET
* C++.NET
* J#.NET
* F#.NET
* JSCRIPT.NET
* WINDOWS POWERSHELL

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**Q10. Differentiate between ASP.NET and ASP.**

**Ans.**Yes, ASP.NET is different from ASP. The following are the main differences:

|  |  |
| --- | --- |
| **ASP.NET** | **Active Server Pages (ASP)** |
| Creates dynamic web applications | Creates web pages |
| Compiled | Interpreted |
| Uses ADO.NET | Uses ADO |
| Completely object-oriented | Partially object-oriented |

**Q14. Name the advantages of using Session State.**

**Ans.**The advantages of Session State include –

* Easy to implement
* Stores user states and data across the application
* Ensures data durability
* Works in multi-process configuration, thereby ensuring platform scalability
* Stores session object on the server. Keeping it secure and transparent for the user

**Q15. What is HTTPhandler?**

**Ans.**HttpHandler is a low-level request and response API in ASP.Net. It is used by the ASP.NET web application server to handle specific extension-based requests.

**Q17. How many types of indexes are there in .NET?**

**Ans.**There are two types of indexes in .Net:

* Clustered index
* Non-clustered index

**Q18. How many types of memories do exist in .Net?**

**Ans.**There are two types of memories in .Net

* Stack memory
* Heap Memory

**Q24. What are the different events in the Page Life Cycle?**

**Ans.**Different events in the Page Life Cycle include:

* Page\_PreInit
* Page\_Init
* Page\_InitComplete
* Page\_PreLoad
* Page\_Load
* Page\_LoadComplete
* Page\_PreRender
* Render