**Exercise 1: Implementing the Singleton Pattern**

**Sol:**

File Name:logger.cs

Code:

using System;

public sealed class Logger

{

    private static Logger instance = null;

    private static readonly object padlock = new object();

    private Logger()

    {

        Console.WriteLine("Logger initialized.");

    }

    public static Logger Instance

    {

        get

        {

*lock* (padlock)

            {

*if* (instance == null)

                {

                    instance = new Logger();

                }

*return* instance;

            }

        }

    }

    public void Log(string message)

    {

        Console.WriteLine($"[LOG]: {message}");

    }

}

Another file: **Program.cs**

using System;

class Program

{

    static void Main(string[] args)

    {

        Logger logger1 = Logger.Instance;

        logger1.Log("Ayushman");

        Logger logger2 = Logger.Instance;

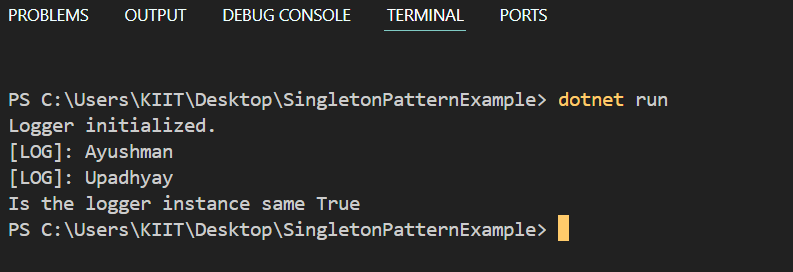
        logger2.Log("Upadhyay");

        Console.WriteLine("Is the logger instance same " + (logger1 == logger2));

    }

}

**Output:**

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