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Question 1. Write a short note on the evolution of .Net Framework and C#(100 words)

1. Ans: The .NET Framework's journey began as a Windows-centric platform, limiting its reach. Recognizing the changing landscape of software development, Microsoft introduced .NET Core to enable cross-platform capabilities. This shift was pivotal for developers seeking flexibility beyond Windows environments.

Simultaneously, C#, the primary language for .NET, evolved to address contemporary challenges. The incorporation of async/await showcased a responsiveness-focused paradigm shift, crucial for efficient handling of asynchronous operations in modern applications.

Together, these advancements underscore a commitment to adaptability, performance, and embracing industry trends within the .NET ecosystem.

Question 2. Explain the following terms ;

Mono, Xamarin , COM , .Net Core,Unity C#,REST

Ans: (a).Mono: Mono is an open-source implementation of the .NET framework, allowing developers to build and run cross-platform applications.

          (b). Xamarin: Xamarin is a cross-platform app development framework that utilizes C# and the .NET framework. Acquired by Microsoft, Xamarin enables developers to create native mobile applications for iOS, Android, and Windows, sharing a significant portion of the codebase.

           (c). COM (Component Object Model): COM is a Microsoft technology for building software components in a modular and reusable manner. It allows components to be developed in different languages and accessed by applications, promoting interoperability.

           (d). .NET Core: .NET Core is an open-source, cross-platform framework that evolved from the .NET Framework. It provides a modular and lightweight platform for building applications that can run on Windows, Linux, and macOS.

           (e). Unity C#: Unity C# refers to the programming language C# used in the Unity game development engine. Unity allows developers to create 2D, 3D, augmented reality (AR), and virtual reality (VR) applications.

            (f). REST (Representational State Transfer): REST is an architectural style for designing networked applications. It relies on a stateless communication model, typically using HTTP, where resources are identified by URLs, and interactions occur through standard operations like GET, POST, PUT, and DELETE.

3. Critically,explain ANY three key functions of CLR(50 words)

Ans:( a). Memory Management: CLR employs a managed memory model where it automatically handles memory allocation and deallocation.

          (b). Exception Handling: This helps developers write code that gracefully handles errors and exceptions, improving the reliability and maintainability of software.

          (c). Security Management: CLR ensures that code operates within specified security boundaries, protecting the system from malicious activities.