UNIT 1
Managed vs Unmanaged Code & Garbage Collection

Presented By : Aditya Joshi
Asst. Professor
Department of Computer Application
Graphic Era Deemed to be University

Dated : 23-01-2021

Difference Managed Code Vs Unmanaged code

Managed Code	Unmanaged Code
Code Executes with the help of compiler instead of OS	Code executes directly by the OS
Runtime will provide services like Garbage collector, Type Checking, Exception Handling.	Does not provide these services Garbage collector, Type Checking, Exception Handling and taken care by programmer explicitly.
The code is compiled by the language specific compiler to Intermediate Language.	Code directly compiled into Native code.

Garbage Collection

- It is a Part of CLR to allocate and deallocate memory at runtime
- Life of developer becomes easier for writing code and all allocation and deallocation (release) of memory takes place at background.

Allocating memory and Deallocating Memory

When we develop any application(window or web) memory is the most important concern, the purpose of GC is AMM which is automatic memory management.

to clear the memory we have two ways

1. manually(leads to error)
2. automatic(provided by the GC)

Allocating Memory

- How GC manages to store the data in memory
- It reserves a adjacent region of address space for the process, called managed heap
- It keeps the pointer to the next address where the next object in the heap will be allocated.
- Reference types are allocated in managed heaps
- Allocating and accessing memory from the managed heap is faster

Deallocating Memory

- When GC performs a collection, it releases the memory for objects that are no longer being used.
- Roots of each application either refers to an object or the managed heap is set to null.
- GC can access the list of active roots that the JIT compiler and the runtime maintain.
- For unmanaged resource, we explicitly have to call the Dispose method.