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**Level**: HND1

**Course**: Com316

C# Assignment One

1. Write a short note on the evolution of .Net Framework and C# (100 words)
2. Explain the following terms; Mono, Xamarin, COM, .Net Core, Unity C#, REST
3. Critically explain any three key functions of CLR (50 words)

Solution:

1 It is an object-oriented programming language created by Microsoft that runs on the .NET Framework.

C# has roots from the C family, and the language is close to other popular languages like C++ and Java.

The first version was released in year 2002. The latest version, **C# 12**, was released in November 2023.

2 i) **Mono:** Mono is a free and open-source .NET Framework-compatible software framework.

ii) **Xamarin:** Xamarin is a developer's tool for cross-platform mobile application development.

iii) **COM:** The Component Object Model (COM) lets an object expose its functionality to other components and to host applications on Windows platforms.

iv) **.Net Core**: is a new version of .Net Framework, which is a free, open source, general- purpose development platform maintained by Microsoft.

v) **Unity C#:** Unity is a real-time 3D development platform for building 2D and 3D application, like games and simulations, using .NET and the C# programming language.

vi) **REST:** Representational State Transfer (REST) allows application to interact with each other and exchange data.

3 i) **Exception handling**: the process of responding to unwanted or unexpected events when a computer program runs. Exception handling deals with these events to avoid the program or system crashing, and without this process, exceptions would disrupt the normal operation of a program.

ii) **Memory Management**: Memory management is the process of controlling and coordinating a computer's main memory. It ensures that blocks of memory space are properly managed and allocated so the operating system (OS), applications and other running processes have the memory they need to carry out their operations.

iii) **Garbage collection:** ensures that a program does not exceed its memory quota or reach a point that it can no longer function. It also frees up developers from having to manually manage a program's memory, which, in turn, reduces the potential for memory-related bugs.