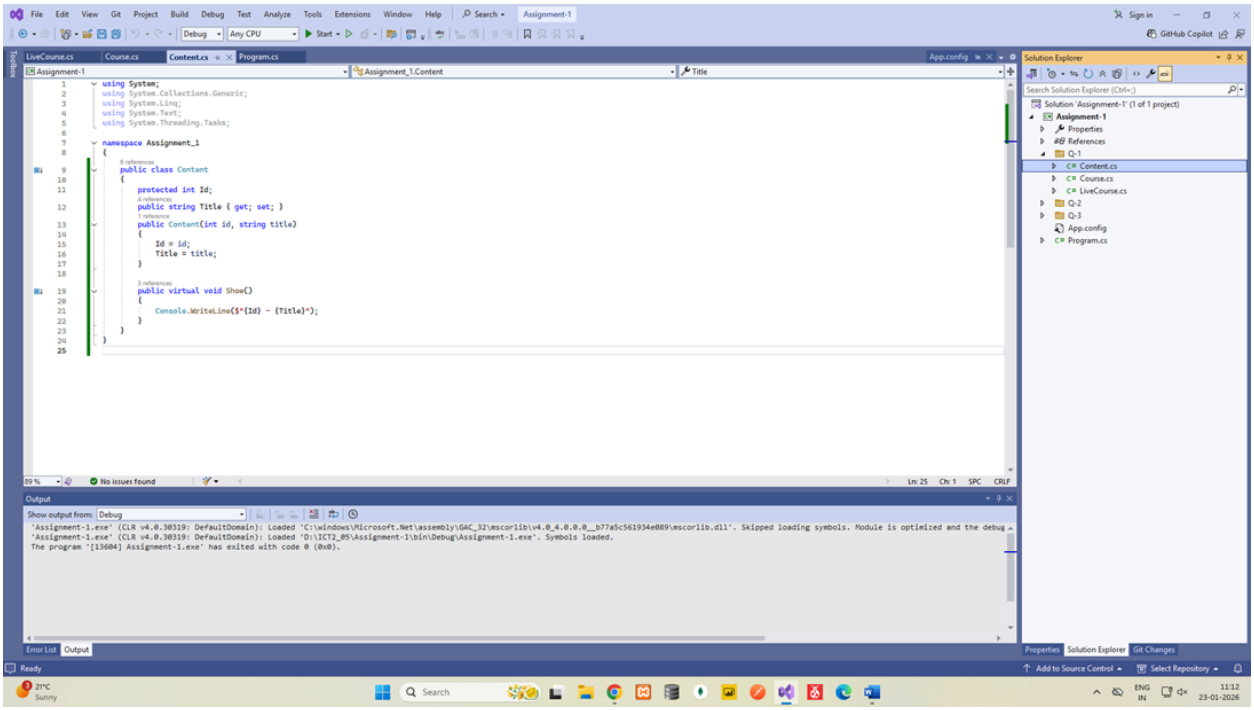
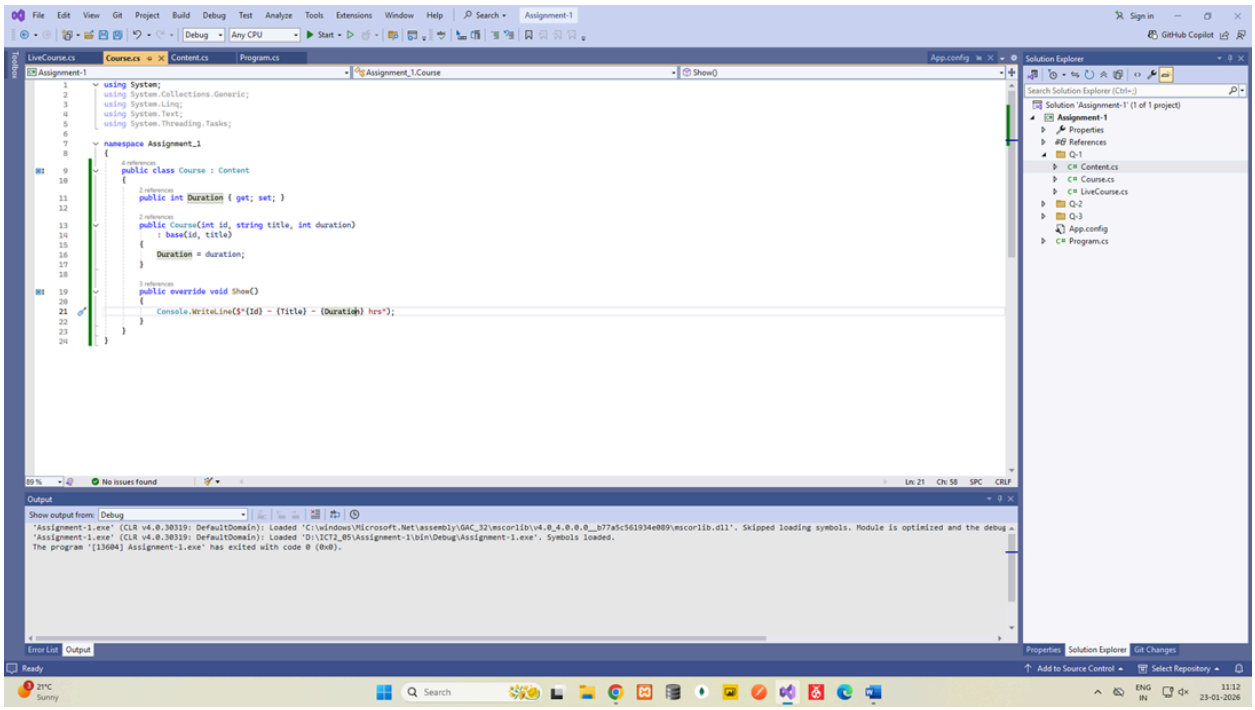
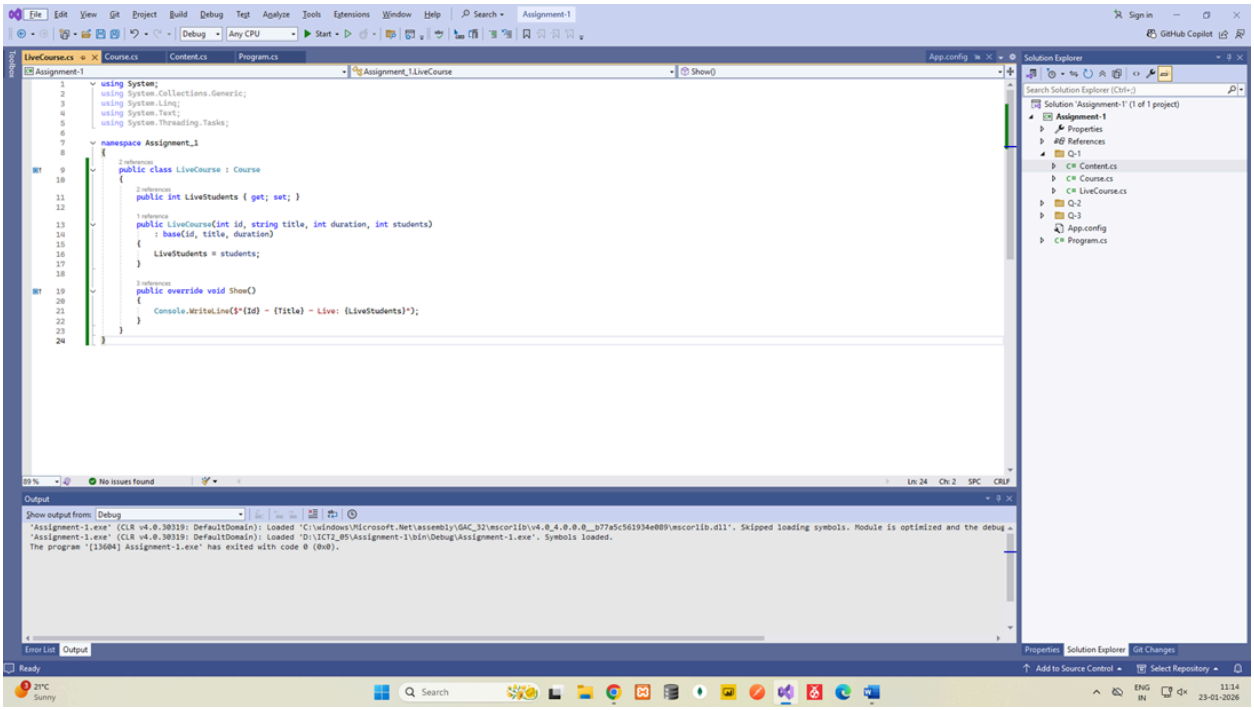
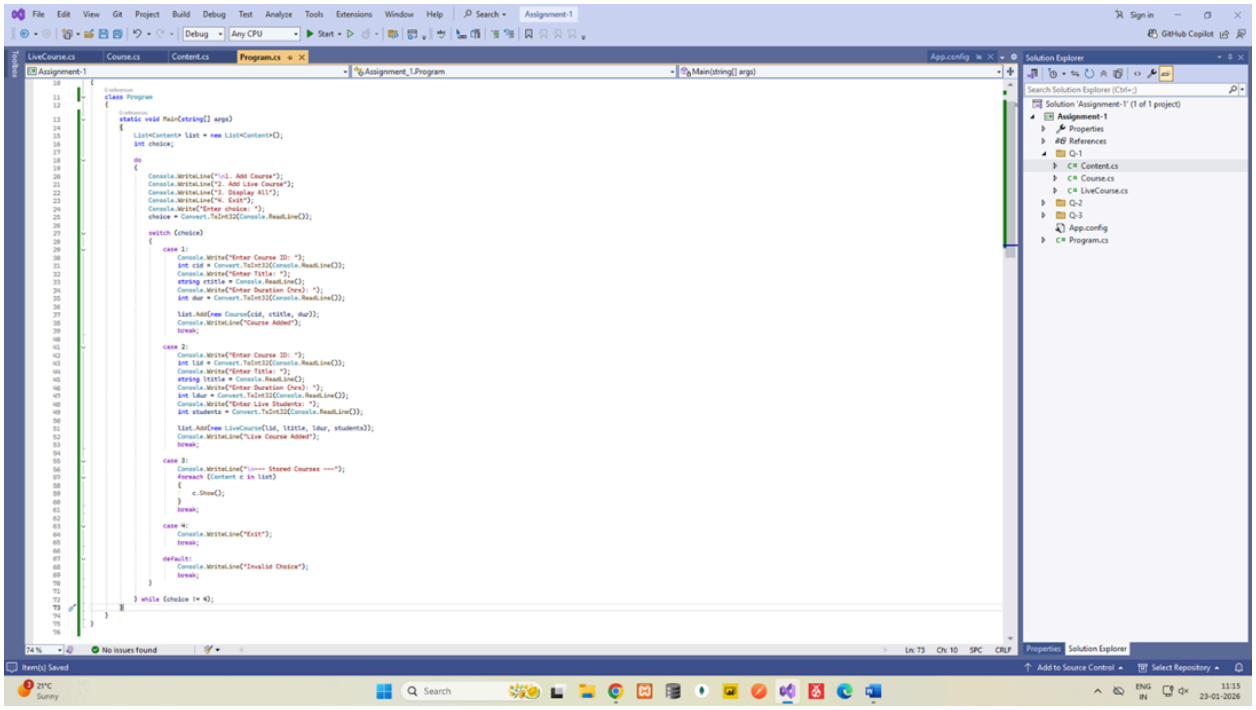
# Assignment – 1

1) Create a console application using C#.NET Core to demonstrate multi-level inheritance using implementation of access modifiers, properties, methods and constructors. Provide menu to the user to select type of data to store in a Generic List. Use dynamic polymorphism to create Generic List.




Course.cs
Assignment-1
Assignment_1.Course
Show()
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Assignment_1
{
4 references
public class Course : Content
{
2 references
public int Duration { get; set; }
2 references
public Course(int id, string title, int duration)
: base(id, title)
{
Duration = duration;
}
3 references
public override void Show()
{
Console.WriteLine($"{Id} - {Title} - {Duration} hrs");
}
}
}
No issues found
Ln: 21 Ch: 58 SPC CRLF
Output
Show output from: Debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0_4.0.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading symbols. Module is optimized and the debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'D:\ICT2_05\Assignment-1\bin\Debug\Assignment-1.exe'. Symbols loaded.
The program '[13604] Assignment-1.exe' has exited with code 0 (0x0).
Solution Explorer
Solution 'Assignment-1' (1 of 1 project)
Assignment-1
Properties
References
Q-1
Content.cs
Course.cs
LiveCourse.cs
Q-2
Q-3
App.config
Program.cs
Ready
Add to Source Control
Select Repository


LiveCourse.cs
Assignment-1
Assignment_1.LiveCourse
Show()
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Assignment_1
{
2 references
public class LiveCourse : Course
{
2 references
public int LiveStudents { get; set; }
1 reference
public LiveCourse(int id, string title, int duration, int students)
: base(id, title, duration)
{
LiveStudents = students;
}
3 references
public override void Show()
{
Console.WriteLine($"{Id} - {Title} - Live: {LiveStudents}");
}
}
}
No issues found
Ln: 24 Ch: 2 SPC CRLF
Output
Show output from: Debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0_4.0.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading symbols. Module is optimized and the debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'D:\ICT2_05\Assignment-1\bin\Debug\Assignment-1.exe'. Symbols loaded.
The program '[13604] Assignment-1.exe' has exited with code 0 (0x0).
Solution Explorer
Solution 'Assignment-1' (1 of 1 project)
Assignment-1
Properties
References
Q-1
Content.cs
Course.cs
LiveCourse.cs
Q-2
Q-3
App.config
Program.cs
Ready
Add to Source Control
Select Repository

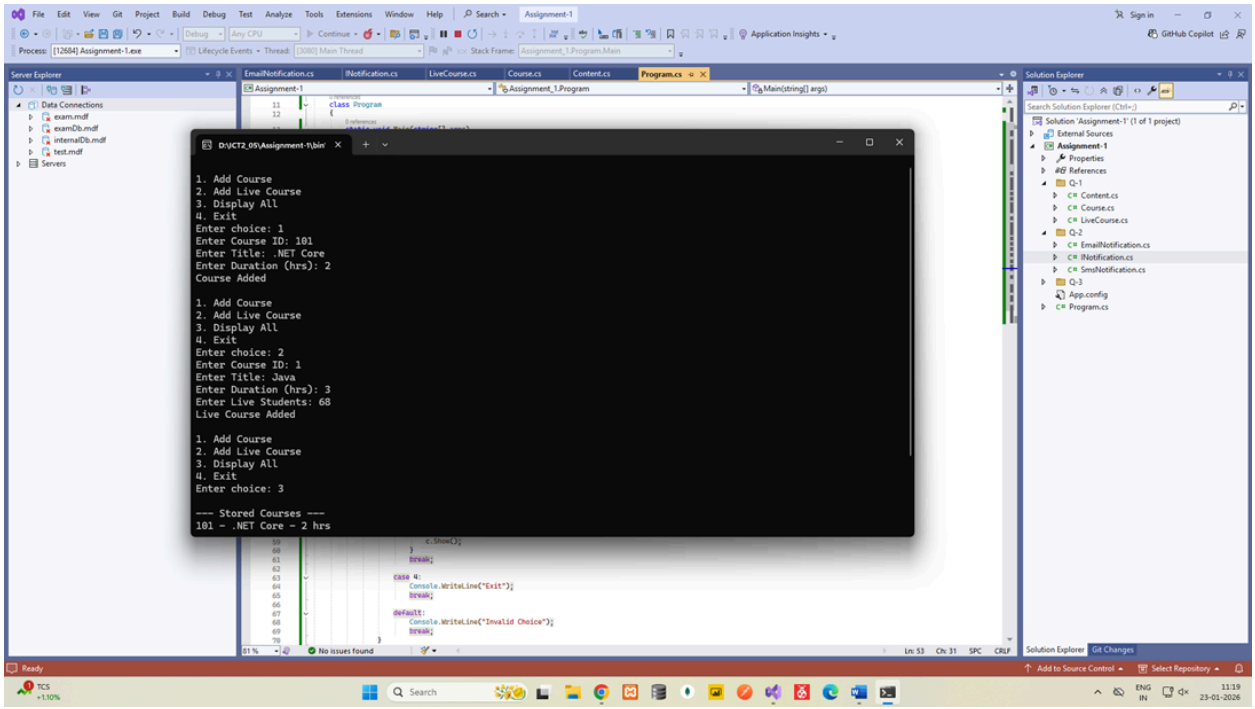


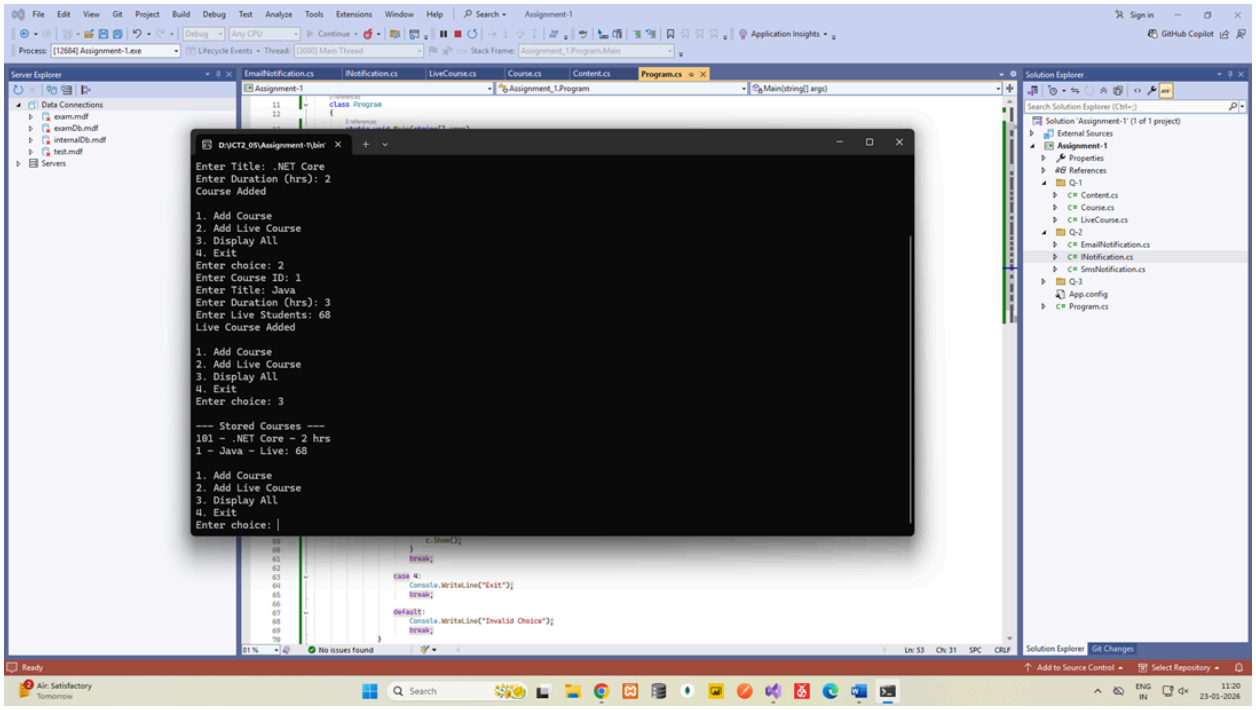
## Q-1 Program.cs :-

```
using Assignment_1.Q_2;
using Assignment_1.Q_3;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Assignment_1
{
	class Program
	{
	static void Main(string[] args)
	{
	List<Content> list = new List<Content>();
	int choice;

	do
	{
		Console.WriteLine("\n1. Add Course");
		Console.WriteLine("2. Add Live Course");
		Console.WriteLine("3. Display All");
```

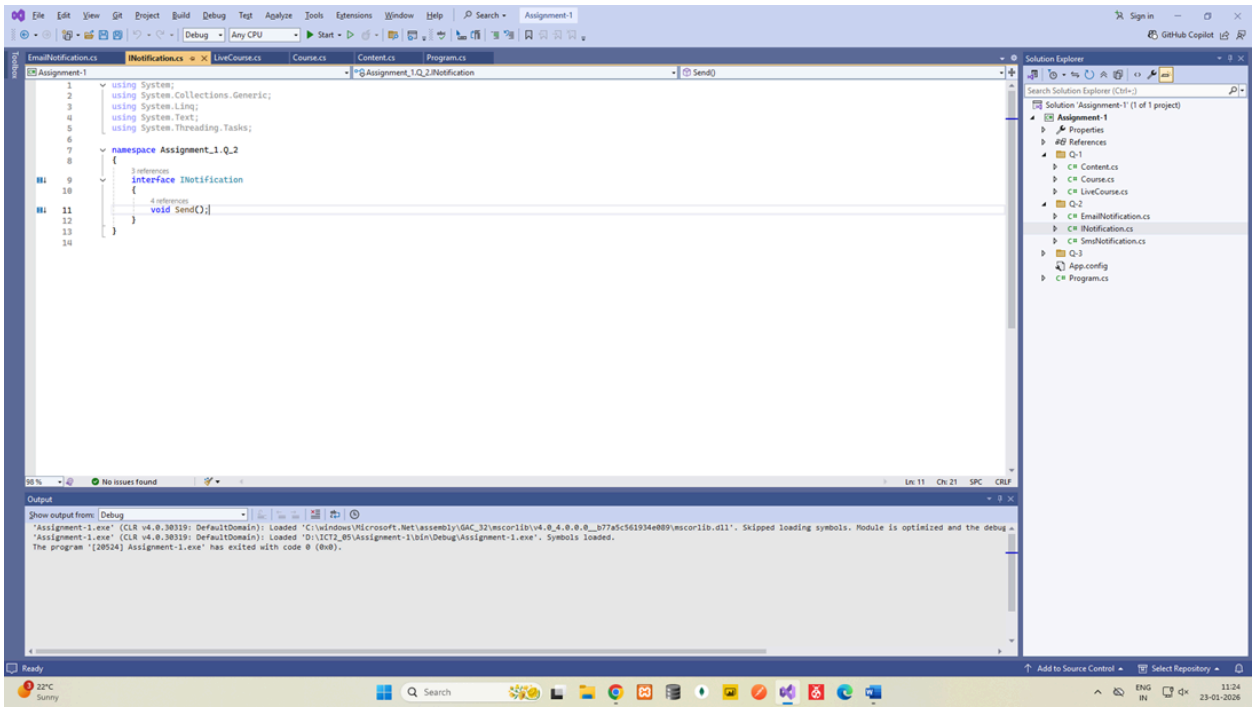
```
Console.WriteLine("4. Exit");
Console.Write("Enter choice: ");
choice = Convert.ToInt32(Console.ReadLine());

switch (choice)
{
case 1:
Console.Write("Enter Course ID: ");
int cid = Convert.ToInt32(Console.ReadLine());
Console.Write("Enter Title: ");
string ctitle = Console.ReadLine();
Console.Write("Enter Duration (hrs): ");
int dur = Convert.ToInt32(Console.ReadLine());

list.Add(new Course(cid, ctitle, dur));
Console.WriteLine("Course Added");
break;

case 2:
Console.Write("Enter Course ID: ");
int lid = Convert.ToInt32(Console.ReadLine());
Console.Write("Enter Title: ");
string ltitle = Console.ReadLine();
Console.Write("Enter Duration (hrs): ");
int ldur = Convert.ToInt32(Console.ReadLine());
Console.Write("Enter Live Students: ");
int students = Convert.ToInt32(Console.ReadLine());

list.Add(new LiveCourse(lid, ltitle, ldur, students));
Console.WriteLine("Live Course Added");
break;

case 3:
Console.WriteLine("\n--- Stored Courses ---");
foreach (Content c in list)
{
        c.Show();
}
break;

case 4:
Console.WriteLine("Exit");
break;
```

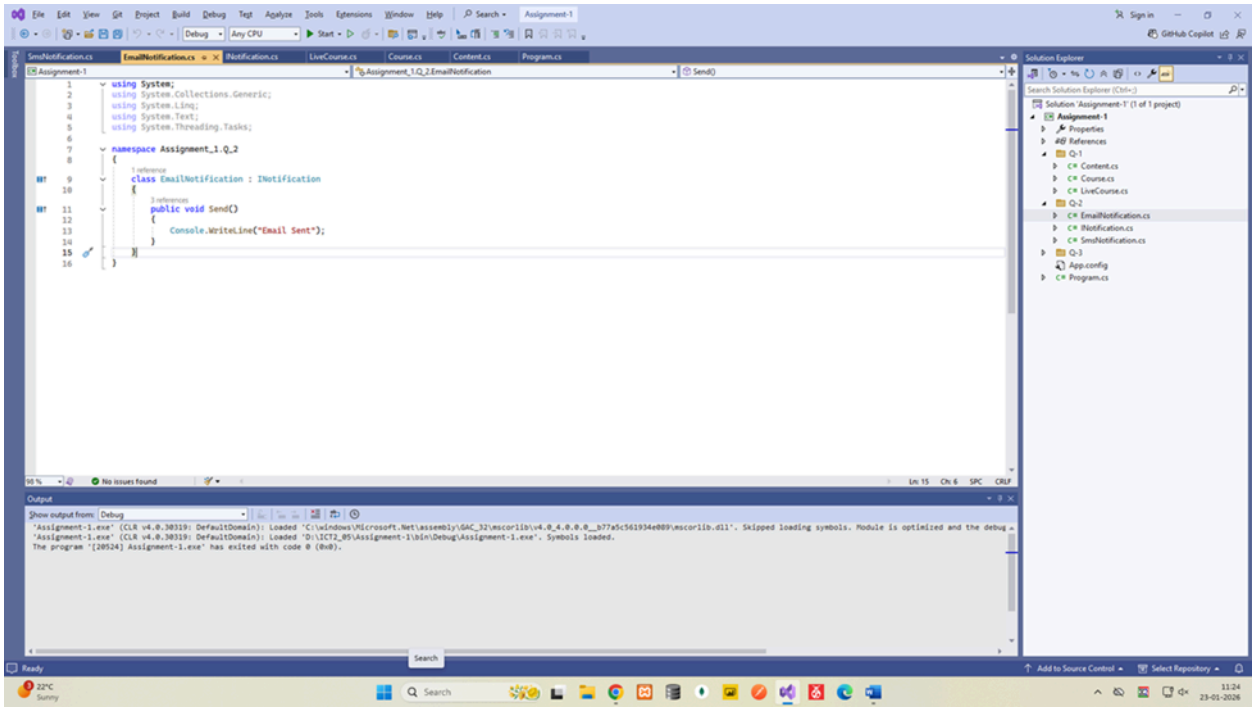
```
                default:
                Console.WriteLine("Invalid Choice");
                break;
                }

        } while (choice != 4);
        }


        }
}
```

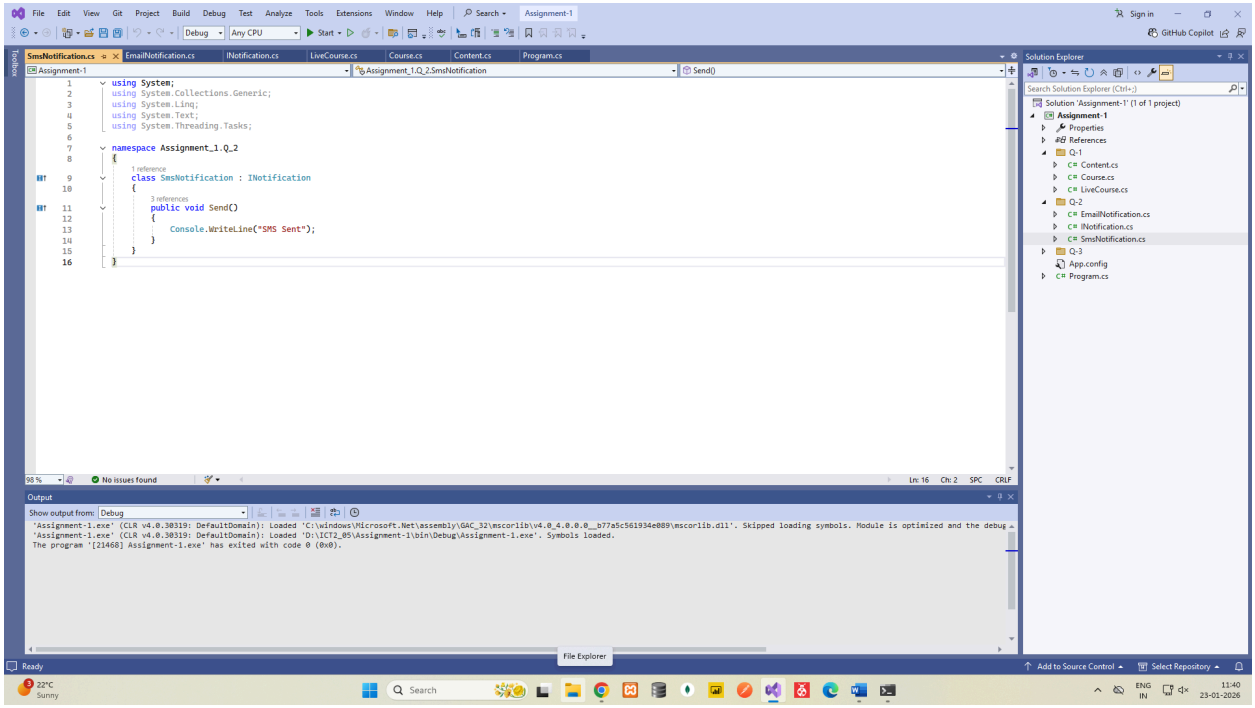


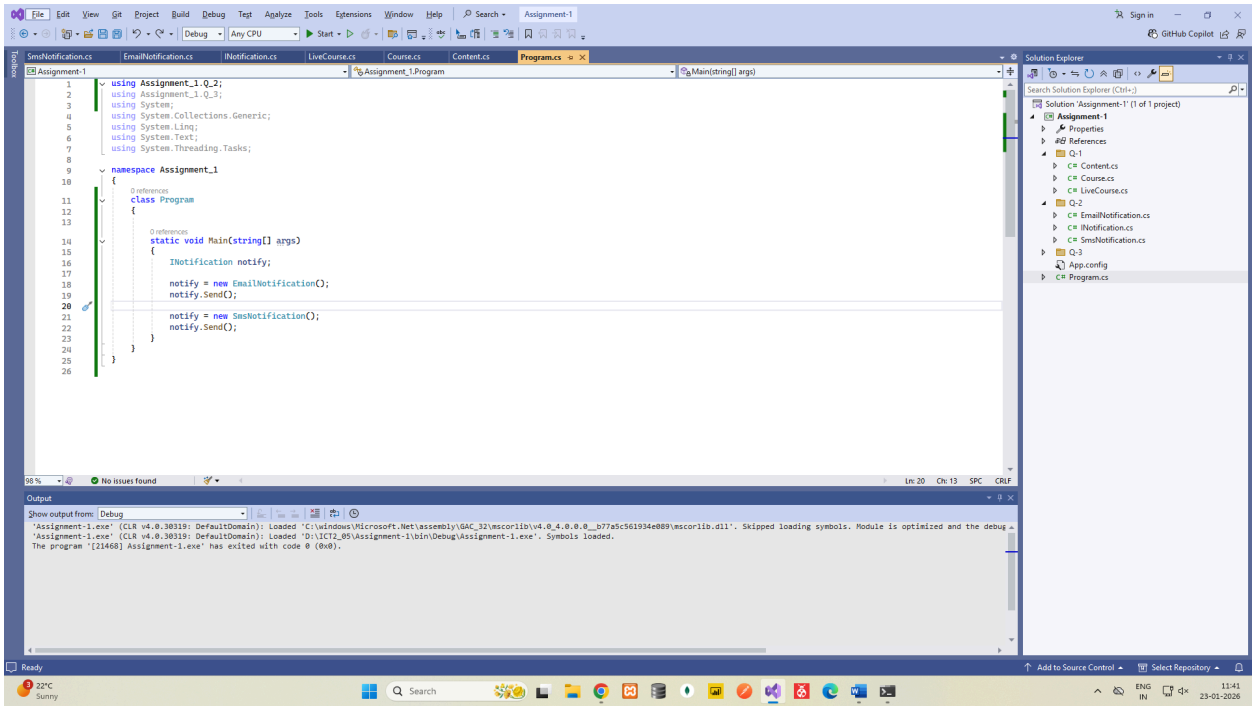



2) Create a C#.NET Core console application to demonstrate dynamic polymorphism using Interface type implementation.


using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Assignment_1.Q_2
{
3 references
interface INotification
{
4 references
void Send();
}
}
Output
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0_4.0.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading symbols. Module is optimized and the debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'D:\ICT2_05\Assignment-1\bin\Debug\Assignment-1.exe'. Symbols loaded.
The program '[20524] Assignment-1.exe' has exited with code 0 (0x0).
Solution Explorer
Assignment-1
Properties
References
Q-1
Content.cs
Course.cs
LiveCourse.cs
Q-2
EmailNotification.cs
INotification.cs
SmsNotification.cs
Q-3
App.config
Program.cs

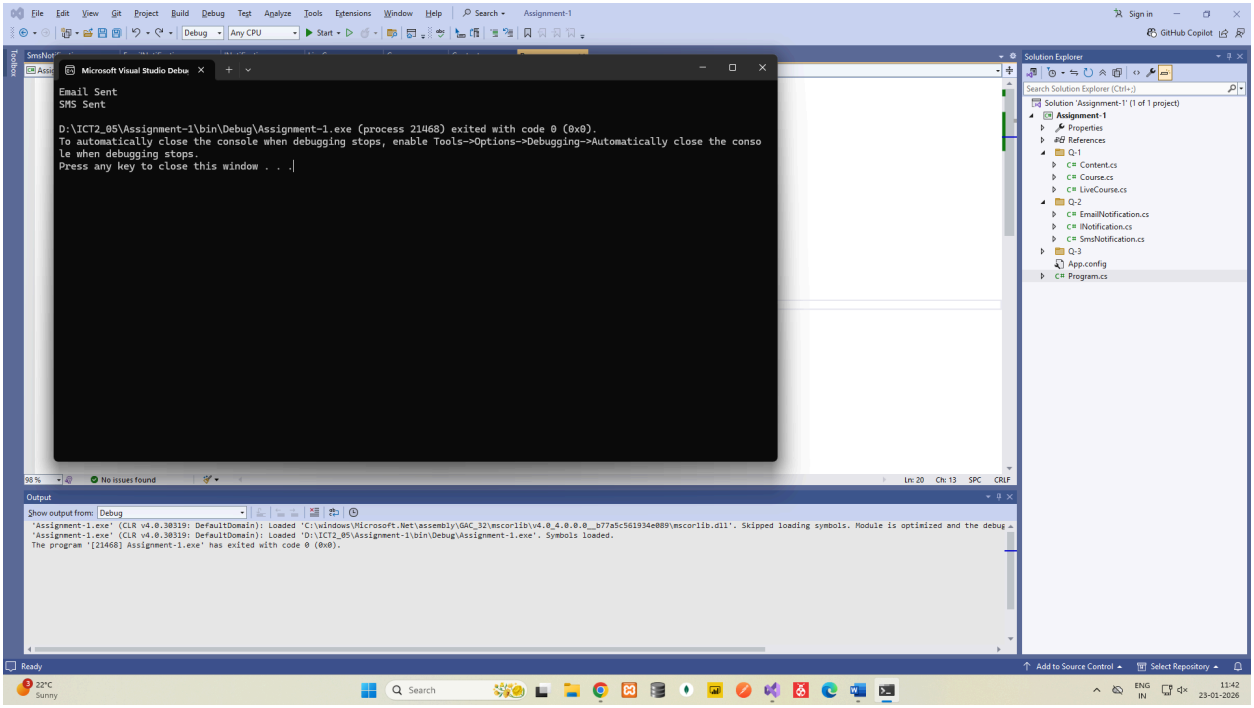

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Assignment_1.Q_2
{
1 reference
class EmailNotification : INotification
{
3 references
public void Send()
{
Console.WriteLine("Email Sent");
}
}
Output
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0_4.0.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading symbols. Module is optimized and the debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'D:\ICT2_05\Assignment-1\bin\Debug\Assignment-1.exe'. Symbols loaded.
The program '[20524] Assignment-1.exe' has exited with code 0 (0x0).
Solution Explorer
Assignment-1
Properties
References
Q-1
Content.cs
Course.cs
LiveCourse.cs
Q-2
EmailNotification.cs
INotification.cs
SmsNotification.cs
Q-3
App.config
Program.cs


SmsNotification.cs
EmailNotification.cs
INotification.cs
LiveCourse.cs
Course.cs
Content.cs
Program.cs
Assignment-1
Assignment_1.Q_2.SmsNotification
Send()
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Assignment_1.Q_2
{
1 reference
class SmsNotification : INotification
{
3 references
public void Send()
{
Console.WriteLine("SMS Sent");
}
}
}
Solution Explorer
Solution 'Assignment-1' (1 of 1 project)
Assignment-1
Properties
References
Q-1
Content.cs
Course.cs
LiveCourse.cs
Q-2
EmailNotification.cs
INotification.cs
SmsNotification.cs
Q-3
App.config
Program.cs
Output
Show output from: Debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0_4.0.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading symbols. Module is optimized and the debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'D:\ICT2_05\Assignment-1\bin\Debug\Assignment-1.exe'. Symbols loaded.
The program '[21468] Assignment-1.exe' has exited with code 0 (0x0).
No issues found
Ln: 16 Ch: 2 SPC CRLF
Ready
Add to Source Control
Select Repository
File Explorer

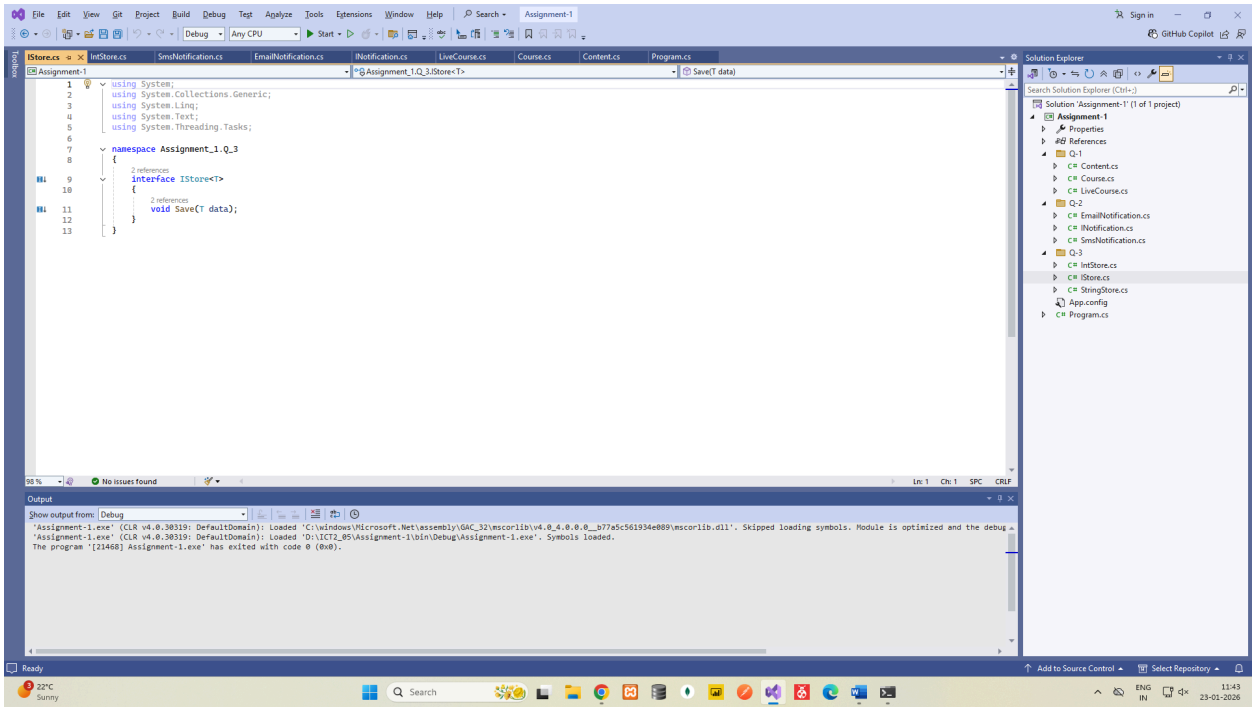

Program.cs
Assignment_1.Program
Main(string[] args)
using Assignment_1.Q_2;
using Assignment_1.Q_3;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Assignment_1
{
0 references
class Program
{
0 references
static void Main(string[] args)
{
INotification notify;
notify = new EmailNotification();
notify.Send();
notify = new SmsNotification();
notify.Send();
}
}
}
Solution Explorer
Solution 'Assignment-1' (1 of 1 project)
Assignment-1
Properties
References
Q-1
Content.cs
Course.cs
LiveCourse.cs
Q-2
EmailNotification.cs
INotification.cs
SmsNotification.cs
Q-3
App.config
Program.cs
Output
Show output from: Debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0_4.0.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading symbols. Module is optimized and the debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'D:\ICT2_05\Assignment-1\bin\Debug\Assignment-1.exe'. Symbols loaded.
The program '[21468] Assignment-1.exe' has exited with code 0 (0x0).
No issues found
Ln: 20 Ch: 13 SPC CRLF
Ready
Add to Source Control
Select Repository

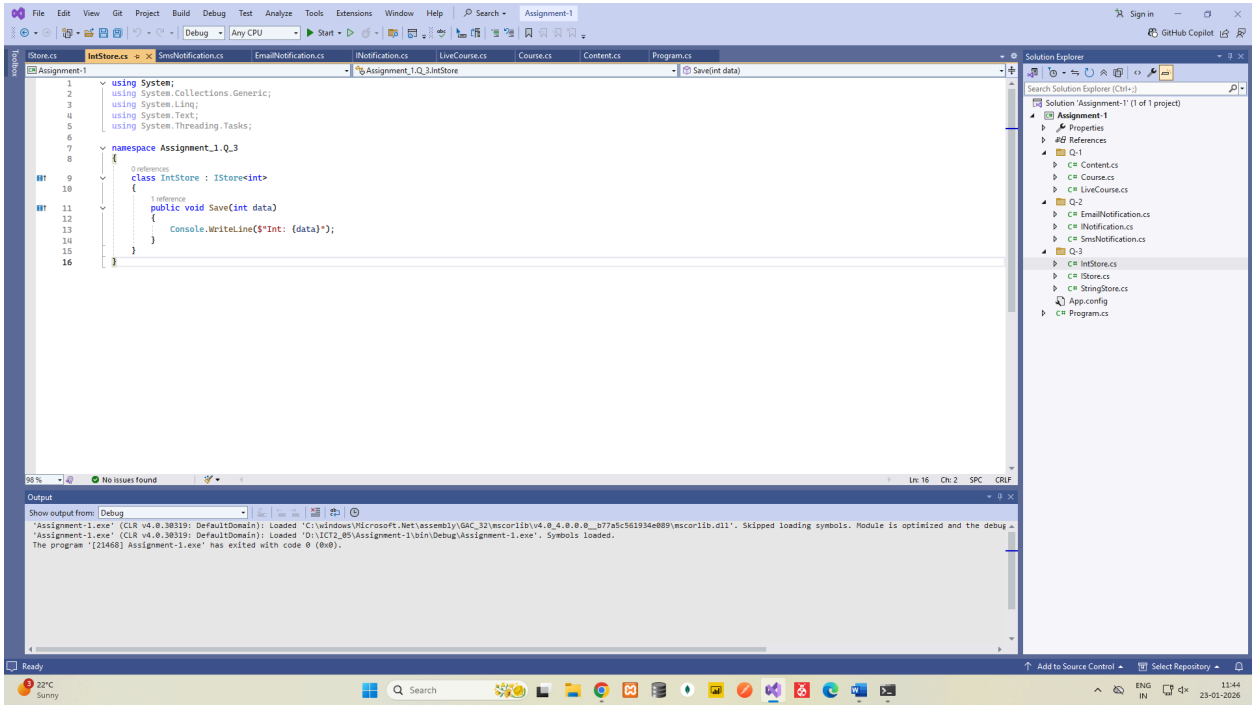
## Q-2 Program.cs :-

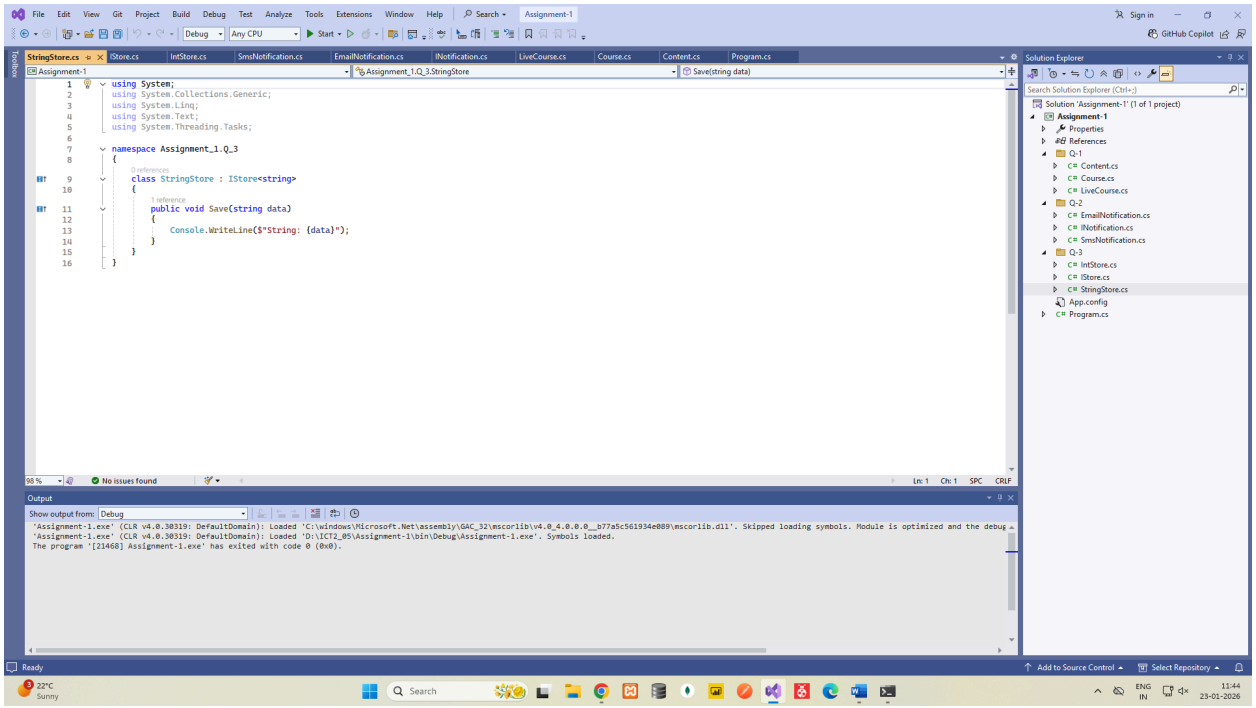
```
using Assignment_1.Q_2;
using Assignment_1.Q_3;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Assignment_1
{
    class Program
    {

        static void Main(string[] args)
        {
            INotification notify;

            notify = new EmailNotification();
            notify.Send();

            notify = new SmsNotification();
            notify.Send();
        }
    }
}
```

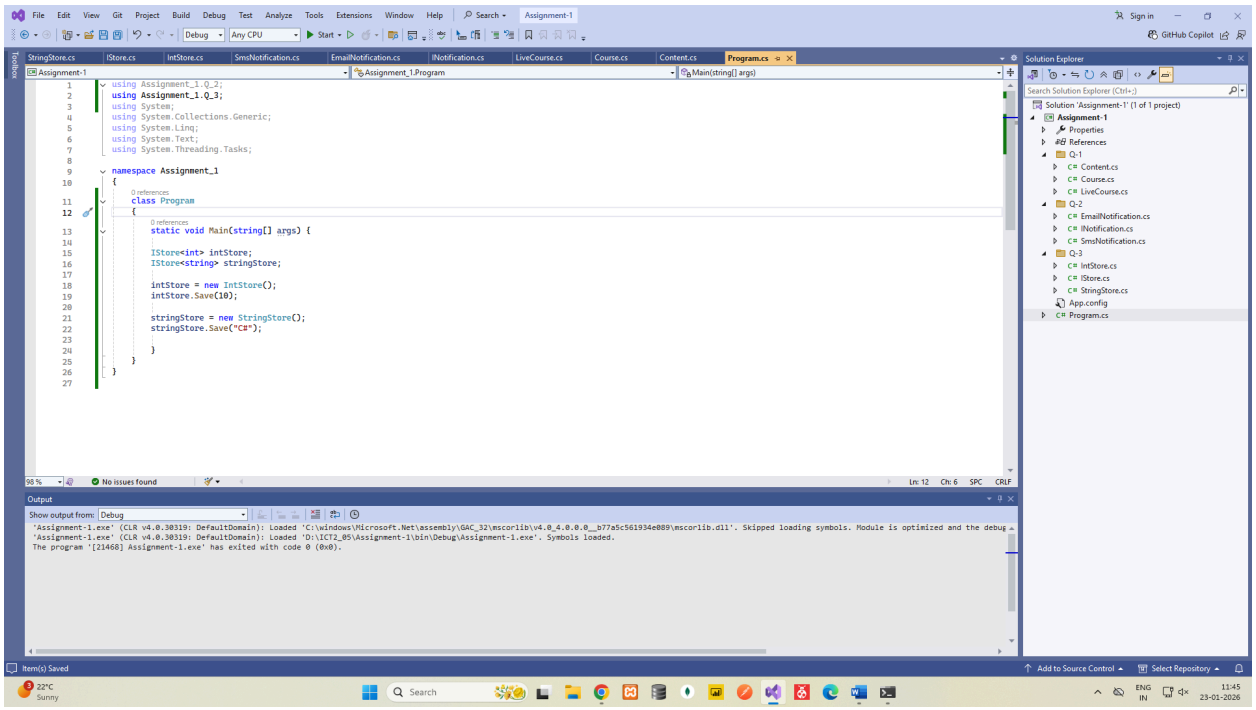



3) Create a C#.NET Core console application to demonstrate dynamic polymorphism using Generic Interface type implementation.




IStore.cs
IntStore.cs
SmsNotification.cs
EmailNotification.cs
INotification.cs
LiveCourse.cs
Course.cs
Content.cs
Program.cs
Assignment-1
Assignment_1.Q_3.IntStore
Save(int data)
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Assignment_1.Q_3
{
0 references
class IntStore : IStore<int>
{
1 reference
public void Save(int data)
{
Console.WriteLine($"Int: {data}");
}
}
}
No issues found
Ln: 16 Ch: 2 SPC CRLF
Output
Show output from: Debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0_4.0.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading symbols. Module is optimized and the debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'D:\ICT2_05\Assignment-1\bin\Debug\Assignment-1.exe'. Symbols loaded.
The program '[21468] Assignment-1.exe' has exited with code 0 (0x0).
Solution Explorer
Solution 'Assignment-1' (1 of 1 project)
Assignment-1
Properties
References
Q-1
Content.cs
Course.cs
LiveCourse.cs
Q-2
EmailNotification.cs
INotification.cs
SmsNotification.cs
Q-3
IntStore.cs
IStore.cs
StringStore.cs
App.config
Program.cs
Ready
Add to Source Control
Select Repository


StringStore.cs
IStore.cs
IntStore.cs
SmsNotification.cs
EmailNotification.cs
INotification.cs
LiveCourse.cs
Course.cs
Content.cs
Program.cs
Assignment-1
Assignment_1.Q_3.StringStore
Save(string data)
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Assignment_1.Q_3
{
0 references
class StringStore : IStore<string>
{
1 reference
public void Save(string data)
{
Console.WriteLine($"String: {data}");
}
}
}
No issues found
Ln: 1 Ch: 1 SPC CRLF
Output
Show output from: Debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0_4.0.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading symbols. Module is optimized and the debug
'Assignment-1.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'D:\ICT2_05\Assignment-1\bin\Debug\Assignment-1.exe'. Symbols loaded.
The program '[21468] Assignment-1.exe' has exited with code 0 (0x0).
Solution Explorer
Solution 'Assignment-1' (1 of 1 project)
Assignment-1
Properties
References
Q-1
Content.cs
Course.cs
LiveCourse.cs
Q-2
EmailNotification.cs
INotification.cs
SmsNotification.cs
Q-3
IntStore.cs
IStore.cs
StringStore.cs
App.config
Program.cs
Ready
Add to Source Control
Select Repository



## Q-3 Program.cs :-

```
using Assignment_1.Q_2;
using Assignment_1.Q_3;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Assignment_1
{
   class Program
   {
      static void Main(string[] args) {

      IStore<int> intStore;
      IStore<string> stringStore;

      intStore = new IntStore();
      intStore.Save(10);

      stringStore = new StringStore();
```

```
        stringStore.Save("C#");

        }
    }
}
```