# Container Object

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace X04\_MyContainer\_object

{

public class MyContainer

{

private object[] \_theObjects;

private int \_n;

public MyContainer()

{

\_theObjects = new object[2];

\_n = 0;

}

public void Add(object o)

{

// If necessary, grow the array

if (\_n == \_theObjects.Length)

{

object[] oldArray = \_theObjects;

\_theObjects = new object[2 \* oldArray.Length];

Array.Copy(oldArray, \_theObjects, \_n);

}

\_theObjects[\_n] = o;

\_n++;

}

public object GetAt(int i)

{

return \_theObjects[i];

}

public int Count

{

get { return \_n; }

}

}

class Program

{

static void Main(string[] args)

{

MyContainer container = new MyContainer();

container.Add(3);

container.Add(2);

container.Add(8);

container.Add(8);

container.Add(4);

for (int i = 0; i < container.Count; i++)

{

Console.WriteLine($"Element at {i}: {container.GetAt(i)}");

}

Console.ReadKey();

}

}

}

# Container Generic

using System;

using System.Collections;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace X04\_MyContainer\_generic

{

public class MyContainer<T> : IEnumerable<T>

{

private T[] \_theObjects;

private int \_n;

public MyContainer()

{

\_theObjects = new T[2];

\_n = 0;

}

public void Add(T o)

{

// If necessary, grow the array

if (\_n == \_theObjects.Length)

{

T[] oldArray = \_theObjects;

\_theObjects = new T[2 \* oldArray.Length];

Array.Copy(oldArray, \_theObjects, \_n);

}

\_theObjects[\_n] = o;

\_n++;

}

public T GetAt(int i)

{

return \_theObjects[i];

}

public int Count

{

get { return \_n; }

}

public IEnumerator<T> GetEnumerator()

{

for (int i = 0; i < \_n; i++)

{

yield return \_theObjects[i];

}

}

IEnumerator IEnumerable.GetEnumerator()

{

return GetEnumerator();

}

}

class Program

{

static void Main(string[] args)

{

MyContainer<int> container = new MyContainer<int>();

container.Add(3);

container.Add(2);

container.Add(8);

container.Add(8);

container.Add(4);

for (int i = 0; i < container.Count; i++)

{

Console.WriteLine($"Element at {i}: {container.GetAt(i)}");

}

Console.ReadKey();

}

}

}