Lab-05

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**Adapter**

**Design Pattern**

**Chemical Bank :**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace AdapterPattern

{

class ChemicalBank

{ // This class represents our legacy system==> old chemicals database

public float GetBoilingPoint(String chemical)

{

switch (chemical.ToLower()) {

case "water": return 100.0f;

case "benzene": return 5.5f;

case "ethanol": return -114.1f;

default: return 0.0f;

}

}

public String GetMolecularFormulae(String chemical)

{

switch(chemical.ToLower())

{

case "water": return "H2O";

case "benzene": return "C6H6";

case "ethanol": return "C2H5OH";

default: return "un-identified";

}

}

}

}

Compound:

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace AdapterPattern

{

// this class is out Target class ,also base class with which the user will interact

// which in turn interact with adapter ==> RichCompound which will interact with adaptee==> ChemicalBank

internal class Compound

{

protected String chemicalName;

protected float boilingPoint;

protected String molecularFormulae;

public Compound(String chemicalName)

{

this.chemicalName = chemicalName;

}

public virtual void Display()

{

Console.WriteLine("-------------------------------------------");

Console.WriteLine("Chemical Name : \t{0}", chemicalName.ToUpper());

Console.WriteLine("-------------------------------------------");

}

}

}

**RichCompound :**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace AdapterPattern

{

// this class act as an adapter to get data from our legacy system ==> ChemicalBank

class RichCompound:Compound

{

private ChemicalBank bank=new ChemicalBank();

public RichCompound(String chemicalName):base(chemicalName)

{

}

public override void Display()

{

boilingPoint = bank.GetBoilingPoint(chemicalName);

molecularFormulae=bank.GetMolecularFormulae(chemicalName);

base.Display();

Console.WriteLine("Boiling Point :\t {0} ",boilingPoint);

Console.WriteLine("Molecular Formulae :\t {0} ", molecularFormulae);

Console.WriteLine();

Console.WriteLine();

}

}

}

**Main :**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace AdapterPattern

{

internal class Program

{

static void Main(string[] args)

{

RichCompound water = new RichCompound("Water");

water.Display();

RichCompound benzene = new RichCompound("Benzene");

benzene.Display();

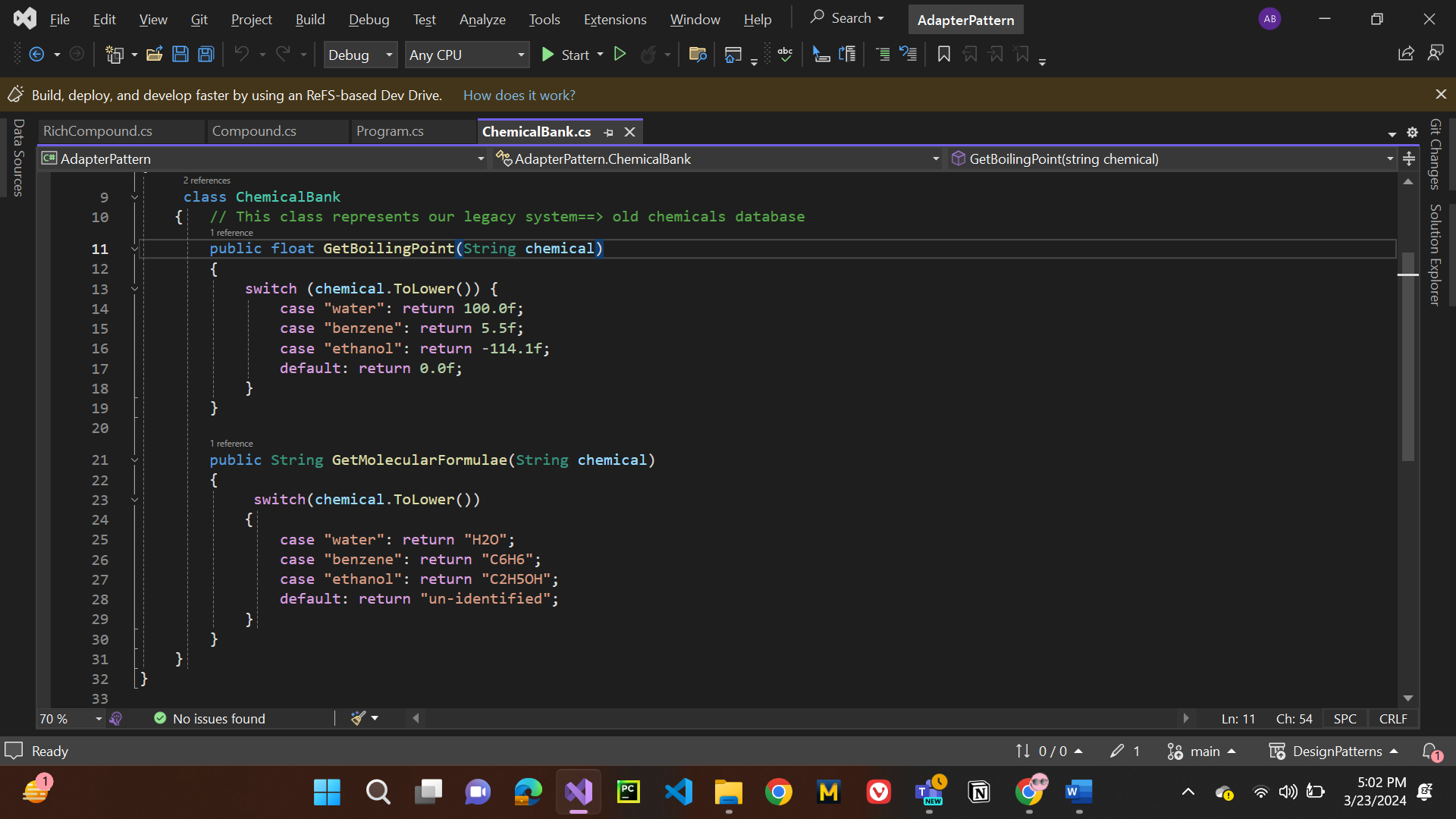
RichCompound ethanol = new RichCompound("Ethanol");

ethanol.Display();

}

}

}



A screenshot of a computer program

Description automatically generated

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