**5.2. Case Iteration 3: Bag**

**Bag Class**

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 = new Inventory();

public Bag(string[] idents, string name, string desc) : base(idents, name, desc)

{

}

public Item? 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;

}

}

}

}

**Test file**

using SwinAdventure;

namespace TestQueue

{

public class Tests

{

Item item1 = new Item(new string[] { "sword" }, "sword", "a sword");

Item item2 = new Item(new string[] { "shield" }, "shield", "a shield");

Item item3 = new Item(new string[] { "shiba" }, "shiba", "a shiba");

[SetUp]

public void Setup()

{

}

//Test the Bag class

[Test]

public void BagLocate()

{

Bag backpack = new Bag(new string[] { "backpack" }, "backpack", "a backpack");

backpack.Inventory.Put(item1);

backpack.Inventory.Put(item2);

backpack.Inventory.Put(item3);

//ask to return item and item stays in backpack

Assert.That(item3, Is.EqualTo(backpack.Locate("shiba")));

Assert.IsTrue(backpack.Inventory.HasItem("shiba"));

}

[Test]

public void BagLocatesItself()

{

Bag backpack = new Bag(new string[] { "backpack" }, "backpack", "a backpack");

Assert.That(backpack, Is.EqualTo(backpack.Locate("backpack")));

}

[Test]

public void BagLocateNothing()

{

Bag backpack = new Bag(new string[] { "backpack" }, "backpack", "a backpack");

Assert.That(backpack.Locate("sword"), Is.Null);

}

[Test]

public void BagFullDescription()

{

Bag backpack = new Bag(new string[] { "backpack" }, "backpack", "a backpack");

backpack.Inventory.Put(item1);

backpack.Inventory.Put(item2);

backpack.Inventory.Put(item3);

//the list string below is the expected output, consisting of every item in the following format: name ( first id)

Assert.That(backpack.FullDescription, Is.EqualTo("In the backpack you can see:\nsword (sword)\nshield (shield)\nshiba (shiba)\n"));

}

[Test]

public void BagInBag()

{

Bag backpack = new Bag(new string[] { "backpack" }, "backpack", "a backpack");

Bag satchel = new Bag(new string[] { "satchel" }, "satchel", "a satchel");

backpack.Inventory.Put(satchel);

Assert.That(satchel, Is.EqualTo(backpack.Locate("satchel")));

}

}

}