**Day2 C# : Task 2**

**Design a C# program with a method that attempts to access a local variable outside its scope, a constant, and a static variable. Document the results in comments within the code explaining why each access either succeeds or fails.**

using System;

namespace Task\_2

{

class Program2

{

const int constantValue = 25;

static int staticValue = 50;

static void Main(string[] args)

{

int localVar = 75;

Console.WriteLine("Accessing constant: " + constantValue);

Console.WriteLine("Accessing static variable: " + staticValue);

TryAccessVariables();

}

static void TryAccessVariables()

{

Console.WriteLine("Accessing constant inside method: " + constantValue);

Console.WriteLine("Accessing static variable inside method: " + staticValue);

}

}

}

**Accessing Constant (constantValue):**

**Accessing constant outside of its declaring class (Program2):** Succeeds.

**Explanation:** Constants in C# are accessible from anywhere within the same assembly (namespace) where they are defined. Since both the constant and the Main method are within the Program2 class and namespace, the access succeeds.

**Accessing constant inside a method (TryAccessVariables):** Succeeds.

**Explanation:** Constants are accessible within the same assembly and the same class where they are defined. Since both the constant and the method TryAccessVariables are within the Program2 class, the access succeeds.

**Accessing Static Variable (staticValue):**

**Accessing static variable outside of its declaring class (Program2):** Succeeds.

**Explanation:** Static variables, like constants, are accessible within the same assembly (namespace) where they are defined. Since both the static variable and the Main method are within the Program2 class and namespace, the access succeeds.

**Accessing static variable inside a method (TryAccessVariables):** Succeeds.

**Explanation:** Static variables are accessible within the same assembly and the same class where they are defined. Since both the static variable and the method TryAccessVariables are within the Program2 class, the access succeeds.

**Accessing Local Variable (localVar):**

**Accessing local variable outside of its scope (Main method):** Fails.

**Explanation:** Local variables are only accessible within the block of code where they are declared. Once the execution flow exits the block (in this case, the Main method), the local variable localVar is out of scope and cannot be accessed anymore.

**Attempting to access local variable inside another method (TryAccessVariables):** Fails.

**Explanation:** Local variables are confined to the block of code in which they are declared. They cannot be accessed outside of their scope. Since localVar is declared within the Main method, it cannot be accessed from another method like TryAccessVariables.