QUESTIONS OF C#

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**Q.2:**  Different between implicit and explicit type conversion?

Ans : Implicit type conversion − These conversions are performed by C# in a type-safe manner. For example, are conversions from smaller to larger integral types and conversions from derived classes to base classes.

Explicit type conversion − These conversions are done explicitly by users using the predefined functions. Explicit conversions require a cast operator.

**Q.2: Write any five type conversion method?**

Ans: ToChar

Converts a type to a single Unicode character, where possible.

ToDecimal

Converts a floating point or integer type to a decimal type.

ToDouble

Converts a type to a double type.

ToInt32

Converts a type to a 32-bit integer.

ToInt64

Converts a type to a 64-bit integer.

**Q.3 : Difference between inheritance and polymorphism?**

**Ans: Inheritance:**

Inheritance is one in which a new class is created that inherits the properties of the already existing class. It supports the concept of code reusability and reduces the length of the code in object-oriented programming.

**Polymorphism:**

Polymorphism is that in which we can perform a task in multiple forms or ways. It is applied to functions or methods. Polymorphism allows the object to decide which form of the function to implement at compile-time as well as run-time.

**Q.4: Difference between static and dynamic polymorphism?**

**Ans: In static polymorphism,** the response to a function is determined at the compile time.The mechanism of linking a function with an object during compile time is called early binding. It is also called static binding.

**In dynamic polymorphism,** it is decided at run-time.You can have multiple definitions for the same function name in the same scope.

**Q.5: Define regular expressions?**

**Ans:** A regular expression is a pattern that could be matched against an input text. The .Net framework provides a regular expression engine that allows such matching. A pattern consists of one or more character literals, operators, or constructs.

**Q.6: What is form Validation?**

**Ans:**  Form validation is a “technical process where a web-form checks if the information provided by a user is correct.” The form will either alert the user that they messed up and need to fix something to proceed, or the form will be validated and the user will be able to continue with their registration process.

**Q.7: Difference between public and protected access specifier?**

**Ans:**

**Private:** The access level of a private modifier is only within the class. It cannot be accessed from outside the class.

**Protected:** The access level of a protected modifier is within the package and outside the package through child class. If you do not make the child class, it cannot be accessed from outside the package.

**Q.8: Difference between message box and notifyicon in c#?**

**Ans: notifyIcon:**

The Windows Forms NotifyIcon component is typically used to display icons for processes that run in the background and do not show a user interface much of the time. An example would be a virus protection program that can be accessed by clicking an icon in the status notification area of the taskbar.

**MessageBox:**

MessageBox is a class in C# and Show is a method that displays a message in a small window in the center of the Form. MessageBox is used to provide confirmations of a task being done or to provide warnings before a task is done.

**Q.9: What is meant by start position in c#?**

Ans: StartLocation / position determines the specific point where the dialog will be displayed. Specifies the initial location of the message box. This value is taken under consideration only when StartPosition property is set to Manual.

**Q.10: Define Database structure?**

**Ans:** Two types of database structure Databases typically have one of two basic forms:

* **single-file or flat file database**
* **multi-file relational or structured database**

**A flat file database** stores data in a plain text file, with each line of text typically holding one record. Delimiters such as commas or tabs separate fields.

**A relational database** contains multiple tables of data with rows and columns that relate to each other through special key fields. These databases are more flexible than flat file structures, and provide functionality for reading, creating, updating, and deleting data.

**Q. 11: Define types of relationships in the database?**

**Ans:**  Four types of relationships exist in relational database design:

* **one to one** - where one table record relates to another record in another table
* **one to many** - where one table record relates to multiple records in another table
* **many to one** - where more than one table record relates to another table record
* **many to many** - where multiple records relate to more than one record in another table

**LONG QUESTIONS**

**Q.NO.1: Define Database and explain its characteristics?**

**Ans: Database** is a collection of related data and data is a collection of facts and figures that can be processed to produce information

**A database management system** stores data in such a way that it becomes easier to retrieve, manipulate, and produce information.

A modern DBMS has the following characteristics:

* Real-world entity − A modern DBMS is more realistic and uses real-world entities to design its architecture. It uses the behavior and attributes too.
* Relation-based tables − DBMS allows entities and relations among them to form tables. A user can understand the architecture of a database just by looking at the table names.
* Isolation of data and application − A database system is entirely different from its data. DBMS also stores metadata, which is data about data, to ease its own process.
* Less redundancy − DBMS follows the rules of normalization, which splits a relation when any of its attributes is having redundancy in values.
* Consistency − Consistency is a state where every relation in a database remains consistent. A DBMS can provide greater consistency as compared to earlier forms of data storing applications like file-processing systems.
* Query Language − DBMS is equipped with query language, which makes it more efficient to retrieve and manipulate data. A user can apply as many and as different filtering options as required to retrieve a set of data.

**Q.No.2: Define Database and explain users of DBMS?**

Ans:  **Database** is a collection of related data and data is a collection of facts and figures that can be processed to produce information

A typical DBMS has users with different rights and permissions who use it for different purposes. Some users retrieve data and some back it up. The users of a DBMS can be broadly categorized as follows :

**Administrators** − Administrators maintain the DBMS and are responsible for administering the database. Administrators also look after DBMS resources like system license, required tools, and other software and hardware related maintenance

**Designers** − Designers are the group of people who actually work on the designing part of the database. They keep a close watch on what data should be kept and in what format. They identify and design the whole set of entities, relations, constraints, and views.

**End Users** − End users are those who actually reap the benefits of having a DBMS. End users can range from simple viewers who pay attention to the logs or market rates to sophisticated users such as business analysts.

**Q.No.3: Explain Access specifier and its Types?**

Ans: Access Specifier/ Modifier The access modifier specifies the accessibility or scope of a field, method, constructor, or class. We can change the access level of fields, constructors, methods, and class by applying the access modifier on it.

There are four types of access modifiers:

**1. Private:** The access level of a private modifier is only within the class. It cannot be accessed from outside the class.

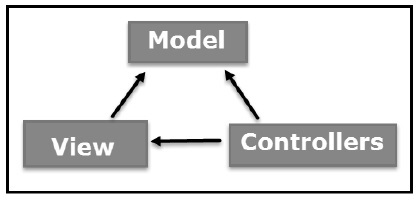
**2. Default:** The access level of a default modifier is only within the package. It cannot be accessed from outside the package. If you do not specify any access level, it will be the default.

**3. Protected:** The access level of a protected modifier is within the package and outside the package through child class. If you do not make the child class, it cannot be accessed from outside the package.

**4. Public:** The access level of a public modifier is everywhere. It can be accessed from within the class, outside the class, within the package and outside the package.

**Q.No.4: What is MVC and Explain its architecture in detail?**

Ans: The Model-View-Controller (MVC) is an architectural pattern that separates an application into three main logical components: the model, the view, and the controller. Each of these components are built to handle specific development aspects of an application.



### **Model**

The Model component corresponds to all the data-related logic that the user works with. This can represent either the data that is being transferred between the View and Controller components or any other business logic-related data.

### **View**

The View component is used for all the UI logic of the application. For example, the Customer view will include all the UI components such as text boxes, dropdowns, etc. that the final user interacts with.

### **Controller**

Controllers act as an interface between Model and View components to process all the business logic and incoming requests, manipulate data using the Model component and interact with the Views to render the final output.

## **ASP.NET MVC**

ASP.NET supports three major development models: Web Pages, Web Forms and MVC (Model View Controller). The ASP.NET MVC framework is lightweight.

### **ASP.NET MVC Features:**

* Ideal for developing complex but lightweight applications.
* Provides an extensible and pluggable framework.
* Utilizes the component-based design of the application by logically dividing it into Model, View, and Controller components.
* MVC structure enhances the test-driven development and testability of the application.
* Supports all the existing vast ASP.NET functionalities, such as Authorization and Authentication.
* This helps in building applications, which are lightweight and gives full control to the developers.

THE QUAID’S SAID THAT:

“ FAILURE IS UNKNOWN TO ME “

**Q.1 what do you know about bitwise operator in c#?**

**Ans :**

In c#, Bitwise Operators will work on bits, and these are useful to perform bit by bit operations such as Bitwise AND (&), Bitwise OR (|), Bitwise Exclusive OR (^), etc. on operands. ... It compares each bit of the first operand with the corresponding bit of its second operand.

**Q.2 : What is difference between member variables and member function in c#?**

Ans: Member Function:

functions which are declared either in the private section or public section are known as Member functions.

A class groups a set of values and a set of operations. The values and the operations of a class are called its *members*. *Member variables* implement the values and *member functions* implement the operations.

**Q .3 : what is Encapsulation and how could implement in the class in c#**

**Encapsulation** is defined as the wrapping up of data under a single unit. It is the mechanism that binds together code and the data it manipulates.

* Declaring all the variables in the class as private and using c# Properties in the class to set and get the values of variables.

**Q.4: What is difference between for loop and foreach loop in c#**

Ans:

The difference between for and foreach in C# is that for loop is used as a general purpose control structure while foreach loop is specifically used for arrays and collections.