COS20007: Object Oriented Programming

Pass Task 2.4: Case Study — Iteration 1: Identifiable Object

Show Wai Yan/105293041

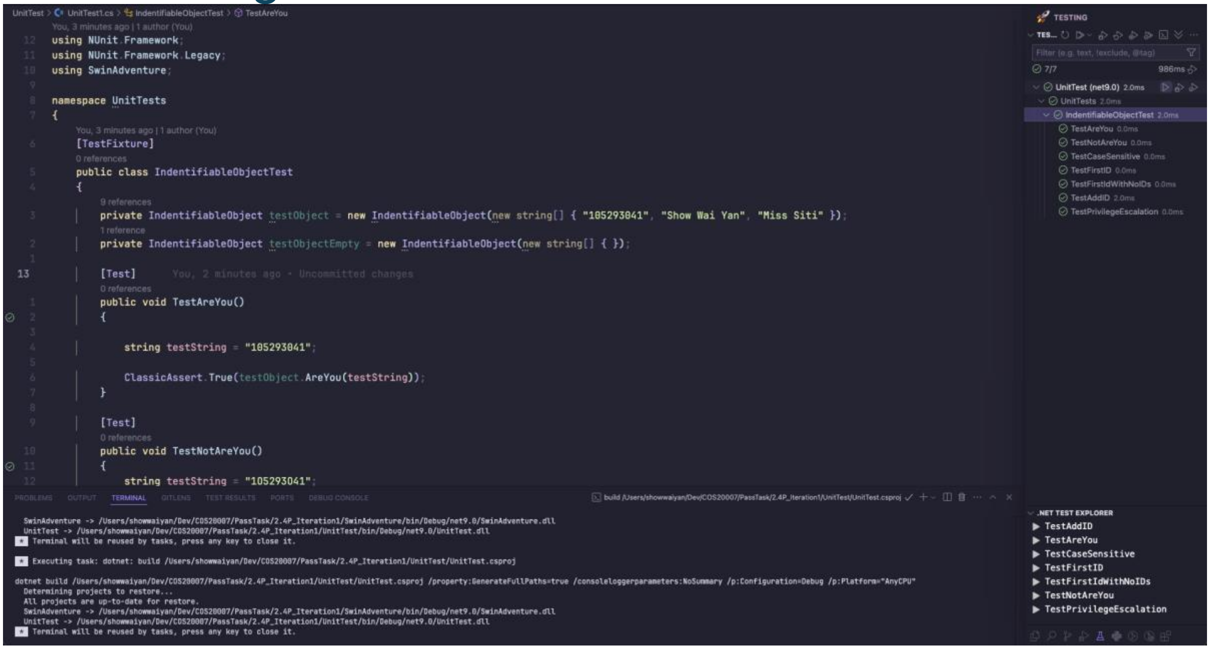
IdentifiableObject.cs

```
using System.Collections.Generic;

namespace SwinAdventure
{
    public class IndentifiableObject
    {
        // Fields
        private List<string> _identifiers = new List<string>();

        // Constructor
        public IndentifiableObject(string[] idents)
        {
            foreach (string s in idents)
            {
                AddIdentifier(s);
            }
        }

        //Methods
        public bool AreYou(string id)
        {
            return _identifiers.Contains(id.ToLower());
        }

        public void AddIdentifier(string id)
        {
            _identifiers.Add(id.ToLower());
        }

        public void PrivilegeEscalation(string pin)
        {
            if (pin == "3041")
            {
                _identifiers[0] = "105293041";
            }
        }

        // Propertry
        public string FirstId
        {
            get
            {
                if (_identifiers.Count == 0) return "";
                return _identifiers.First();
            }
        }
    }
}
```

TestIdentifiableObject.cs

```
using NUnit.Framework;
using NUnit.Framework.Legacy;
using SwinAdventure;

namespace SwinAdventure.Tests
{
    [TestFixture]
    public class IndentifiableObjectTest
    {
        private IndentifiableObject testObject = new IndentifiableObject(new string[] { "105293041", "Show Wai
Yan", "Miss Siti" });
        private IndentifiableObject testObjectEmpty = new IndentifiableObject(new string[] { });

        [Test]
        public void TestAreYou()
        {
            string testString = "105293041";

            ClassicAssert.True(testObject.AreYou(testString));
        }

        [Test]
        public void TestNotAreYou()
        {
            string testString = "1O5293O41";
            ClassicAssert.False(testObject.AreYou(testString));
        }

        [Test]
        public void TestCaseSensitive()
        {
            string testString = "inTI";
            testObject.AddIdentifier(testString);
            ClassicAssert.True(testObject.AreYou(testString));
        }

        [Test]
        public void TestFirstID()
        {
            string firstIndentifier = "105293041";
            ClassicAssert.AreEqual(firstIndentifier, testObject.FirstId);
        }

        [Test]
        public void TestFirstIdWithNoIDs()
        {
            string noIndentifier = "";
            ClassicAssert.AreEqual(noIndentifier, testObjectEmpty.FirstId);
        }

        [Test]
        public void TestAddID()
        {
            string[] testStrings = { "JavaScript", "Linux", "C#", "Rust", "DotNet" };

            foreach (string s in testStrings)
            {
                testObject.AddIdentifier(s);
            }

            foreach (string s in testStrings)
            {
                ClassicAssert.True(testObject.AreYou(s));
            }
        }

        [Test]
        public void TestPrivilegeEscalation()
        {
            string tutorialID = "105293041";
            string lastFourDigitStudentID = "3041";
            testObject.PrivilegeEscalation(lastFourDigitStudentID);

            ClassicAssert.AreEqual(tutorialID, testObject.FirstId);
        }

    }
}
```

Screenshot of the Test Explorer showing your unit test running


UnitTest > UnitTest1.cs > IndentifiableObjectTest > TestAreYou
You, 3 minutes ago | 1 author (You)
You, 3 minutes ago | 1 author (You)
0 references
9 references
1 reference
You, 2 minutes ago · Uncommitted changes
0 references
0 references
PROBLEMS
OUTPUT
TERMINAL
GITLENS
TEST RESULTS
PORTS
DEBUG CONSOLE
build /Users/showwaiyan/Dev/COS20007/PassTask/2.4P_Iteration1/UnitTest/UnitTest.csproj
TESTING
TES...
Filter (e.g. text, !exclude, @tag)
.NET TEST EXPLORER

```
using NUnit.Framework;
using NUnit.Framework.Legacy;
using SwinAdventure;

namespace UnitTests
{
    [TestFixture]
    public class IndentifiableObjectTest
    {
        private IndentifiableObject testObject = new IndentifiableObject(new string[] { "105293041", "Show Wai Yan", "Miss Siti" });
        private IndentifiableObject testObjectEmpty = new IndentifiableObject(new string[] { });

        [Test]
        public void TestAreYou()
        {

            string testString = "105293041";

            ClassicAssert.True(testObject.AreYou(testString));
        }

        [Test]
        public void TestNotAreYou()
        {
            string testString = "105293041";
```

```
  SwinAdventure -> /Users/showwaiyan/Dev/COS20007/PassTask/2.4P_Iteration1/SwinAdventure/bin/Debug/net9.0/SwinAdventure.dll
  UnitTest -> /Users/showwaiyan/Dev/COS20007/PassTask/2.4P_Iteration1/UnitTest/bin/Debug/net9.0/UnitTest.dll
 *  Terminal will be reused by tasks, press any key to close it.

 *  Executing task: dotnet: build /Users/showwaiyan/Dev/COS20007/PassTask/2.4P_Iteration1/UnitTest/UnitTest.csproj

dotnet build /Users/showwaiyan/Dev/COS20007/PassTask/2.4P_Iteration1/UnitTest/UnitTest.csproj /property:GenerateFullPaths=true /consoleloggerparameters:NoSummary /p:Configuration=Debug /p:Platform="AnyCPU"
  Determining projects to restore...
  All projects are up-to-date for restore.
  SwinAdventure -> /Users/showwaiyan/Dev/COS20007/PassTask/2.4P_Iteration1/SwinAdventure/bin/Debug/net9.0/SwinAdventure.dll
  UnitTest -> /Users/showwaiyan/Dev/COS20007/PassTask/2.4P_Iteration1/UnitTest/bin/Debug/net9.0/UnitTest.dll
 *  Terminal will be reused by tasks, press any key to close it.
```

```
✓ 7/7                                    986ms
✓ UnitTest (net9.0) 2.0ms
  ✓ UnitTests 2.0ms
    ✓ IndentifiableObjectTest 2.0ms
      ✓ TestAreYou 0.0ms
      ✓ TestNotAreYou 0.0ms
      ✓ TestCaseSensitive 0.0ms
      ✓ TestFirstID 0.0ms
      ✓ TestFirstIdWithNoIDs 0.0ms
      ✓ TestAddID 2.0ms
      ✓ TestPrivilegeEscalation 0.0ms
```

```
▶ TestAddID
▶ TestAreYou
▶ TestCaseSensitive
▶ TestFirstID
▶ TestFirstIdWithNoIDs
▶ TestNotAreYou
▶ TestPrivilegeEscalation
```