Swinburne University of Technology

COS20007 Object Oriented Programming

Case Study Iteration 1 - Identifiable Object

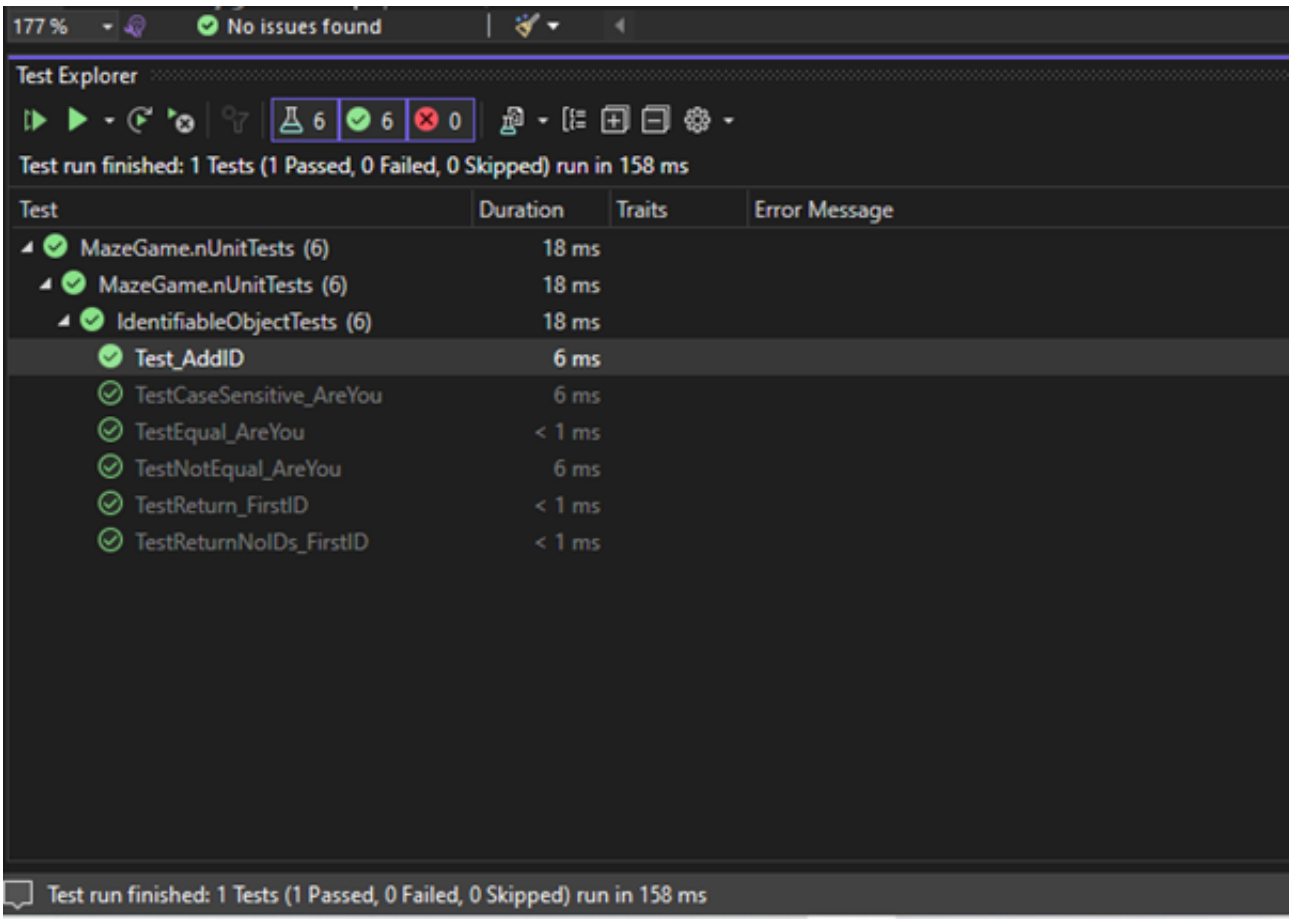
PDF generated at 19:48 on Thursday 9th November, 2023

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace MazeGame
{
    public class IdentifiableObject
    {
        List<string> _identifiers = new List<string>();

        public IdentifiableObject(string[] idents)
        {
            foreach (var ident in idents)
            {
                if (idents.Length !=0)
                {
                    if (!AreYou(ident))
                    {
                        AddIdentifier(ident);
                    }
                    else
                    {
                        Console.WriteLine($"{ident} already exist in List");
                    }
                }
                else
                {
                    _identifiers.AddRange(idents);
                }
            }
        }

        public bool AreYou(string id)
        {
            foreach (var ident in _identifiers)
            {
                if (ident.Equals(id))
                {
                    return true;
                }
            }
            return false;
        }

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

```
54                  }
55                  else
56                  {
57                      return _identifiers.ElementAt(0);
58                  }
59              }
60          }
61
62          public void AddIdentifier(string id)
63          {
64                  string idLowerCase = id.ToLower();
65                  _identifiers.Add(idLowerCase);
66                  Console.WriteLine($"Successfully added {idLowerCase} into List");
67          }
68      }
69  }
```

```
namespace MazeGame.nUnitTests
{
    public class IdentifiableObjectTests
    {
        private IdentifiableObject _idList { get; set; } = null!;
        private IdentifiableObject _idList2 { get; set; } = null!;

        [SetUp]
        public void Setup()
        {
            _idList = new IdentifiableObject(new string[] { "ID1", "iD2", "Id3",
↪   "id4", "id1" });
        }

        [Test]
        public void TestEqual_AreYou()
        {
            //Assign
            string testID = "id1";

            //Act
            //SUT = System Under Test
            var sut = _idList.AreYou(testID);

            //Assert
            Assert.That(sut, Is.EqualTo(true));
        }

        [Test]
        public void TestNotEqual_AreYou()
        {
            string testID = "id5";
            var sut = _idList.AreYou(testID);
            Assert.That(sut, Is.EqualTo(false));
        }

        [Test]
        public void TestCaseSensitive_AreYou()
        {
            string testID = "iD3";
            var sut = _idList.AreYou(testID);
            Assert.That(sut, Is.EqualTo(false));
        }

        [Test]
        public void TestReturn_FirstID()
        {
            string expectedID = "id1";
            var sut = _idList.FirstId;
            Assert.That(sut, Is.EqualTo(expectedID));
        }

        [Test]
```

```
53          public void TestReturnNoIDs_FirstID()
54          {
55              _idList2 = new IdentifiableObject(new string[0] { });
56              var sut = _idList2.FirstId;
57              Assert.That(sut, Is.EqualTo(""));
58          }
59
60
61          [Test]
62          public void Test_AddID()
63          {
64              string newID = "id6";
65              _idList.AddIdentifier(newID);
66              var sut = _idList.AreYou(newID);
67              Assert.That(sut, Is.EqualTo(true));
68          }
69      }
70  }
```


177 %
No issues found
Test Explorer
6
6
0
Test run finished: 1 Tests (1 Passed, 0 Failed, 0 Skipped) run in 158 ms
Test
Duration
Traits
Error Message
MazeGame.nUnitTests (6)
18 ms
MazeGame.nUnitTests (6)
18 ms
IdentifiableObjectTests (6)
18 ms
Test_AddID
6 ms
TestCaseSensitive_AreYou
6 ms
TestEqual_AreYou
< 1 ms
TestNotEqual_AreYou
6 ms
TestReturn_FirstID
< 1 ms
TestReturnNoIDs_FirstID
< 1 ms
Test run finished: 1 Tests (1 Passed, 0 Failed, 0 Skipped) run in 158 ms