Swinburne University of Technology

COS20007 Object Oriented Programming

Case Study - Iteration 3 - Bags

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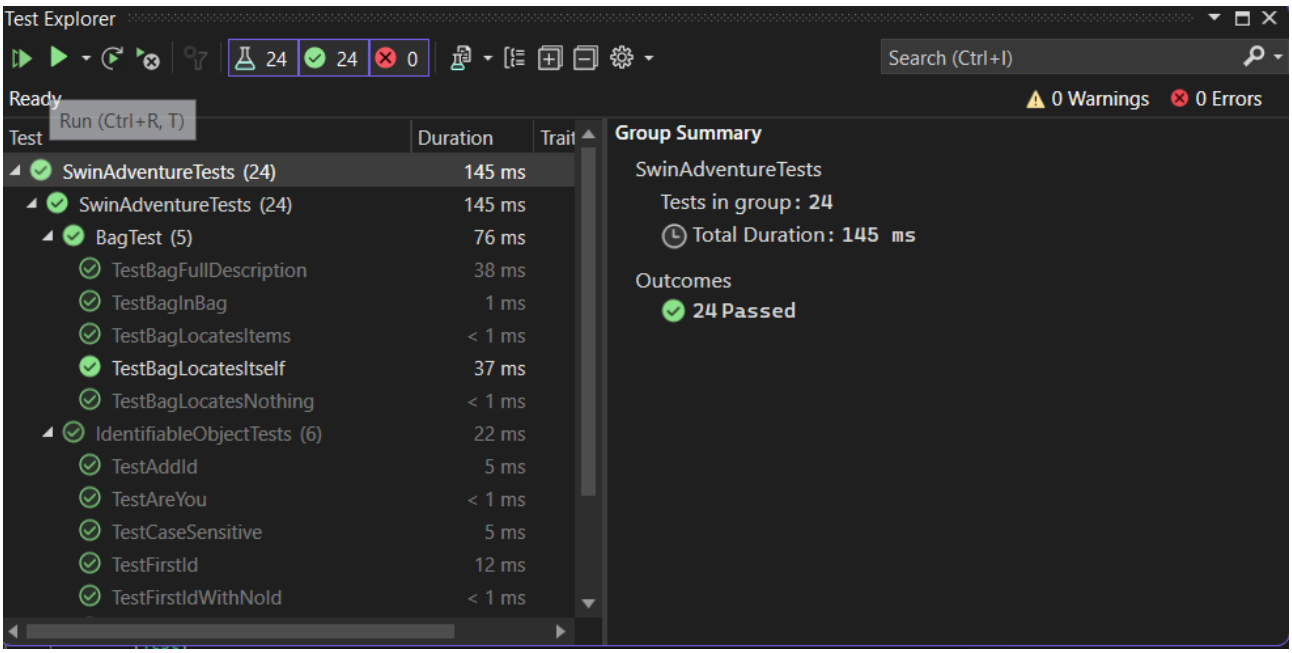
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace SwinAdventure
{
    public class Bag : Item
    {
        private Inventory _inventory;
        public Bag(string[] ids, string name, string desc) : base(ids, name, desc)
        {
            _inventory = new Inventory();
        }
        public GameObject Locate(string id)
        {
            if (AreYou(id))
            {
                return this;
            }
            else if (_inventory.HasItem(id))
            {
                return _inventory.Fetch(id);
            }
            return null;
        }
        public override string FullDescription
        {
               get
            {
                return $"{this.Name}, containing:\n" + _inventory.ItemList;
            }
        }
        public Inventory Inventory { get { return _inventory; } }
    }
}
```

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

namespace SwinAdventureTests
{
    public class BagTest
    {
        private Bag _bagObject;
        private Bag _secondBagObject;
        private Item _shovel;
        private Item _sword;
        private Item _bow;
        [SetUp]
        public void SetUp()
        {
            _bagObject = new Bag(new[] { "bag" }, "a bag", "This is a bag");
            _secondBagObject = new Bag(new[] { "second bag" }, "a second bag", "This
↪   is a second bag");
            _shovel = new Item(new[] { "shovel" }, "a shovel", "This is a shovel");
            _sword = new Item(new[] { "sword" }, "a sword", "This is a Sword");
            _bow = new Item(new[] { "bow" }, "a bow", "This is a bow");
            _secondBagObject.Inventory.Put(_bow);
            _bagObject.Inventory.Put(_sword);
            _bagObject.Inventory.Put(_shovel);
        }
        [Test]
        public void TestBagLocatesItems()
        {

            Assert.IsTrue(_bagObject.Inventory.HasItem("sword")); //Check if have
↪   item
            Assert.IsTrue(_bagObject.Inventory.HasItem("shovel"));

            Assert.IsTrue(_bagObject.Locate(_sword.FirstID) == _sword); //Check if
↪   locate item
            Assert.IsTrue(_bagObject.Locate(_shovel.FirstID) == _shovel);

        }

        [Test]
        public void TestBagLocatesItself()
        {
            string[] bagIds = new string[] { "bag" };

            foreach (string id in bagIds)
            {
                Assert.AreEqual(_bagObject.Locate(id), _bagObject);
            }
        }
```

```
51          [Test]
52          public void TestBagLocatesNothing()
53          {
54              Assert.IsTrue(_bagObject.Locate(_bow.FirstID) == null);
55          }
56          [Test]
57          public void TestBagFullDescription()
58          {
59              Assert.AreEqual(_bagObject.FullDescription, "a bag, containing:\na sword
    ↪  (sword)\na shovel (shovel)\n");
60          }
61          [Test]
62          public void TestBagInBag()
63          {
64              _bagObject.Inventory.Put(_secondBagObject);
65              Assert.IsTrue(_bagObject.Locate(_secondBagObject.FirstID) ==
    ↪  _secondBagObject);
66              Assert.IsTrue(_bagObject.Locate(_sword.FirstID) == _sword);
67              Assert.IsFalse(_bagObject.Locate(_bow.FirstID) == _bow);
68
69              Assert.AreEqual(_bagObject.FullDescription, "a bag, containing:\na sword
    ↪  (sword)\na shovel (shovel)\na second bag (second bag)\n");
70              Assert.AreEqual(_secondBagObject.FullDescription, "a second bag,
    ↪  containing:\na bow (bow)\n");
71
72          }
73      }
74  }
```


Test Explorer
24
24
0
Search (Ctrl+I)
Ready
0 Warnings
0 Errors
Run (Ctrl+R, T)
Test
Duration
Trait
SwinAdventureTests (24) 145 ms
SwinAdventureTests (24) 145 ms
BagTest (5) 76 ms
TestBagFullDescription 38 ms
TestBagInBag 1 ms
TestBagLocatesItems < 1 ms
TestBagLocatesItself 37 ms
TestBagLocatesNothing < 1 ms
IdentifiableObjectTests (6) 22 ms
TestAddId 5 ms
TestAreYou < 1 ms
TestCaseSensitive 5 ms
TestFirstId 12 ms
TestFirstIdWithNoId < 1 ms
Group Summary
SwinAdventureTests
Tests in group: 24
Total Duration: 145 ms
Outcomes
24 Passed