**Sales.cs**

using System;

namespace SemesterTest

{

public class Sales

{

private List<Thing> \_orders;

public Sales()

{

\_orders = new List<Thing> ();

}

public void Add(Thing thing)

{

\_orders.Add(thing);

}

public void PrintOrders()

{

Console.WriteLine("Sales: ");

Console.WriteLine();

decimal total = 0;

foreach (Thing order in \_orders)

{

order.Print();

Console.WriteLine("Total: " + "$" + order.Total());

total += order.Total();

}

Console.WriteLine("Sales total: " + "$" + total.ToString());

}

}

}

**Batch.cs**

using System;

namespace SemesterTest

{

public class Batch : Thing

{

private List<Thing> \_items;

public Batch(string number, string name) : base(number, name)

{

\_items = new List<Thing>();

}

public void Add(Thing thing)

{

\_items.Add(thing);

}

public override void Print()

{

Console.WriteLine("Batch sale: " + "#" + Number + ", " + Name);

Console.WriteLine();

if (\_items.Count > 0 )

{

foreach (Thing item in \_items)

{

item.Print();

}

}

else

{

Console.WriteLine("Empty order.");

}

}

public override decimal Total()

{

decimal total = 0;

foreach (Thing item in \_items)

{

total += item.Total();

}

return total;

}

}

}

**Thing.cs**

using System;

namespace SemesterTest

{

public abstract class Thing(string number, string name)

{

private string \_number = number;

private string \_name = name;

public abstract void Print();

public abstract decimal Total();

public string Number

{

get

{

return \_number;

}

}

public string Name

{

get

{

return \_name;

}

}

}

}

**Transaction.cs**

using System;

namespace SemesterTest

{

public class Transaction : Thing

{

private decimal \_amount;

public Transaction(string number, string name, decimal amount) : base(number, name)

{

\_amount = amount;

}

public override void Print()

{

Console.WriteLine("Transaction: " + "#" + Number + ", " + Name + ", " + "$" + \_amount);

Console.WriteLine();

}

public override decimal Total()

{

return \_amount;

}

}

}

**Program.cs**

using System;

namespace SemesterTest

{

internal class Program

{

public static void Main(string[] args)

{

Sales sales = new Sales();

Batch batch1 = new Batch("2024x01", "Computer Science Books");

batch1.Add(new Transaction("1", "Introduction to Algorithm", 77.90m));

batch1.Add(new Transaction("2", "The Pragmatic Programmer", 64.20m));

batch1.Add(new Transaction("3", "Data Science for Business", 150.75m));

Transaction transaction1 = new Transaction("01-01", "How The Steel Was Tempered", 204.60m);

Transaction transaction2 = new Transaction("03-01", "Gone with the Wind", 70.30m);

Batch batch2 = new Batch("2024x02", "Novels");

batch2.Add(new Transaction("02-02", "The Lords of the Rings", 80m));

batch2.Add(new Transaction("02-03", "A Song of Fire and Ice", 75m));

Batch batch3 = new Batch("2024x012", "A Nested Batch");

batch3.Add(batch1);

batch3.Add(batch2);

sales.Add(batch3);

Batch batch4 = new Batch("2024x04", "Comics");

sales.Add(transaction1);

sales.Add(transaction2);

sales.Add(batch4);

sales.PrintOrders();

}

}

}

