SWINBURNE UNIVERSITY OF TECHNOLOGY

COS20007 OBJECT ORIENTED PROGRAMMING

5.2P - Case Study - Iteration 3 - Bags

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```csharp
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
            {
                return _inventory.Fetch(id);
            }
        }

        public override string FullDescription
        {
            get
            {
                return $"In the {Name} you can see:\n" + _inventory.ItemList;
            }
        }

        public Inventory Inventory
        {
            get
            {
                return _inventory;
            }
        }

    }
}
```

```
1   using SwinAdventure;
2
3   namespace SwinAdventureTest
4   {
5       [TestFixture]
6       public class TestBag
7       {
8           Bag bag;
9           Bag backpack;
10          Item knife;
11          Item sword;
12
13          [SetUp]
14          public void Setup()
15          {
16              bag = new Bag(new string[] { "bag" }, "bag", "This is a big bag");
17              backpack = new Bag(new string[] { "backpack" }, "backpack", "This is a
    ↪   cool backpack");
18
19              knife = new Item(new string[] { "Knife" }, "a sharp knife", "This is a
    ↪   sharp knife");
20              sword = new Item(new string[] { "Sword" }, "a dull sword", "This is a
    ↪   dull sword");
21
22
23              bag.Inventory.Put(backpack);
24              bag.Inventory.Put(knife);
25              backpack.Inventory.Put(sword);
26          }
27
28
29          [Test]
30          public void TestLocatesItems()
31          {
32              Assert.That(bag.Locate("knife"), Is.SameAs(knife));
33          }
34          [Test]
35          public void TestBagLocatesItself()
36          {
37              Assert.That(bag.Locate("bag"), Is.SameAs(bag));
38          }
39          [Test]
40          public void TestBagLocatesNothing()
41          {
42              Assert.That(bag.Locate("coins"), Is.SameAs(null));
43          }
44          [Test]
45          public void TestFullDescription()
46          {
47              Assert.That(bag.FullDescription, Is.EqualTo("In the bag you can
    ↪   see:\nbackpack (backpack)\na sharp knife (knife)\n"));
48          }
49          [Test]
```

```
50          public void TestBagInBag()
51          {
52              Assert.That(bag.Locate("backpack"), Is.SameAs(backpack));
53              Assert.That(bag.Locate("knife"), Is.SameAs(knife));
54
55              Assert.That(bag.Locate("sword"), Is.SameAs(null));
56          }
57
58      }
59  }
```