Inventory.cs

```
using System;
using System.Collections.Generic;

namespace Iteration8
{
    public class Inventory
    {
        private readonly List<Item> _items;

        public Inventory()
        {
            _items = [];
        }

        public bool HasItem(string id)
        {
            foreach (Item item in _items)
            {
                if (item.AreYou(id))
                {
                    return true;
                }
            }
            return false;
        }

        public void Put(Item itm)
        {
            _items.Add(itm);
        }

        public Item Fetch(string id)
        {
            foreach (Item item in _items)
            {
                if (item.AreYou(id))
                {
                    return item;
                }
            }
            return null;
        }

        public Item Take(string id)
        {
            Item takeitem = Fetch(id);
            _items.Remove(takeitem);
            return takeitem;
        }

        public string ItemList
        {
            get
            {
                string list = "";
                foreach (Item item in _items)
```

```
                {
                    list += "\t" + item.ShortDescription + "\n";
                }
                return list;
            }
        }
    }
}
```

Path.cs

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

namespace Iteration8
{
    public class Path(string[] idents, string name, string desc, Location source,
Location destination) : GameObject(idents, name, desc)
    {
        private readonly Location _source = source;
        private readonly Location _destination = destination;

        public Location Source
        {
            get
            {
                return _source;
            }
        }

        public Location Destination
        {
            get
            {
                return _destination;
            }
        }
    }
}
```

GameObject.cs

```
using System;
using System.Collections.Generic;
using System.Text;

namespace Iteration8
{
    public class GameObject(string[] idents, string name, string desc) :
IdentifiableObject(idents)
    {
        private readonly string _description = desc;
        private readonly string _name = name;

        public string Name
        {
```

```
            get
            {
                return _name;
            }
        }
        public string ShortDescription
        {
            get
            {
                return "a " + _name + " " + "(" + FirstID + ")";
            }
        }
        public virtual string FullDescription
        {
            get
            {
                return _description;
            }
        }
    }
}
```

Bag.cs

```
using System;
using System.Xml.Linq;

namespace Iteration8
{
    public class Bag(string[] idents, string name, string desc) : Item(idents, name,
desc), IHaveInventory
    {
        private readonly Inventory _inventory = new();

        public Inventory Inventory
        {
            get
            {
                return _inventory;
            }
        }

        public GameObject Locate(string id)
        {
            if (this.AreYou(id))
            {
                return this;
            }
            else if (_inventory.HasItem(id))
            {
                return _inventory.Fetch(id);
            }
            return null;

        }

        public override string FullDescription
        {
```

```
            get
            {
                string InventoryDescription = "In the " + Name + " you can see:\n";
                InventoryDescription += _inventory.ItemList;
                return InventoryDescription;
            }
        }
    }
}
```

Location.cs

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

namespace Iteration8
{
    public class Location(string[] idents, string name, string desc) :
GameObject(idents, name, desc), IHaveInventory
    {
        readonly Inventory _inventory = new();
        readonly List<Path> _paths = [];

        public Location(string[] idents, string name, string desc, List<Path> paths)
: this(idents, name, desc)
        {
            _paths = paths;
        }

        public Inventory Inventory
        {
            get
            {
                return _inventory;
            }
        }

        public GameObject Locate(string id)
        {
            if (AreYou(id))
            {
                return this;
            }

            foreach (Path path in _paths)
            {
                if (path.AreYou(id))
                {
                    return path;
                }
            }

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

```
        public override string FullDescription
        {
            get
            {
                if (_inventory != null)
                {
                    return $"{base.FullDescription}.\nItems
available:\n{_inventory.ItemList}";
                }
                return "There are no items here.";
            }
        }

        public void AddPath(Path path)
        {
            _paths.Add(path);
        }

        public string PathList
        {
            get
            {
                if (_paths.Count == 0)
                {
                    return "\nThere are no exits.";
                }
                else
                {
                    string list = "\nThere are exits to the ";
                    foreach (Path path in _paths)
                    {
                        list += path.FirstID + ", ";
                    }
                    list = list.TrimEnd(',', ' ') + ".";
                    return list;
                }
            }
        }
    }
}
```

Players.cs

```
using System;
using System.Collections;
using System.Collections.Generic;
using System.Linq;
using System.Xml.Linq;

namespace Iteration8
{
    public class Player(string name, string desc) : GameObject(["me", "inventory"],
name, desc), IHaveInventory
    {
        private readonly Inventory _inventory = new();
        private Location _location;

        public GameObject Locate(string id)
        {
```

```
            if (AreYou(id))
            {
                return this;
            }
            GameObject obj = _inventory.Fetch(id);
            if (obj != null)
            {
                return obj;
            }
            if (_location != null)
            {
                obj = _location.Locate(id);
                return obj;
            }
            else
            {
                return null;
            }
        }

        public override string FullDescription
        {
            get
            {
                return "You are " + Name + ", a " + base.FullDescription + ".\nYou
are carrying:\n" + _inventory.ItemList;
            }
        }

        public Inventory Inventory
        {
            get
            {
                return _inventory;
            }
        }

        public Location Location
        {
            get
            {
                return _location;
            }

            set
            {
                _location = value;
            }
        }

        public void Move(Path path)
        {
            if (path.Destination != null)
            {
                _sourcelocation = path.Source;
                _location = path.Destination;
            }
        }
```

```
     }
}
```

Move.cs

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

namespace Iteration8
{
    public class Move : Command
    {
        public Move() : base(["move", "go", "head", "leave"])
        {
        }

        private static bool CheckMoveCommand(string command)
        {
            return command == "move" || command == "go" || command == "head" ||
command == "leave";
        }

        public override string Execute(Player p, string[] text)
        {
            string location;
            string error = "Where do you want to go?";
            string error1 = "Error in move command.";

            if (text.Length < 2 && CheckMoveCommand(text[0].ToLower()))
            {
                return error;
            }
            if (text.Length == 2 && CheckMoveCommand(text[0].ToLower()))
            {
                location = text[1].ToLower();
            }
            else
            {
                return error1;
            }
            return MoveTo(location, p);
        }

        private static string MoveTo(string location, Player p)
        {
            GameObject path = p.Location.Locate(location);
            string nopath = "The exit is not available.";

            if (path == null)
            {
                return nopath;
            }
            else
            {
```

```
                p.Move((Path)path);
                return $"You have moved {path.FirstID} through a {path.Name} to
{p.Location.Name}, {p.Location.FullDescription}{p.Location.PathList}";
            }
        }
    }
}
```

Look.cs

```
using System;

namespace Iteration7
{
    public class Look : Command
    {
        public Look() : base(["look"])
        {

        }

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

        private static string LookAtIn(string thingId, IHaveInventory container)
        {
            GameObject foundItem = container.Locate(thingId);
            if (foundItem == null)
            {
                if (container == container.Locate("inventory"))
                {
                    return $"I can't find {thingId}";
                }
                else
                {
                    return $"I can't find {thingId} in the {container.Name}";
                }
            }
            return foundItem.FullDescription;
        }

        public override string Execute(Player p, string[] text)
        {
            IHaveInventory? container = p;
            string error = "I don't know how to look like that";
            string error1 = "Error in look input";
            string error2 = "What do you want to look at?";
            string error3 = "What do you want to look in?";

            if (text.Length == 1 && text[0].Equals("look",
StringComparison.CurrentCultureIgnoreCase))
            {
                return $"You are in the {p.Location.Name},
{p.Location.FullDescription}{p.Location.PathList}";
            }
```

```
            if (text.Length != 3 && text.Length != 5)
            {
                return error;
            }

            if (!text[0].Equals("look", StringComparison.CurrentCultureIgnoreCase))
            {
                return error1;
            }


            if (!text[1].Equals("at", StringComparison.CurrentCultureIgnoreCase))
            {
                return error2;
            }

            if (text.Length == 5)
            {
                if (!text[3].Equals("in",
StringComparison.CurrentCultureIgnoreCase))
                    return error3;

                container = FetchContainer(p, text[4]);
                if (container == null)
                    return $"I can't find the {text[4]}";
            }
            return LookAtIn(text[2], container);
        }
    }
}
```

Items.cs

```
using System;
using System.Collections.Generic;
using System.Text;

namespace Iteration8
{
    public class Item(string[] idents, string name, string desc) :
GameObject(idents, name, desc)
    {

    }
}
```

IhaveInventory.cs

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

namespace Iteration8
{
    interface IHaveInventory
    {
        GameObject Locate(string id);
```

```
        string Name
        {
            get;
        }
    }
}
```

IdentifiableObject.cs

```
using System;
using System.Collections.Generic;

namespace Iteration8
{
    public class IdentifiableObject
    {
        private readonly List<string> _idents = [];

        public IdentifiableObject(string[] idents)
        {
            foreach (string s in idents)
            {
                AddIdentifier(s);
            }
        }

        public bool AreYou(string id)
        {
            return _idents.Contains(id.ToLower());
        }

        public string FirstID
        {
            get
            {
                if (_idents.Count == 0)
                {
                    return "";
                }
                else
                {
                    return _idents[0];
                }
            }
        }

        public void AddIdentifier(string id)
        {
            _idents.Add(id.ToLower());
        }
    }
}
```

Command.cs

```
using System;
using System.Collections.Generic;
using System.Linq;
```

```
using System.Text;
using System.Threading.Tasks;

namespace Iteration8
{
    public abstract class Command(string[] ids) : IdentifiableObject(ids)
    {
        public abstract string Execute(Player p, string[] text);
    }
}
```

CommandProcessor.cs

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

namespace Iteration8
{
    public class CommandProcessor : Command
    {
        readonly List<Command> _commands;

        public CommandProcessor() : base(["command"])
        {
            _commands = [new Look(), new Move()];
        }

        public override string Execute(Player p, string[] text)
        {
            foreach (Command cmd in _commands)
            {
                if (cmd.AreYou(text[0].ToLower()))
                {
                    return cmd.Execute(p, text);
                }
            }
            return "Error in command input.";
        }
    }
}
```

Program.cs

```
using System;

namespace Iteration8
{
    public class Interface
    {
        static void Main(string[] args)
        {
            Player player;
            Bag bag;
            Bag backpack;
```

```
            Item sword;
            Item shield;
            Item potion;
            Item gem;

            Location garage;
            Location bedroom;
            Location gamingroom;
            Location livingroom;

            Item monitor;
            Item computer;
            Item phone;

            CommandProcessor command;
            string input = "";

            Console.WriteLine("Press Q to Exit \n");
            Console.WriteLine("What is your name?");

            string name = Console.ReadLine();
            Console.WriteLine($"Hi {name}, What is your occupation?");
            string description = Console.ReadLine();
            player = new Player(name, description);

            bedroom = new(["bedroom"], "private bedroom", "a room for private
stuff");
            player.Location = bedroom;
            Console.WriteLine($"You are {name}, a {description}. Welcome to the
{player.Location.Name}");

            bag = new Bag(["bag"], "leather bag", "a light bag, suitable for short
trips");
            backpack = new Bag(["backpack"], "fabric backpack", "a medium-sized
backpack, suitable for abroad travelling");

            gem = new Item(["gem"], "gem", "A gem that could be used to trade
items.");
            sword = new Item(["sword"], "diamond sword", "a diamond sword which has
not broken once");
            shield = new Item(["shield"], "gold shield", "a gold shield that lasts a
lifetime");
            potion = new Item(["potion"], "healing potion", "a healing potion which
is needed for adventurers");

            garage = new Location(["garage"], "big garage", "a room where items are
stored");
            Path bedroomTogarage = new(["east"], "rolling door", "Walk through
rolling door", bedroom, garage);
            Path garageTobedroom = new(["west"], "rolling door", "Walk through
rolling door", garage, bedroom);
            bedroom.AddPath(bedroomTogarage);
            garage.AddPath(garageTobedroom);

            monitor = new Item(["monitor"], "new monitor", "a brand new monitor");
            computer = new Item(["computer"], "public computer", "a computer which
is suitable for students");
```

```
            phone = new Item(["phone"], "mobile phone", "a phone that is recently
sold");
            Item tablet = new(["tablet"], "IMac", "an expensive tablet");
            Item mouse = new(["mouse"], "wireless mouse", "a mouse that is bought on
EBay");
            Item TV = new(["TV"], "Samsung TV", "a TV that hasn't been used much");

            garage.Inventory.Put(monitor);
            garage.Inventory.Put(computer);
            garage.Inventory.Put(phone);
            player.Inventory.Put(computer);

            command = new CommandProcessor();

            player.Inventory.Put(sword);
            player.Inventory.Put(shield);
            player.Inventory.Put(bag);
            player.Inventory.Put(potion);
            player.Inventory.Put(backpack);

            bag.Inventory.Put(potion);
            backpack.Inventory.Put(sword);
            backpack.Inventory.Put(bag);

            gamingroom = new(["gamingroom"], "large gamingroom", "a room for
relaxation");
            Path bedroomTogamingroom = new(["north"], "door", "Go through door",
bedroom, gamingroom);
            Path gamingroomTobedroom = new(["south"], "door", "Go through door",
gamingroom, bedroom);
            bedroom.AddPath(bedroomTogamingroom);
            gamingroom.AddPath(gamingroomTobedroom);

            livingroom = new(["livingroom"], "family livingroom", "a room for family
talk");
            Path bedroomTolivingroom = new(["down"], "door", "Go through door",
bedroom, livingroom);
            Path livingroomTobedroom = new(["up"], "door", "Go through door",
livingroom, bedroom);
            bedroom.AddPath(bedroomTolivingroom);
            livingroom.AddPath(livingroomTobedroom);

            gamingroom.Inventory.Put(monitor);
            gamingroom.Inventory.Put(computer);
            bedroom.Inventory.Put(gem);
            bedroom.Inventory.Put(mouse);
            livingroom.Inventory.Put(tablet);
            livingroom.Inventory.Put(TV);

            while (input != "q")
            {
                Console.Write("Command: \n");
                input = Console.ReadLine().Trim();

                if (input != "q")
                {
                    Console.WriteLine(command.Execute(player, input.Split()));
                }
```

```
                else
                {
                    break;
                }
            }
        }
    }
}
```

InventoryTest.cs

```
using System;
using System.Collections.Generic;
using NUnit.Framework;

namespace Iteration8
{
    [TestFixture]
    public class TestInventory
    {
        Inventory inventory;
        Item sword;
        Item shield;
        Item potion;

        [SetUp]
        public void SetUp()
        {
            inventory = new Inventory();

            sword = new Item(["sword"], "diamond sword", "a diamond sword which has
not broken once");
            shield = new Item(["shield"], "gold shield", "a gold shield that lasts a
lifetime");
            potion = new Item(["potion"], "healing potion", "a healing potion which
is needed for the adventurers");

            inventory.Put(sword);
            inventory.Put(shield);
        }
        [Test]
        public void TestFoundItem()
        {
            Assert.Multiple(() =>
            {
                Assert.That(inventory.HasItem("sword"), Is.True);
                Assert.That(inventory.HasItem("shield"), Is.True);
            });
        }
        [Test]
        public void TestNoItemFound()
        {
            Assert.That(inventory.HasItem("potion"), Is.False);
        }
        [Test]
        public void TestFecthItem()
        {
            Assert.Multiple(() =>
```

```
            {
                Assert.That(inventory.Fetch("sword"), Is.EqualTo(sword));
                Assert.That(inventory.HasItem("sword"), Is.True);
            });
        }
        [Test]
        public void TestTakeItem()
        {
            Assert.Multiple(() =>
            {
                Assert.That(inventory.Take("sword"), Is.EqualTo(sword));
                Assert.That(inventory.HasItem("sword"), Is.False);
                Assert.That(inventory.HasItem("shield"), Is.True);
                Assert.That(inventory.HasItem("potion"), Is.False);
            });
        }
        [Test]
        public void TestItemList()
        {
            Assert.That(inventory.ItemList, Is.EqualTo("\ta diamond sword
(sword)\n\ta gold shield (shield)\n"));
        }
    }
}
```

PlayersTest.cs

```
using System;
using System.Collections.Generic;
using NUnit.Framework;

namespace Iteration8
{
    [TestFixture]
    public class TestPlayer
    {
        Player player;
        Item sword;
        Item shield;

        [SetUp]
        public void Setup()
        {
            player = new Player("ruchan", "member of a chess club");
            sword = new Item(["sword"], "diamond sword", "a diamond sword which has
not broken once");
            shield = new Item(["shield"], "gold shield", "a gold shield that lasts a
lifetime");

            player.Inventory.Put(sword);
            player.Inventory.Put(shield);
        }

        [Test]
        public void TestPLayerIsIdentifiable()
        {
```

```
            Assert.Multiple(() =>
            {
                Assert.That(player.AreYou("me"), Is.True, "True");
                Assert.That(player.AreYou("inventory"), Is.True, "True");
            });
        }

        [Test]
        public void TestPlayerLocatesItems()
        {
            var result = false;
            var itemLocated = player.Locate("sword");
            if (sword == itemLocated)
            {
                result = true;
            }
            Assert.That(result, Is.True);

            _ = player.Locate("shield");
            if (shield == itemLocated)
            {
                result = true;
            }
            Assert.That(result, Is.True);
        }

        [Test]
        public void TestPlayerLocatesItself()
        {
            Assert.Multiple(() =>
            {
                Assert.That(player.Locate("me"), Is.EqualTo(player));
                Assert.That(player.Locate("inventory"), Is.EqualTo(player));
            });
        }

        [Test]
        public void TestPlayerLocatesNothing()
        {
            Assert.That(player.Locate("plate"), Is.EqualTo(null));
        }

        [Test]
        public void TestPlayerFullDescription()
        {
            Assert.That(player.FullDescription, Is.EqualTo("You are ruchan, a member
of a chess club.\nYou are carrying:\n\ta diamond sword (sword)\n\ta gold shield
(shield)\n"));
        }
    }
}
```

LookTest.cs

```
using System;
using System.ComponentModel;
using System.Linq;
```

```
namespace Iteration8
{
    [TestFixture]
    public class TestLook
    {
        Look look;
        Player player;
        Bag bag;
        Item sword;
        Item shield;
        Item potion;

        [SetUp]
        public void SetUp()
        {
            look = new Look();
            player = new Player("ruchan", "a member of a chess club");

            bag = new Bag(["bag"], "leather bag", "a light bag, suitable for short
trips");
            sword = new Item(["sword"], "diamond sword", "a diamond sword which has
not broken once");
            shield = new Item(["shield"], "gold shield", "a gold shield that lasts a
lifetime");
            potion = new Item(["potion"], "healing potion", "a healing potion which
is needed for the adventurers");
        }

        [Test]
        public void TestLookAtMe()
        {
            Assert.That(look.Execute(player, ["look", "at", "me"]),
Is.EqualTo(player.FullDescription));
        }

        [Test]
        public void TestLookAtSword()
        {
            player.Inventory.Put(sword);
            Assert.That(look.Execute(player, ["look", "at", "sword"]),
Is.EqualTo(sword.FullDescription));
        }

        [Test]
        public void TestLookAtUnknownItems()
        {
            Assert.That(look.Execute(player, ["look", "at", "plate"]),
Is.EqualTo($"I can't find plate"));
        }

        [Test]
        public void TestLookAtSwordInMe()
        {
            player.Inventory.Put(sword);
            Assert.That(look.Execute(player, ["look", "at", "sword", "in", "me"]),
Is.EqualTo(sword.FullDescription));
        }
        [Test]
```

```
        public void TestLookAtSwordInBag()
        {
            bag.Inventory.Put(sword);
            bag.Inventory.Put(shield);
            player.Inventory.Put(bag);
            Assert.That(look.Execute(player, ["look", "at", "sword", "in", "bag"]),
Is.EqualTo(sword.FullDescription));
        }

        [Test]
        public void TestLookAtPotionInNoBag()
        {
            bag.Inventory.Put(potion);
            Assert.That(look.Execute(player, ["look", "at", "potion", "in", "bag"]),
Is.EqualTo("I can't find the bag"));
        }

        [Test]
        public void TestLookAtNoShieldInBag()
        {
            bag.Inventory.Put(sword);
            player.Inventory.Put(bag);
            Assert.Multiple(() =>
            {
                Assert.That(look.Execute(player, ["look", "at", "shield", "in",
"bag"]), Is.EqualTo("I can't find shield in the leather bag"));
                Assert.That(look.Execute(player, ["look", "at", "potion", "in",
"bag"]), Is.EqualTo("I can't find potion in the leather bag"));
            });
        }
        [Test]
        public void TestInvalidLook()
        {
            Assert.Multiple(() =>
            {
                Assert.That(look.Execute(player, ["look", "down"]), Is.EqualTo("I
don't know how to look like that"));
                Assert.That(look.Execute(player, ["stare", "at", "plate"]),
Is.EqualTo("Error in look input"));
                Assert.That(look.Execute(player, ["look", "at", "potion", "on",
"bag"]), Is.EqualTo("What do you want to look in?"));
                Assert.That(look.Execute(player, ["look", "for", "shield"]),
Is.EqualTo("What do you want to look at?"));
            });
        }
    }
}
```

LocationTest.cs

```
using Iteration8;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Iteration8
```

```
{
    [TestFixture]
    public class LocationTest
    {
        Player player;
        Location location;
        Item sword;

        [SetUp]
        public void SetUp()
        {
            player = new Player("ruchan", "member of a chess club");
            sword = new Item(["sword"], "diamond sword", "a diamond sword which has
not broken once");
            location = new Location(["garage"], "big garage", "a place where you
store stuff");
        }

        [Test]
        public void TestLocationIdentifyItself()
        {
            GameObject result = location.Locate("garage");
            Assert.That(result, Is.EqualTo(location));
        }

        [Test]
        public void TestLocationLocateItemTheyHave()
        {
            location.Inventory.Put(sword);
            GameObject expected = sword;
            GameObject actual = location.Locate("sword");
            Assert.That(actual, Is.EqualTo(expected));
        }

        [Test]
        public void TestPlayerCanLocateItemInTheirLocation()
        {
            location.Inventory.Put(sword);
            player.Location = location;
            GameObject expected = sword;
            GameObject actual = player.Location.Locate("sword");
            Assert.That(actual, Is.EqualTo(expected));
        }
    }
}
```

BagTest.cs

```
using System;
using System.Collections.Generic;
using NUnit.Framework;

namespace Iteration8
{
    [TestFixture]
    public class TestBag
    {
        Item sword;
```

```
        Item shield;
        Bag bag;
        Bag backpack;

        [SetUp]
        public void SetUp()
        {
            sword = new Item(["sword"], "diamond sword", "a diamond sword which has
not broken once");
            shield = new Item(["shield"], "gold shield", "a gold shield that lasts a
lifetime");
            bag = new Bag(["bag"], "leather bag", "a light bag, suitable for short
trips");
            backpack = new Bag(["backpack"], "fabric backpack", "a medium-sized
backpack, suitable for abroad travelling");

            bag.Inventory.Put(sword);
            backpack.Inventory.Put(shield);
            backpack.Inventory.Put(bag);
        }

        [Test]
        public void TestBagLocateItems()
        {
            Assert.Multiple(() =>
            {
                Assert.That(bag.Locate("sword"), Is.EqualTo(sword));
                Assert.That(backpack.Locate("shield"), Is.EqualTo(shield));
            });
        }
        [Test]
        public void TestBagLocatesItself()
        {
            Assert.Multiple(() =>
            {
                Assert.That(bag.Locate("bag"), Is.EqualTo(bag));
                Assert.That(backpack.Locate("backpack"), Is.EqualTo(backpack));
            });
        }
        [Test]
        public void TestBagLocatesNothing()
        {
            Assert.That(bag.Locate("Nothing"), Is.EqualTo(null));
        }
        [Test]
        public void TestBagFullDesc()
        {
            Assert.That(bag.FullDescription, Is.EqualTo("In the leather bag you can
see:\n\ta diamond sword (sword)\n"));
        }
        [Test]
        public void TestBagInBag()
        {
            Assert.Multiple(() =>
            {
                Assert.That(backpack.Locate("bag"), Is.EqualTo(bag));
                Assert.That(bag.Locate("sword"), Is.EqualTo(sword));
                Assert.That(bag.Locate("shield"), Is.EqualTo(null));
```

```
            });
        }
    }
}
```

PathTest.cs

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

namespace Iteration8
{
    public class PathTest
    {
        Player? _testPlayer;
        Location? _testRoomA;
        Location? _testRoomB;
        Path? _testPath;

        [Test]
        public void TestLocatePathDestination()
        {
            _testPlayer = new Player("ruchan", "student");

            _testRoomA = new Location(["bedroom"], "bedroom", "Room for
decoration");
            _testRoomB = new Location(["bathroom"], "bathroom", "Room for
illustration");

            _testPlayer.Location = _testRoomA;
            _testPath = new Path(["north"], "Door", "A test door", _testRoomA,
_testRoomB);
            _testRoomA.AddPath(_testPath);

            Location _expected = _testRoomB;
            Location _actual = _testPath.Destination;

            Assert.That(_actual, Is.EqualTo(_expected));
        }

        [Test]
        public void TestLocatePathName()
        {
            _testPlayer = new Player("ruchan", "student");

            _testRoomA = new Location(["bedroom"], "bedroom", "Room for
decoration");
            _testRoomB = new Location(["bathroom"], "bathroom", "Room for
illustration");

            _testPlayer.Location = _testRoomA;
            _testPath = new Path(["north"], "Door", "A test door", _testRoomA,
_testRoomB);
            _testRoomA.AddPath(_testPath);
```

```
            string _expected = "A test door";
            string _actual = _testPath.FullDescription;

            Assert.That(_actual, Is.EqualTo(_expected));
        }

        [Test]
        public void TestLocatePath()
        {
            _testPlayer = new Player("ruchan", "student");

            _testRoomA = new Location(["bedroom"], "bedroom", "Room for
decoration");
            _testRoomB = new Location(["bathroom"], "bathroom", "Room for
illustration");

            _testPlayer.Location = _testRoomA;
            _testPath = new Path(["north"], "Door", "A test door", _testRoomA,
_testRoomB);
            _testRoomA.AddPath(_testPath);

            GameObject _expected = _testRoomA.Locate("north");
            GameObject _actual = _testPath;

            Assert.That(_actual, Is.EqualTo(_expected));
        }
    }
}
```

MoveTest.cs

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

namespace Iteration8
{
    public class MoveTest
    {
        Move? _moveCommand;
        Player? _testPlayer;
        Location? _testRoomA;
        Location? _testRoomB;
        Path? _testPath;

        [Test]
        public void TestPlayerCanMove()
        {
            _moveCommand = new Move();
            _testPlayer = new Player("ruchan", "student");

            _testRoomA = new Location(["bedroom"], "bedroom", "Room for
decoration");
            _testRoomB = new Location(["bathroom"], "bathroom", "Room for
illustration");
```

```
            _testPlayer.Location = _testRoomA;
            _testPath = new Path(["north"], "Door", "A test door", _testRoomA,
_testRoomB);
            _testRoomA.AddPath(_testPath);

            _moveCommand.Execute(_testPlayer, ["move", "north"]);

            string _expected = _testRoomB.Name;
            string _actual = _testPlayer.Location.Name;
            Assert.That(_actual, Is.EqualTo(_expected), "Testing that player can
move");
        }

        [Test]
        public void TestMoveDescription()
        {
            _moveCommand = new Move();
            _testPlayer = new Player("ruchan", "student");

            _testRoomA = new Location(["bedroom"], "bedroom", "Room for
decoration");
            _testRoomB = new Location(["bathroom"], "bathroom", "Room for
illustration");

            _testPlayer.Location = _testRoomA;
            _testPath = new Path(["north"], "door", "A test door", _testRoomA,
_testRoomB);
            _testRoomA.AddPath(_testPath);

            string _expected = "You have moved north through a door from bedroom to
bathroom, Room for illustration.\nItems available:\n\nThere are no exits.";
            string _actual = _moveCommand.Execute(_testPlayer, ["move", "north"]);
            Assert.That(_actual, Is.EqualTo(_expected), "Testing that move
description is correct");
        }

        [Test]
        public void TestInvalidMoveNoDirection()
        {
            _moveCommand = new Move();
            _testPlayer = new Player("ruchan", "student");

            _testRoomA = new Location(["bedroom"], "bedroom", "Room for
decoration");
            _testRoomB = new Location(["bathroom"], "bathroom", "Room for
illustration");

            _testPlayer.Location = _testRoomA;
            _testPath = new Path(["north"], "Door", "A test door", _testRoomA,
_testRoomB);

            string _expected = "Where do you want to go?";
            string _actual = _moveCommand.Execute(_testPlayer, ["move"]); ;
            Assert.That(_actual, Is.EqualTo(_expected), "Testing invalid move: no
path specified");
        }

        [Test]
```

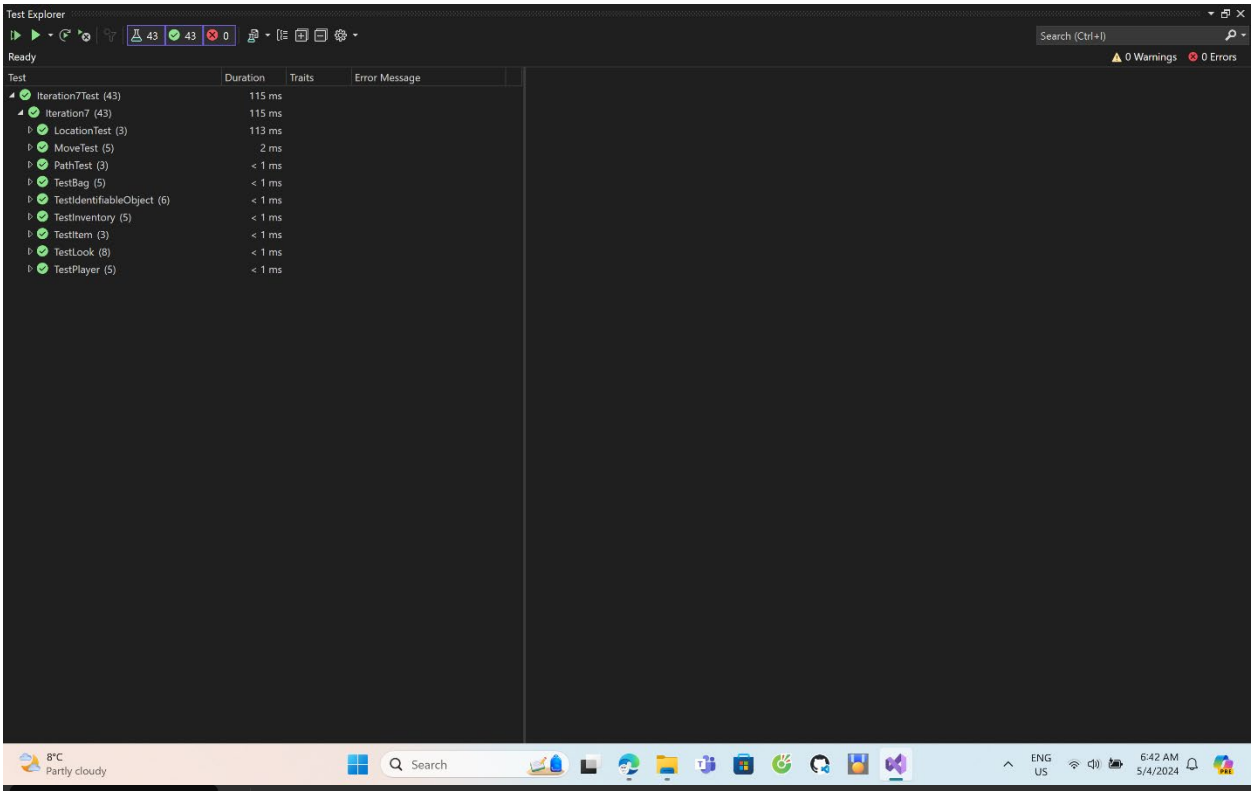
```
        public void TestInvalidMoveNoPath()
        {
            _moveCommand = new Move();
            _testPlayer = new Player("ruchan", "student");

            _testRoomA = new Location(["bedroom"], "bedroom", "Room for
decoration");
            _testRoomB = new Location(["bathroom"], "bathroom", "Room for
illustration");

            _testPlayer.Location = _testRoomA;
            _testPath = new Path(["north"], "Door", "A test door", _testRoomA,
_testRoomB);

            string _expected = "The exit is not available.";
            string _actual = _moveCommand.Execute(_testPlayer, ["move", "east"]); ;
            Assert.That(_actual, Is.EqualTo(_expected), "Testing invalid move: non-
existent path");
        }

        [Test]
        public void TestInvalidMoveNoLocation()
        {
            _moveCommand = new Move();
            _testPlayer = new Player("ruchan", "student");

            _testRoomA = new Location(["bedroom"], "bedroom", "Room for
decoration");
            _testPlayer.Location = _testRoomA;

            string _expected = "The exit is not available.";
            string _actual = _moveCommand.Execute(_testPlayer, ["move", "east"]); ;
            Assert.That(_actual, Is.EqualTo(_expected), "Testing invalid move: no
destination location specified");
        }
    }
}
```

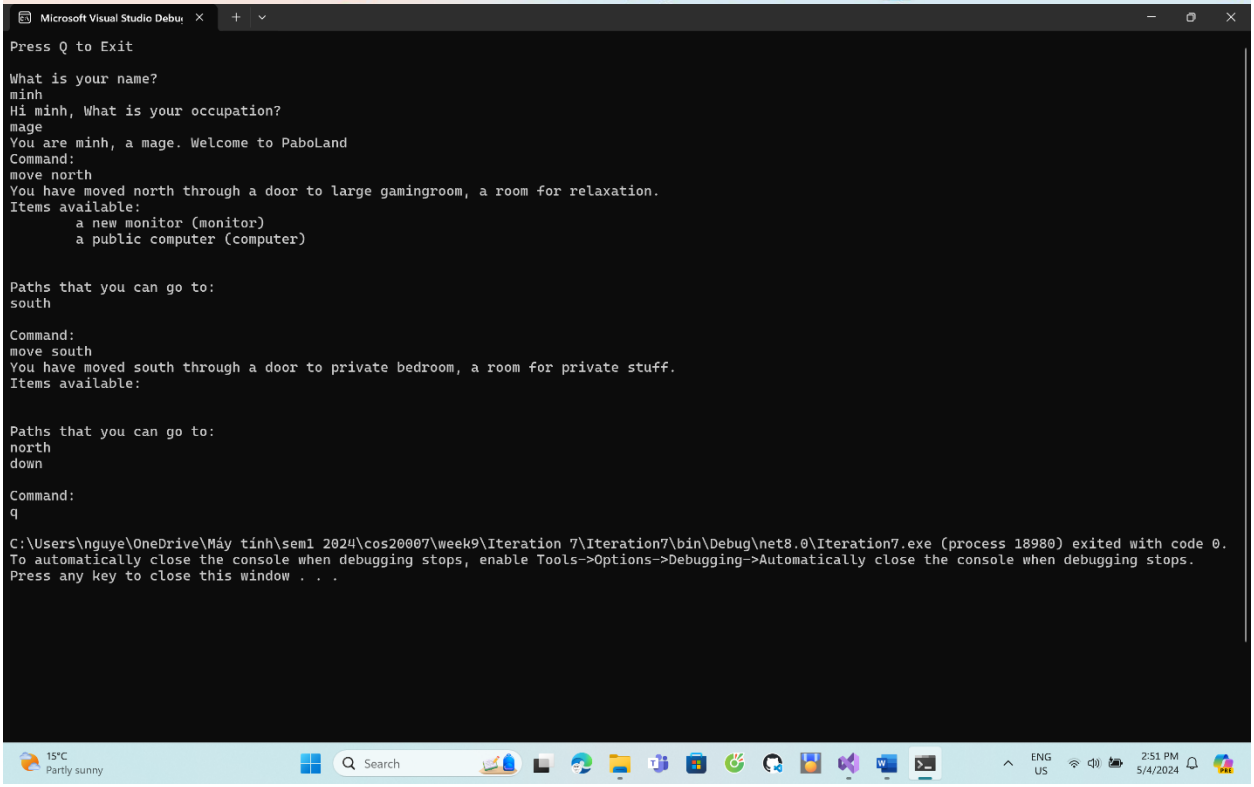
ItemsTest.cs

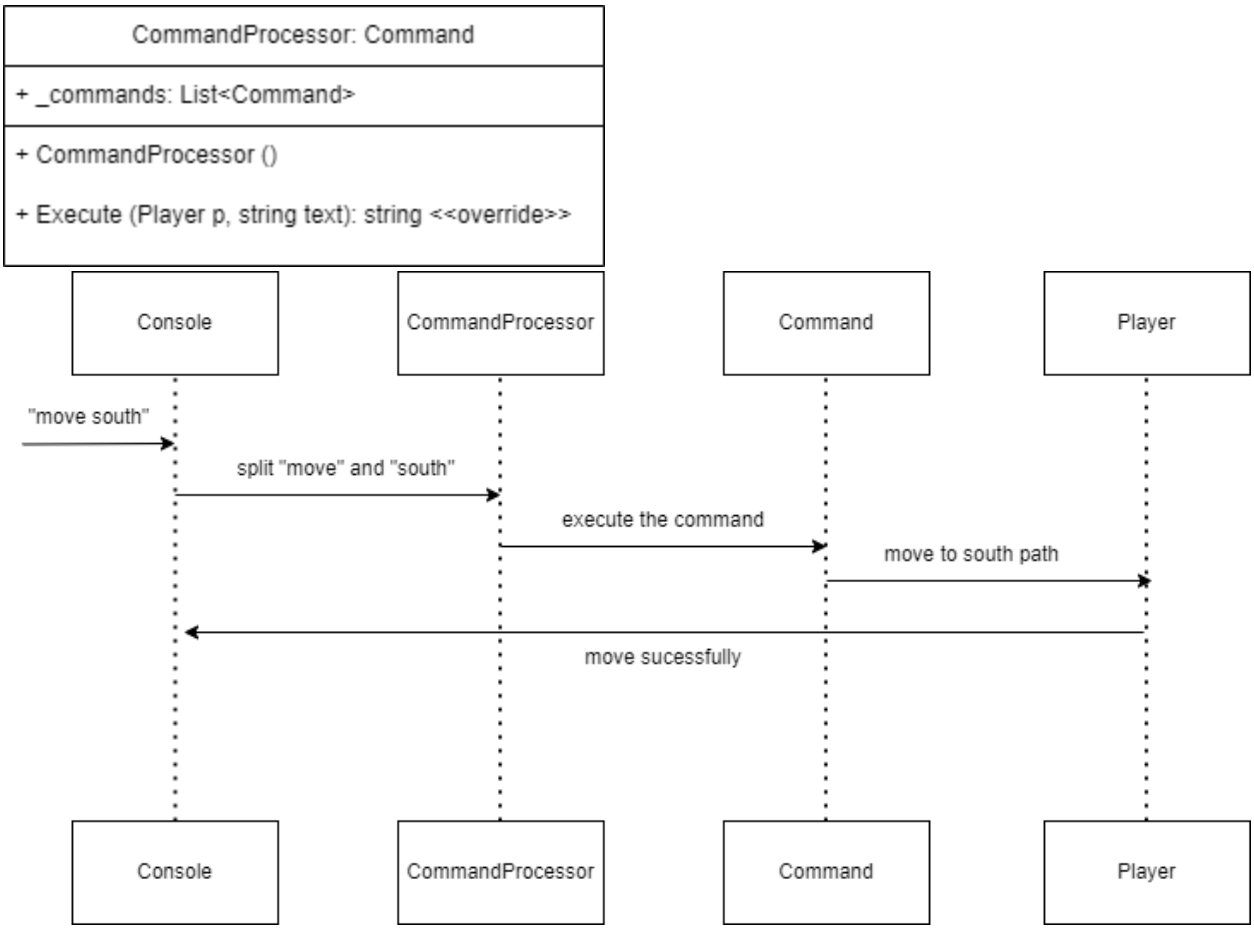
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Iteration8
{
    [TestFixture]
    public class TestItem
    {
        Item shield;

        [SetUp]
        public void SetUp()
        {
            shield = new Item(["shield"], "gold shield", "a gold shield that lasts a
lifetime");
```

```
        }
        [Test]
        public void TestItemIdentifiable()
        {
            Assert.That(shield.AreYou("shield"), Is.True, "True");
            Assert.That(shield.AreYou("sword"), Is.False, "True");
        }

        [Test]
        public void TestShortDesc()
        {
            Assert.That(shield.ShortDescription, Is.EqualTo("a gold shield
(shield)"));
        }

        [Test]
        public void TestFullDesc()
        {
            Assert.That(shield.FullDescription, Is.EqualTo("a gold shield that lasts
a lifetime"));

        }

    }
}
IdentifiableObjectTest.cs

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using NUnit.Framework;

namespace Iteration8
{
    [TestFixture]
    public class TestIdentifiableObject
    {

        [Test]
        public void TestAreYou()
        {
            string[] testArray = ["Fred", "Bob"];
            IdentifiableObject testIdentifiableObject = new(testArray);
            Assert.That(testIdentifiableObject.AreYou("fred"), Is.True);
        }

        [Test]
        public void TestNotAreYou()
        {
            string[] testArray = ["Fred", "Bob"];
            IdentifiableObject testIdentifiableObject = new(testArray);
            Assert.That(testIdentifiableObject.AreYou("wilma"), Is.False);
        }

        [Test]
        public void TestCaseSensitive()
```

```
        {
            string[] testArray = ["Fred", "Bob"];
            IdentifiableObject testIdentifiableObject = new(testArray);
            Assert.That(testIdentifiableObject.AreYou("bOB"), Is.True);
        }

        [Test]
        public void TestFirstID()
        {
            string[] testArray = ["Fred", "Bob"];
            IdentifiableObject testIdentifiableObject = new(testArray);
            StringAssert.AreEqualIgnoringCase("fred",
testIdentifiableObject.FirstID);
        }

        [Test]
        public void TestFirstIDWithNoIDs()
        {
            string[] testArray = [];
            IdentifiableObject testIdentifableObject = new(testArray);
            StringAssert.AreEqualIgnoringCase("", testIdentifableObject.FirstID);
        }

        [Test]
        public void TestAddID()
        {
            string[] testArray = ["Fred", "Bob"];
            IdentifiableObject testIdentifiableObject = new(testArray);
            testIdentifiableObject.AddIdentifier("Wilma");
            Assert.Multiple(() =>
            {
                Assert.That(testIdentifiableObject.AreYou("fred"), Is.True);
                Assert.That(testIdentifiableObject.AreYou("bob"), Is.True);
                Assert.That(testIdentifiableObject.AreYou("wilma"), Is.True);
            });
        }
    }
}
```


Test Explorer
43
43
0
Search (Ctrl+I)
Ready
0 Warnings
0 Errors
Test
Duration
Traits
Error Message
Iteration7Test (43) 115 ms
Iteration7 (43) 115 ms
LocationTest (3) 113 ms
MoveTest (5) 2 ms
PathTest (3) < 1 ms
TestBag (5) < 1 ms
TestIdentifiableObject (6) < 1 ms
TestInventory (5) < 1 ms
TestItem (3) < 1 ms
TestLook (8) < 1 ms
TestPlayer (5) < 1 ms
8°C
Partly cloudy
Search
ENG
US
6:42 AM
5/4/2024


Microsoft Visual Studio Debu
Press Q to Exit
What is your name?
minh
Hi minh, What is your occupation?
mage
You are minh, a mage. Welcome to PaboLand
Command:
move north
You have moved north through a door to large gamingroom, a room for relaxation.
Items available:
a new monitor (monitor)
a public computer (computer)
Paths that you can go to:
south
Command:
move south
You have moved south through a door to private bedroom, a room for private stuff.
Items available:
Paths that you can go to:
north
down
Command:
q
C:\Users\nguye\OneDrive\Máy tính\sem1 2024\cos20007\week9\Iteration 7\Iteration7\bin\Debug\net8.0\Iteration7.exe (process 18980) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
15°C
Partly sunny
Search
ENG
US
2:51 PM
5/4/2024


CommandProcessor: Command
+ _commands: List<Command>
+ CommandProcessor ()
+ Execute (Player p, string text): string <<override>>
Console
CommandProcessor
Command
Player
"move south"
split "move" and "south"
execute the command
move to south path
move sucessfully
Console
CommandProcessor
Command
Player