COS20007: Object Oriented Programming

Pass Task 6.1: Case Study — Iteration 4: Look Command

Show Wai Yan/105293041

Command.cs

```
namespace SwinAdventure
{
    public abstract class Command : IndentifiableObject
    {
        public Command(string[] ids) : base(ids)
        {

        }

        public abstract string Execute(Player p, string[] text);
    }
}
```

LookCommand.cs

```
namespace SwinAdventure
{
    public class LookCommand : Command
    {
        public LookCommand()
            : base(new string[] { "look", "inventory", "inv" }) { }

        public override string Execute(Player p, string[] text)
        {
            IHaveInventory container = null;
            string containerId = null;
            string itemId = null;
            switch (text.Length)
            {
                case 1: // inventory case
                    if (text[0].ToLower() == "inventory" || text[0].ToLower() == "inv")
                    {
                        container = p;
                        itemId = "me";
                        break;
                    }
                    else
                        return "Error in look input";
                case 3: // look at <something>
                    if (text[0].ToLower() != "look")
                        return "Error in look input";

                    if (text[1].ToLower() != "at")
                        return "What do you want to look at?";

                    container = p;
                    itemId = text[2].ToLower();
                    break;
                case 5: // look at <something> in <something>
                    if (text[0].ToLower() != "look")
                        return "Error in look input";

                    if (text[3].ToLower() != "in")
                        return "What do you want to look in?";

                    containerId = text[4].ToLower();
                    container = FetchContainer(p, containerId);
                    itemId = text[2].ToLower();
                    break;
                default:
                    return "I don\'t know how to look like that";
            }

            return LookAtIn(itemId, container);
        }

        private IHaveInventory FetchContainer(Player p, string containerId)
        {
            return p.Locate(containerId) as IHaveInventory;
        }

        private string LookAtIn(string thingId, IHaveInventory container)
        {
            if (container == null)
                return "I cannot find the bag";

            if (container.Locate(thingId) == null)
                return $"I cannot find the {thingId} in the {container.Name}";

            return container.Locate(thingId).FullDescription;
        }
    }
}
```

IHaveInventory.cs

```
namespace SwinAdventure
{
   public interface IHaveInventory
   {
        public GameObject Locate(string id);
        public string Name
        {
            get;
        }
   }
}
```

Player.cs

```
namespace SwinAdventure
{
    public class Player : GameObject, IHaveInventory
    {
        // Field
        private Inventory _inventory = new Inventory();

        // Constructor
        public Player(string name, string desc) : base(new string[] { "me", "inventory" }, name, desc)
        {

        }

       // Properties
        public override string FullDescription
        {
            get { return $"You are {Name} {base.FullDescription}\nYou are carrying\n {Inventory.ItemList}"; }
        }

        public Inventory Inventory
        {
            get { return _inventory; }
        }

        // Methods
        public GameObject Locate(string id)
        {
            if (AreYou(id)) return this;
            return Inventory.Fetch(id);
        }
    }
}
```

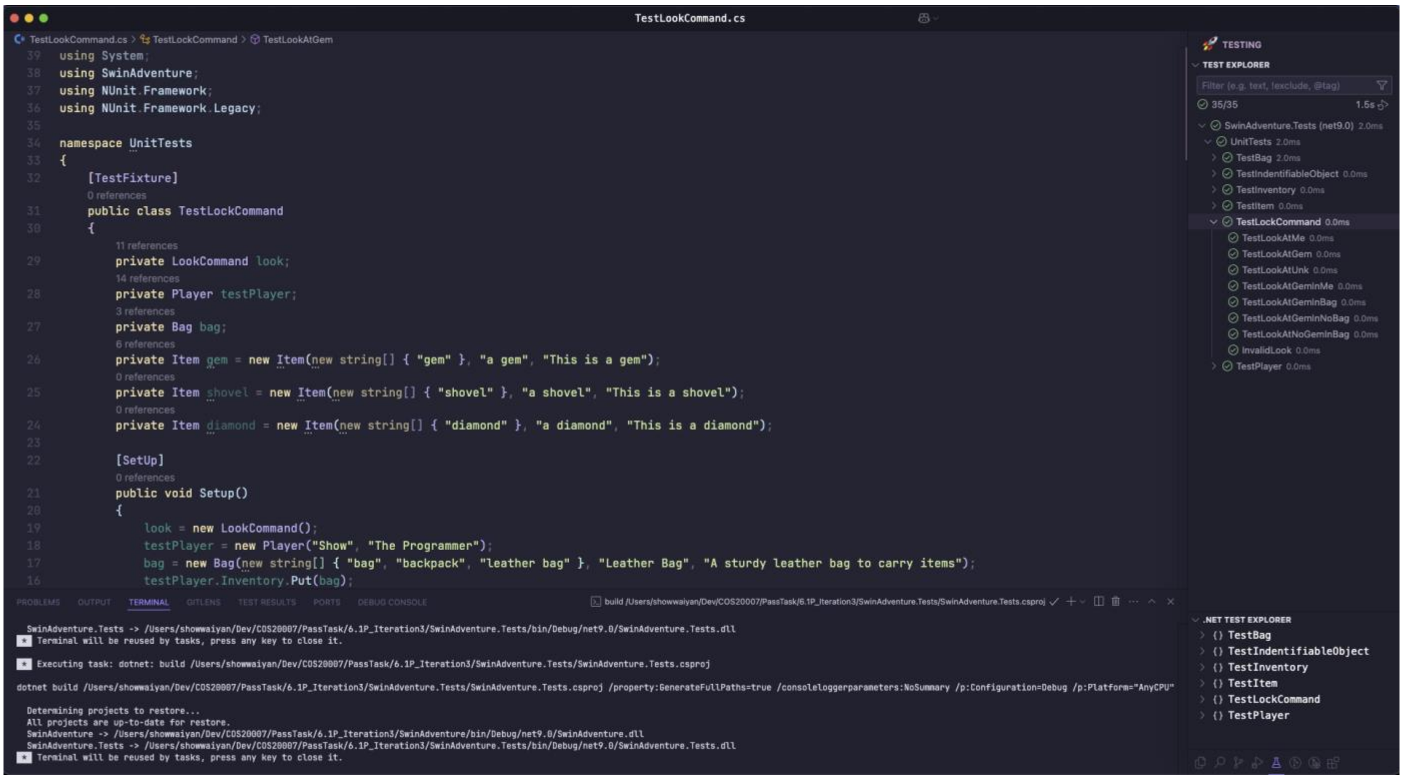
Bag.cs

```
namespace SwinAdventure
{
    public class Bag : Item, IHaveInventory
    {
        // Fields
        private Inventory _inventory;
        // Constructor
        public Bag(string[] ids, string name, string desc) : base(ids, name, desc)
        {
            _inventory = new Inventory();
        }

        // Methods
        public GameObject Locate(string id)
        {
            if (AreYou(id)) return this;
            return _inventory.Fetch(id);
        }

        // Properties
        public override string FullDescription
        {
            get { return $"{base.FullDescription}.\nYou look in the {Name.ToLower()} and 
see:\n{_inventory.ItemList}"; }
        }

        public Inventory Inventory
        {
            get { return _inventory; }
        }
    }
}
```

TestLookCommand.cs

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

namespace UnitTests
{
    [TestFixture]
    public class TestLockCommand
    {
        private LookCommand look;
        private Player testPlayer;
        private Bag bag;
        private Item gem = new Item(new string[] { "gem" }, "a gem", "This is a gem");
        private Item shovel = new Item(new string[] { "shovel" }, "a shovel", "This is a shovel");
        private Item diamond = new Item(
            new string[] { "diamond" },
            "a diamond",
            "This is a diamond"
        );

        [SetUp]
        public void Setup()
        {
            look = new LookCommand();
            testPlayer = new Player("Show", "The Programmer");
            bag = new Bag(
                new string[] { "bag", "backpack", "leather bag" },
                "Leather Bag",
                "A sturdy leather bag to carry items"
            );
            testPlayer.Inventory.Put(bag);
        }

        [Test]
        public void TestLookAtMe()
        {
            string excepted = testPlayer.FullDescription;
            string testOutPut = look.Execute(
                testPlayer,
                new string[] { "look", "at", "Inventory" }
            );
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));
        }

        [Test]
        public void TestLookAtGem()
        {
            string excepted = gem.FullDescription;
            testPlayer.Inventory.Put(gem);
            string testOutPut = look.Execute(testPlayer, new string[] { "look", "at", "Gem" });
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));
        }

        [Test]
        public void TestLookAtUnk()
        {
            string excepted = $"I cannot find the gem in the {testPlayer.Name}";
            string testOutPut = look.Execute(testPlayer, new string[] { "look", "at", "Gem" });
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));
        }

        [Test]
        public void TestLookAtGemInMe()
        {
            string excepted = gem.FullDescription;
            testPlayer.Inventory.Put(gem);
            string testOutPut = look.Execute(
                testPlayer,
                new string[] { "look", "at", "Gem", "in", "me" }
            );
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));
        }

        [Test]
        public void TestLookAtGemInBag()
        {
            string excepted = gem.FullDescription;
            bag.Inventory.Put(gem);
            string testOutPut = look.Execute(
                testPlayer,
                new string[] { "look", "at", "Gem", "in", "bag" }
            );
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));
        }

        [Test]
        public void TestLookAtGemInNoBag()
        {
            string excepted = "I cannot find the bag";
            Player noBagPlayer = new Player("Ricky", "I have No Bag bro");
            string testOutPut = look.Execute(
                noBagPlayer,
                new string[] { "look", "at", "Gem", "in", "bag" }
            );
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));
        }

        [Test]
        public void TestLookAtNoGemInBag()
        {
            string excepted = $"I cannot find the gem in the {bag.Name}";
            string testOutPut = look.Execute(
                testPlayer,
                new string[] { "look", "at", "Gem", "in", "bag" }
            );
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));
        }

        [Test]
        public void InvalidLook()
        {
            string excepted = "I don\'t know how to look like that";
            string testOutPut = look.Execute(testPlayer, new string[] { "look", "around" });
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));

            excepted = "I don\'t know how to look like that";
            testOutPut = look.Execute(testPlayer, new string[] { "hello", "105293041" });
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));

            excepted = $"I cannot find the show wai yan in the {testPlayer.Name}";
            testOutPut = look.Execute(testPlayer, new string[] { "look", "at", "Show Wai Yan" });
            ClassicAssert.That(testOutPut, Is.EqualTo(excepted));
        }
    }
}
```

Screenshot of the Test Explorer showing your unit test running



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

namespace UnitTests
{
    [TestFixture]
    0 references
    public class TestLockCommand
    {
        11 references
        private LookCommand look;
        14 references
        private Player testPlayer;
        3 references
        private Bag bag;
        6 references
        private Item gem = new Item(new string[] { "gem" }, "a gem", "This is a gem");
        0 references
        private Item shovel = new Item(new string[] { "shovel" }, "a shovel", "This is a shovel");
        0 references
        private Item diamond = new Item(new string[] { "diamond" }, "a diamond", "This is a diamond");

        [SetUp]
        0 references
        public void Setup()
        {
            look = new LookCommand();
            testPlayer = new Player("Show", "The Programmer");
            bag = new Bag(new string[] { "bag", "backpack", "leather bag" }, "Leather Bag", "A sturdy leather bag to carry items");
            testPlayer.Inventory.Put(bag);
```

```
build /Users/showwaiyan/Dev/COS20007/PassTask/6.1P_Iteration3/SwinAdventure.Tests/SwinAdventure.Tests.csproj

  SwinAdventure.Tests -> /Users/showwaiyan/Dev/COS20007/PassTask/6.1P_Iteration3/SwinAdventure.Tests/bin/Debug/net9.0/SwinAdventure.Tests.dll
 *  Terminal will be reused by tasks, press any key to close it.

 *  Executing task: dotnet: build /Users/showwaiyan/Dev/COS20007/PassTask/6.1P_Iteration3/SwinAdventure.Tests/SwinAdventure.Tests.csproj

dotnet build /Users/showwaiyan/Dev/COS20007/PassTask/6.1P_Iteration3/SwinAdventure.Tests/SwinAdventure.Tests.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/6.1P_Iteration3/SwinAdventure/bin/Debug/net9.0/SwinAdventure.dll
  SwinAdventure.Tests -> /Users/showwaiyan/Dev/COS20007/PassTask/6.1P_Iteration3/SwinAdventure.Tests/bin/Debug/net9.0/SwinAdventure.Tests.dll
 *  Terminal will be reused by tasks, press any key to close it.
```

```
✓ 35/35                                          1.5s
✓ SwinAdventure.Tests (net9.0) 2.0ms
  ✓ UnitTests 2.0ms
    ✓ TestBag 2.0ms
    ✓ TestIndentifiableObject 0.0ms
    ✓ TestInventory 0.0ms
    ✓ TestItem 0.0ms
    ✓ TestLockCommand 0.0ms
      ✓ TestLookAtMe 0.0ms
      ✓ TestLookAtGem 0.0ms
      ✓ TestLookAtUnk 0.0ms
      ✓ TestLookAtGemInMe 0.0ms
      ✓ TestLookAtGemInBag 0.0ms
      ✓ TestLookAtGemInNoBag 0.0ms
      ✓ TestLookAtNoGemInBag 0.0ms
      ✓ InvalidLook 0.0ms
    ✓ TestPlayer 0.0ms
```

```
{} TestBag
{} TestIndentifiableObject
{} TestInventory
{} TestItem
{} TestLockCommand
{} TestPlayer
```