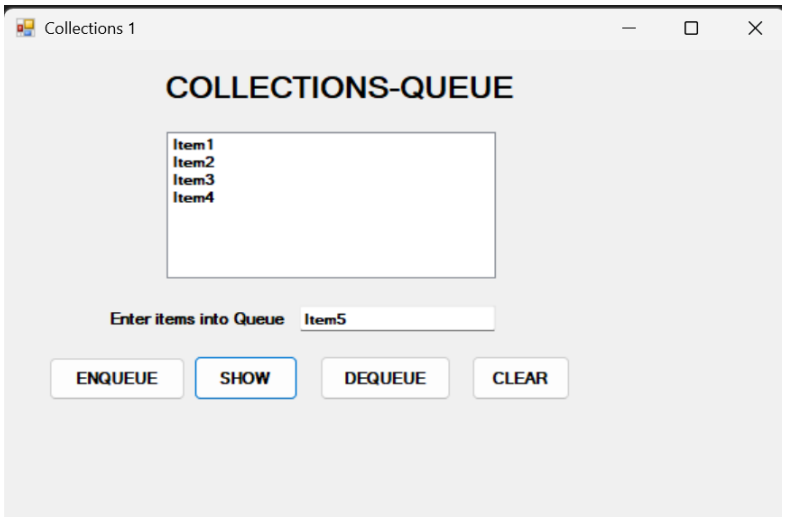
Assignment - COLLECTIONS .NET C#

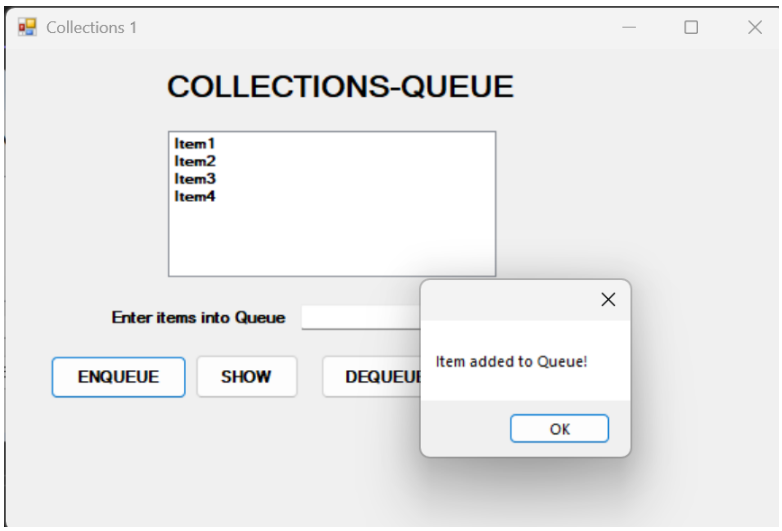
Question 1: QUEUE

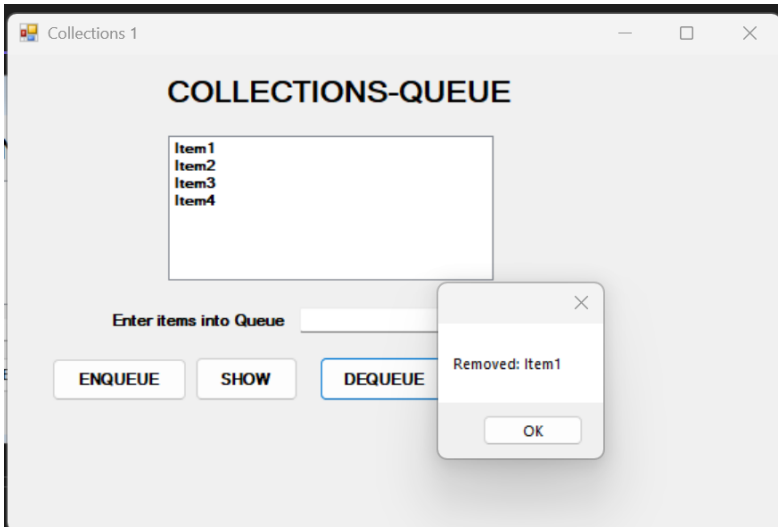
Goal

Create a simple Windows Form that:

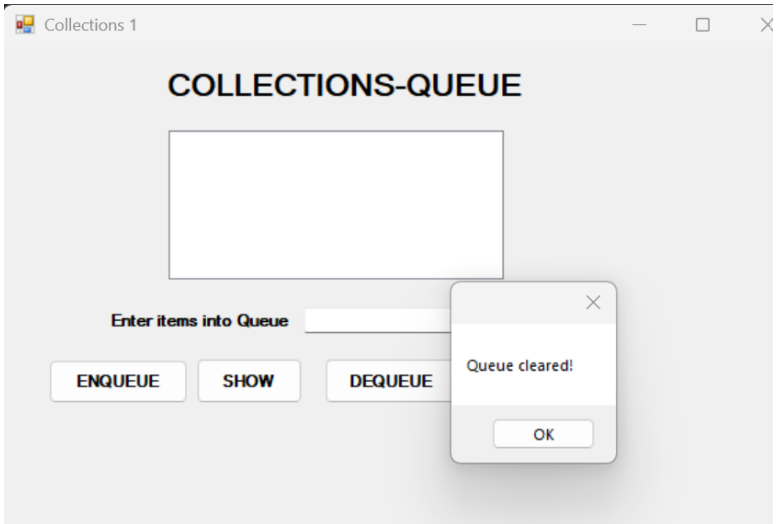
- Lets you enter text into a queue (FIFO)
- Displays all queued items in a ListBox
- Supports **Enqueue**, **Dequeue**, **Show**, and **Clear**






Collections 1
COLLECTIONS-QUEUE
Item1
Item2
Item3
Item4
Enter items into Queue
ENQUEUE
SHOW
DEQUEUE
Removed: Item1
OK


Collections 1
COLLECTIONS-QUEUE
Item2
Item3
Item4
Item5
Enter items into Queue
ENQUEUE
SHOW
DEQUEUE
CLEAR

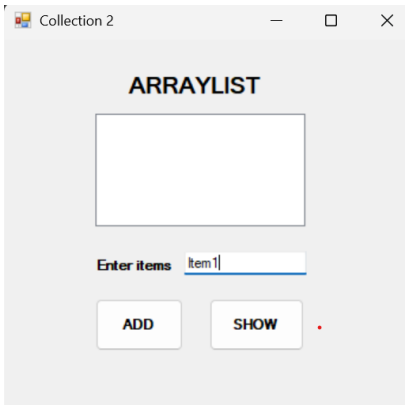

Collections 1
COLLECTIONS-QUEUE
Enter items into Queue
ENQUEUE
SHOW
DEQUEUE
Queue cleared!
OK

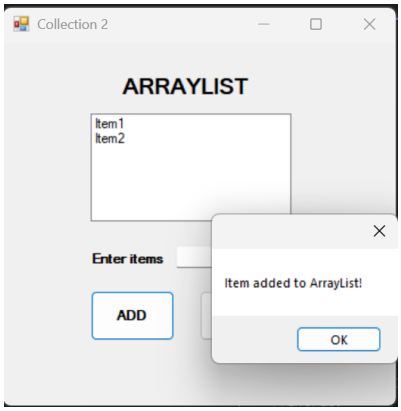
QUESTION 2 : ARRAYLIST

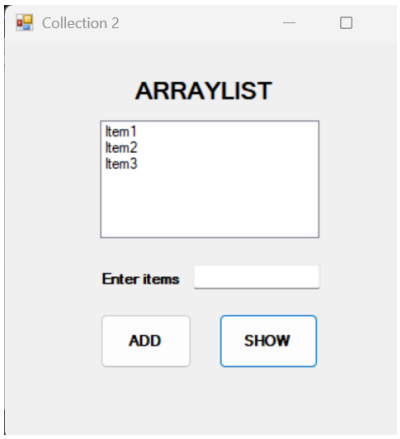
Goal

Create a Windows Form application using **ArrayList** that:

- Accepts input through a textbox
- Stores the input in an ArrayList
- Displays all items in a ListBox when clicking **SHOW**
- Allows adding new items with the **ADD** button







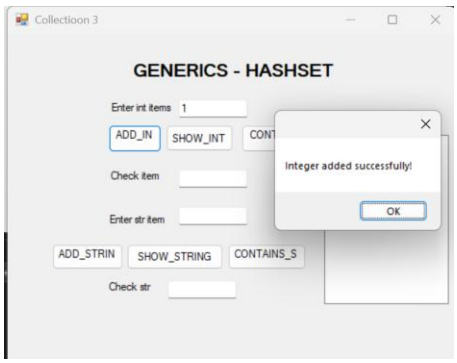
QUESTION 3 : GENERICS-HASHSET

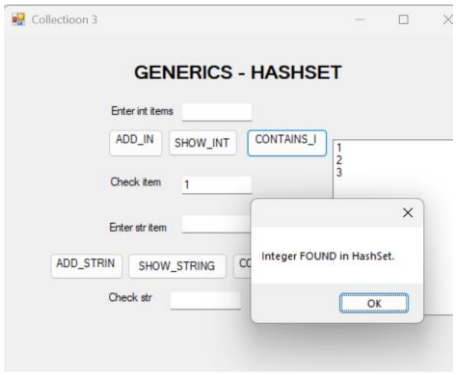
Create a Windows Forms app that demonstrates **generic HashSet<T>** in C# for both:

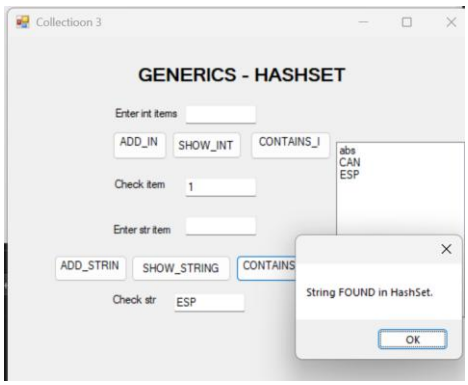
- Integers (HashSet<int>)
- Strings (HashSet<string>)

You'll be able to:

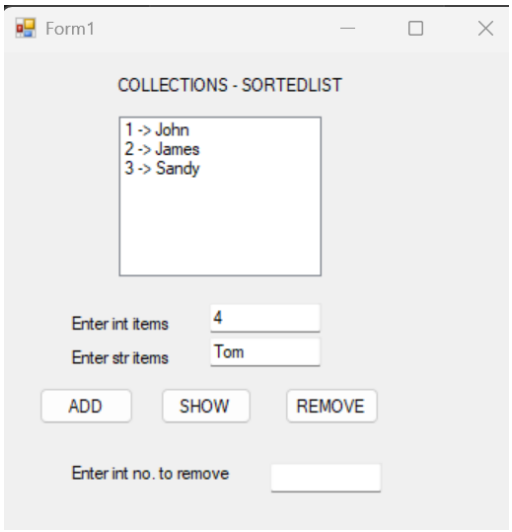
- Add items to each HashSet
- Show all items in a ListBox
- Check if a specific item exists in the set

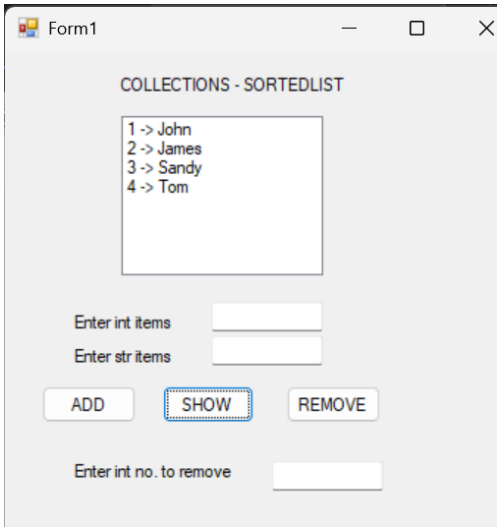


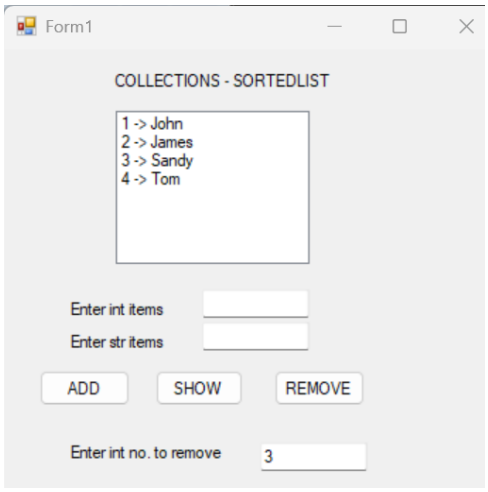


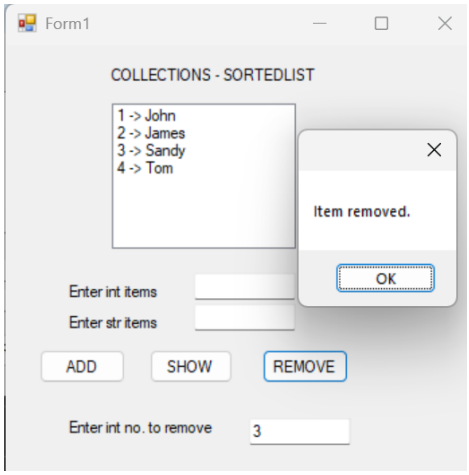


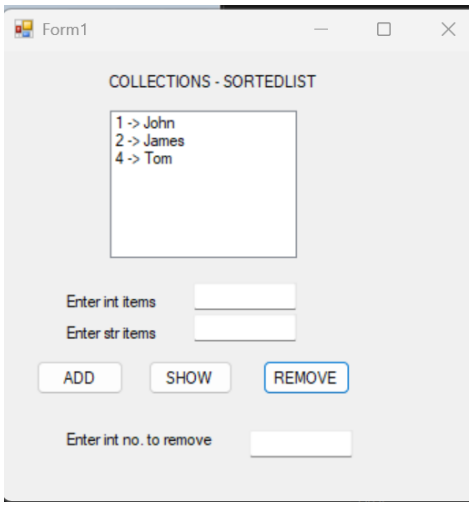
QUESTION 4 : SORTEDLIST








Form1
COLLECTIONS - SORTEDLIST
1 -> John
2 -> James
3 -> Sandy
4 -> Tom
Item removed.
OK
Enter int items
Enter str items
ADD
SHOW
REMOVE
Enter int no. to remove
3

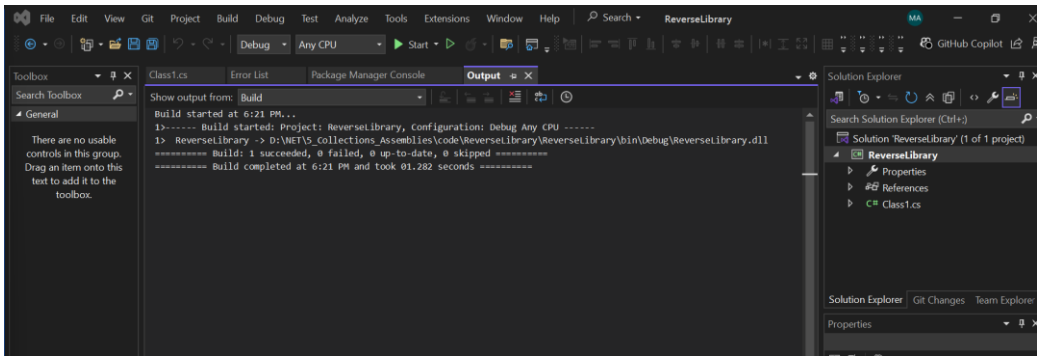

Form1
COLLECTIONS - SORTEDLIST
1 -> John
2 -> James
4 -> Tom
Enter int items
Enter str items
ADD
SHOW
REMOVE
Enter int no. to remove

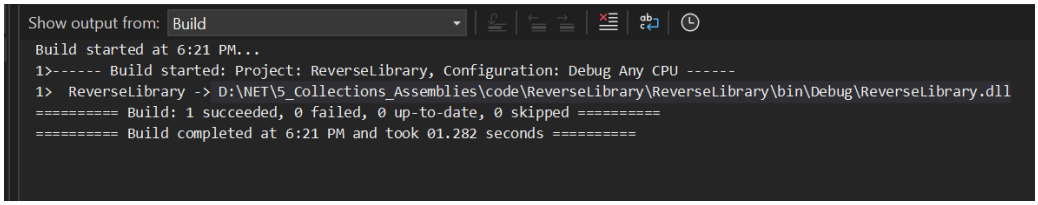
QUESTION 5 : REVERSE

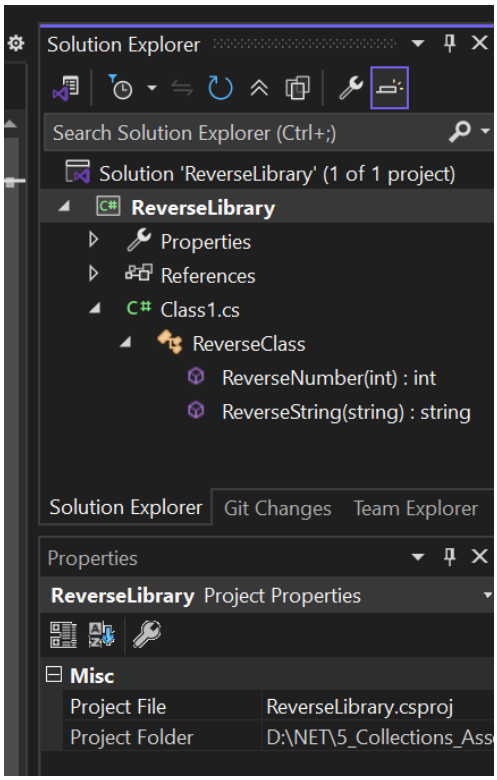
Goal

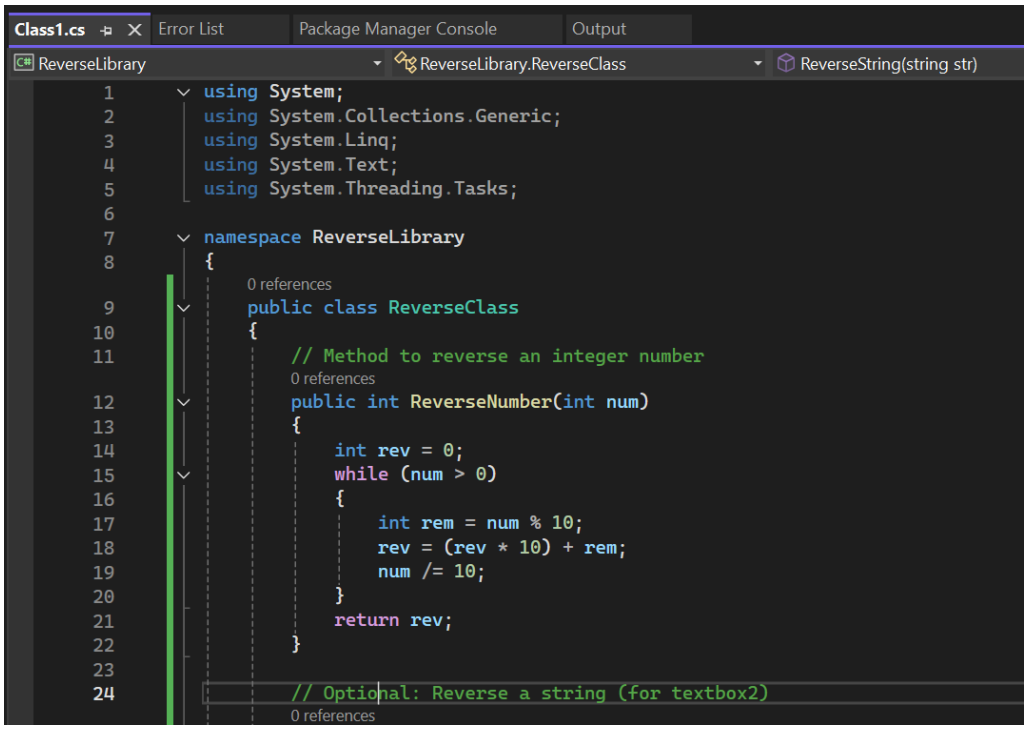
Create a Windows Forms App that:

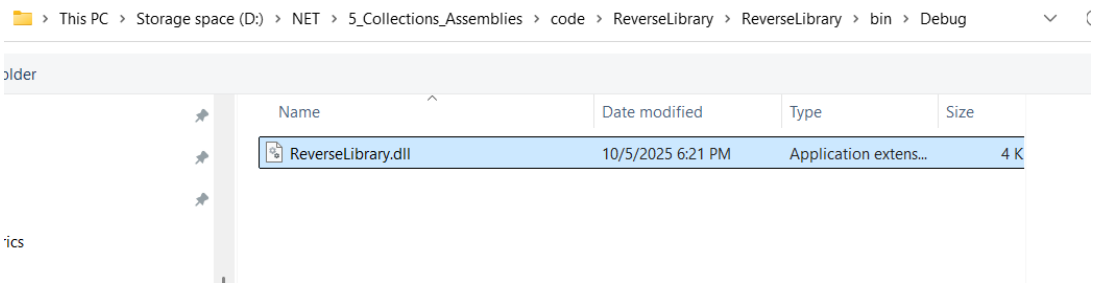
1. Accepts a **number** in textbox1
2. Accepts a **string** in textbox2 (for later, optional use)
3. Uses an **external assembly (DLL)** to reverse the number
4. Displays the reversed number in a **label or message box**

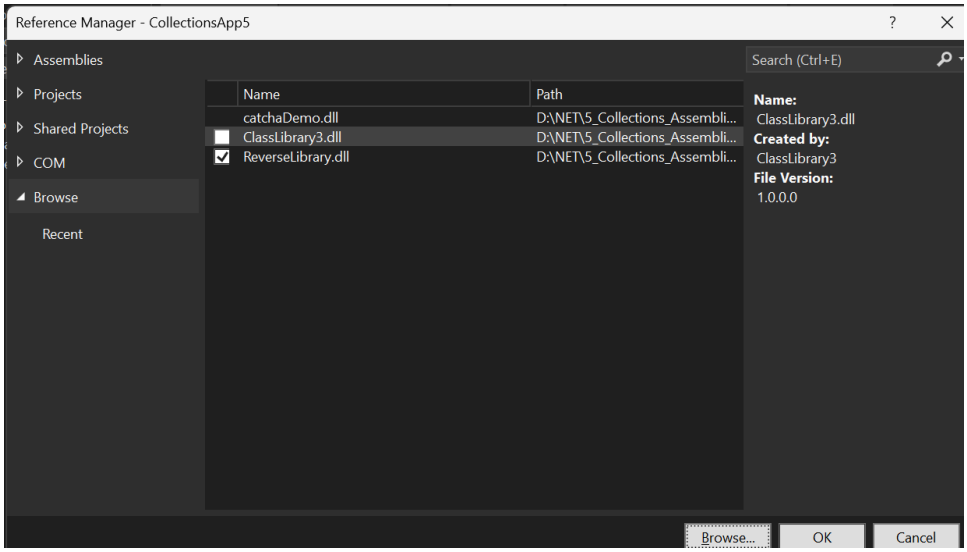


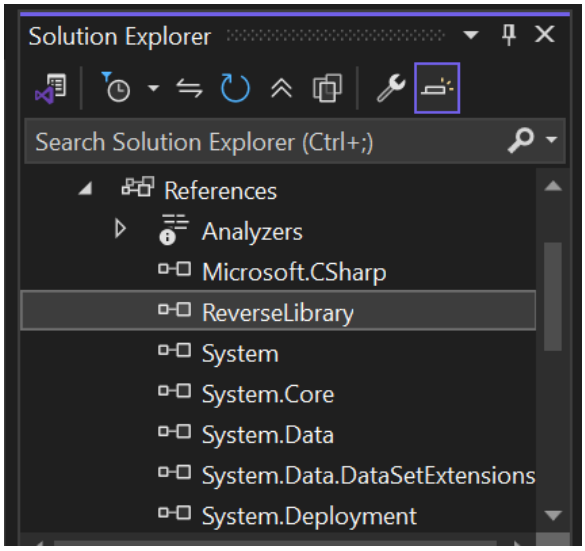




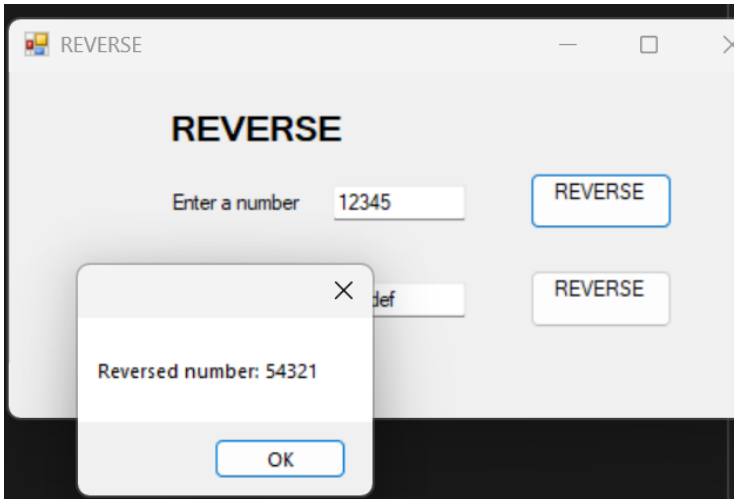

Class1.cs
Error List
Package Manager Console
Output
ReverseLibrary
ReverseLibrary.ReverseClass
ReverseString(string str)
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace ReverseLibrary
{
0 references
public class ReverseClass
{
// Method to reverse an integer number
0 references
public int ReverseNumber(int num)
{
int rev = 0;
while (num > 0)
{
int rem = num % 10;
rev = (rev * 10) + rem;
num /= 10;
}
return rev;
}
// Optional: Reverse a string (for textbox2)
0 references

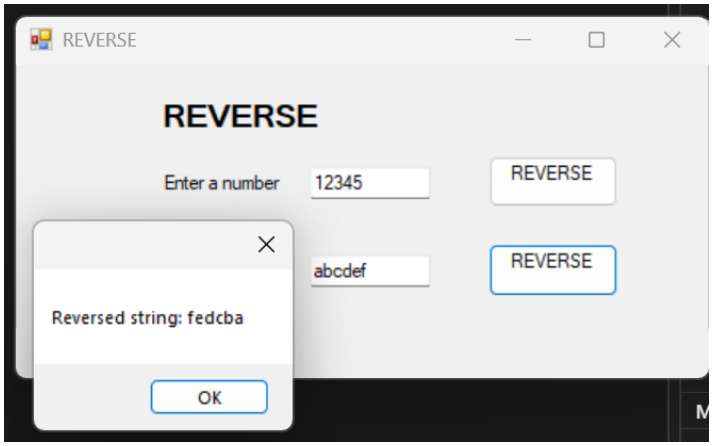

This PC
Storage space (D:)
NET
5_Collections_Assemblies
code
ReverseLibrary
ReverseLibrary
bin
Debug
Name
Date modified
Type
Size
ReverseLibrary.dll
10/5/2025 6:21 PM
Application extens...
4 K


Reference Manager - CollectionsApp5
Assemblies
Projects
Shared Projects
COM
Browse
Recent
Search (Ctrl+E)
Name
Path
catchaDemo.dll
D:\NET\5_Collections_Assembli...
ClassLibrary3.dll
D:\NET\5_Collections_Assembli...
ReverseLibrary.dll
D:\NET\5_Collections_Assembli...
Name:
ClassLibrary3.dll
Created by:
ClassLibrary3
File Version:
1.0.0.0
Browse...
OK
Cancel



using ReverseLibrary; // Import your assembly




REVERSE
REVERSE
Enter a number
12345
REVERSE
abcdef
REVERSE
Reversed string: fedcba
OK