# Schritt 1:

using System;

namespace BubbleSortExample

{

public class BubbleSort

{

public void Sort(int[] array)

{

int n = array.Length;

for (int i = 0; i < n - 1; i++)

{

for (int j = 0; j < n - i - 1; j++)

{

if (array[j] > array[j + 1])

{

// Tauschen der Elemente

int temp = array[j];

array[j] = array[j + 1];

array[j + 1] = temp;

}

}

}

}

}

}

# Schritt 2:

namespace BubbleSortExample

{

class Program

{

static void Main(string[] args)

{

int[] numbers = { 64, 34, 25, 12, 22, 11, 90 };

BubbleSort bubbleSort = new BubbleSort();

Console.WriteLine("Unsortierte Liste:");

PrintArray(numbers);

bubbleSort.Sort(numbers);

Console.WriteLine("\nSortierte Liste:");

PrintArray(numbers);

}

static void PrintArray(int[] array)

{

foreach (var item in array)

{

Console.Write(item + " ");

}

Console.WriteLine();

}

}

}

# Schritt 3

using System;

using System.Collections.Generic;

namespace BubbleSortExample

{

public class Person

{

public string Name { get; set; }

public int Age { get; set; }

public Person(string name, int age)

{

Name = name;

Age = age;

}

public override string ToString()

{

return $"{Name}, {Age} Jahre";

}

}

public class BubbleSort

{

public void Sort(int[] array)

{

int n = array.Length;

for (int i = 0; i < n - 1; i++)

{

for (int j = 0; j < n - i - 1; j++)

{

if (array[j] > array[j + 1])

{

int temp = array[j];

array[j] = array[j + 1];

array[j + 1] = temp;

}

}

}

}

public void Sort(List<Person> people)

{

int n = people.Count;

for (int i = 0; i < n - 1; i++)

{

for (int j = 0; j < n - i - 1; j++)

{

if (people[j].Age > people[j + 1].Age)

{

Person temp = people[j];

people[j] = people[j + 1];

people[j + 1] = temp;

}

}

}

}

}

class Program

{

static void Main(string[] args)

{

// Teil 1: Sortieren von ganzen Zahlen

int[] numbers = { 64, 34, 25, 12, 22, 11, 90 };

BubbleSort bubbleSort = new BubbleSort();

Console.WriteLine("Unsortierte Liste:");

PrintArray(numbers);

bubbleSort.Sort(numbers);

Console.WriteLine("\nSortierte Liste:");

PrintArray(numbers);

// Teil 2: Sortieren von benutzerdefinierten Objekten

List<Person> people = new List<Person>

{

new Person("Alice", 34),

new Person("Bob", 23),

new Person("Charlie", 40),

new Person("David", 29)

};

Console.WriteLine("\nUnsortierte Personenliste:");

PrintList(people);

bubbleSort.Sort(people);

Console.WriteLine("\nSortierte Personenliste nach Alter:");

PrintList(people);

}

static void PrintArray(int[] array)

{

foreach (var item in array)

{

Console.Write(item + " ");

}

Console.WriteLine();

}

static void PrintList(List<Person> list)

{

foreach (var person in list)

{

Console.WriteLine(person);

}

}

}

}

# Schritt 4

```csharp

using System;

using System.Collections.Generic;

namespace BubbleSortExample

{

public class Person

{

public string Name { get; set; }

public int Age { get; set; }

public Person(string name, int age)

{

Name = name;

Age = age;

}

public override string ToString()

{

return $"{Name}, {Age} Jahre";

}

}

public class BubbleSort

{

public void Sort(int[] array)

{

int n = array.Length;

for (int i = 0; i < n - 1; i++)

{

for (int j = 0; j < n - i - 1; j++)

{

if (array[j] > array[j + 1])

{

int temp = array[j];

array[j] = array[j + 1];

array[j + 1] = temp;

// Visualisierung der Sortierung

Console.WriteLine($"Tausche {array[j]} und {array[j + 1]}:");

PrintArray(array);

}

}

}

}

public void Sort(List<Person> people)

{

int n = people.Count;

for (int i = 0; i < n - 1; i++)

{

for (int j = 0; j < n - i - 1; j++)

{

if (people[j].Age > people[j + 1].Age)

{

Person temp = people[j];

people[j] = people[j + 1];

people[j + 1] = temp;

// Visualisierung der Sortierung

Console.WriteLine($"Tausche {people[j].Name} und {people[j + 1].Name}:");

PrintList(people);

}

}

}

}

}

class Program

{

static void Main(string[] args)

{

// Teil 1: Sortieren von ganzen Zahlen

int[] numbers = { 64, 34, 25, 12, 22, 11, 90 };

BubbleSort bubbleSort = new BubbleSort();

Console.WriteLine("Unsortierte Liste:");

PrintArray(numbers);

bubbleSort.Sort(numbers);

Console.WriteLine("\nSortierte Liste:");

PrintArray(numbers);

// Teil 2: Sortieren von benutzerdefinierten Objekten

List<Person> people = new List<Person>

{

new Person("Alice", 34),

new Person("Bob", 23),

new Person("Charlie", 40),

new Person("David", 29)

};

Console.WriteLine("\nUnsortierte Personenliste:");

PrintList(people);

bubbleSort.Sort(people);

Console.WriteLine("\nSortierte Personenliste nach Alter:");

PrintList(people);

}

static void PrintArray(int[] array)

{

foreach (var item in array)

{

Console.Write(item + " ");

}

Console.WriteLine();

}

static void PrintList(List<Person> list)

{

foreach (var person in list)

{

Console.WriteLine(person);

}

}

}

}

```