STRATEGY

Design Pattern

INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD

Report

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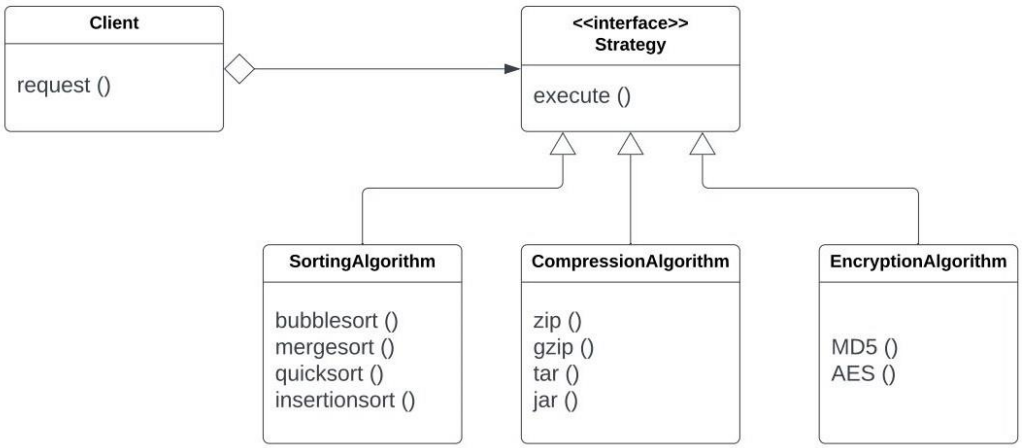
Course Code: SE322

Course Title: Software Design and Architecture

Submitted to: Dr. Muhammad Nasir

Class Diagram:



The strategy pattern defines a family of related algorithms, e.g., sorting algorithms like the bubble sort, quicksort, insertion sort and merge sort, or compression algorithm like zip, gzip, tar, jar, encryption algorithm e.g. MD 5, AES, etc and lets the algorithm vary independently from clients that use it. You can implement the strategy design pattern as couple of related sorting algorithms.

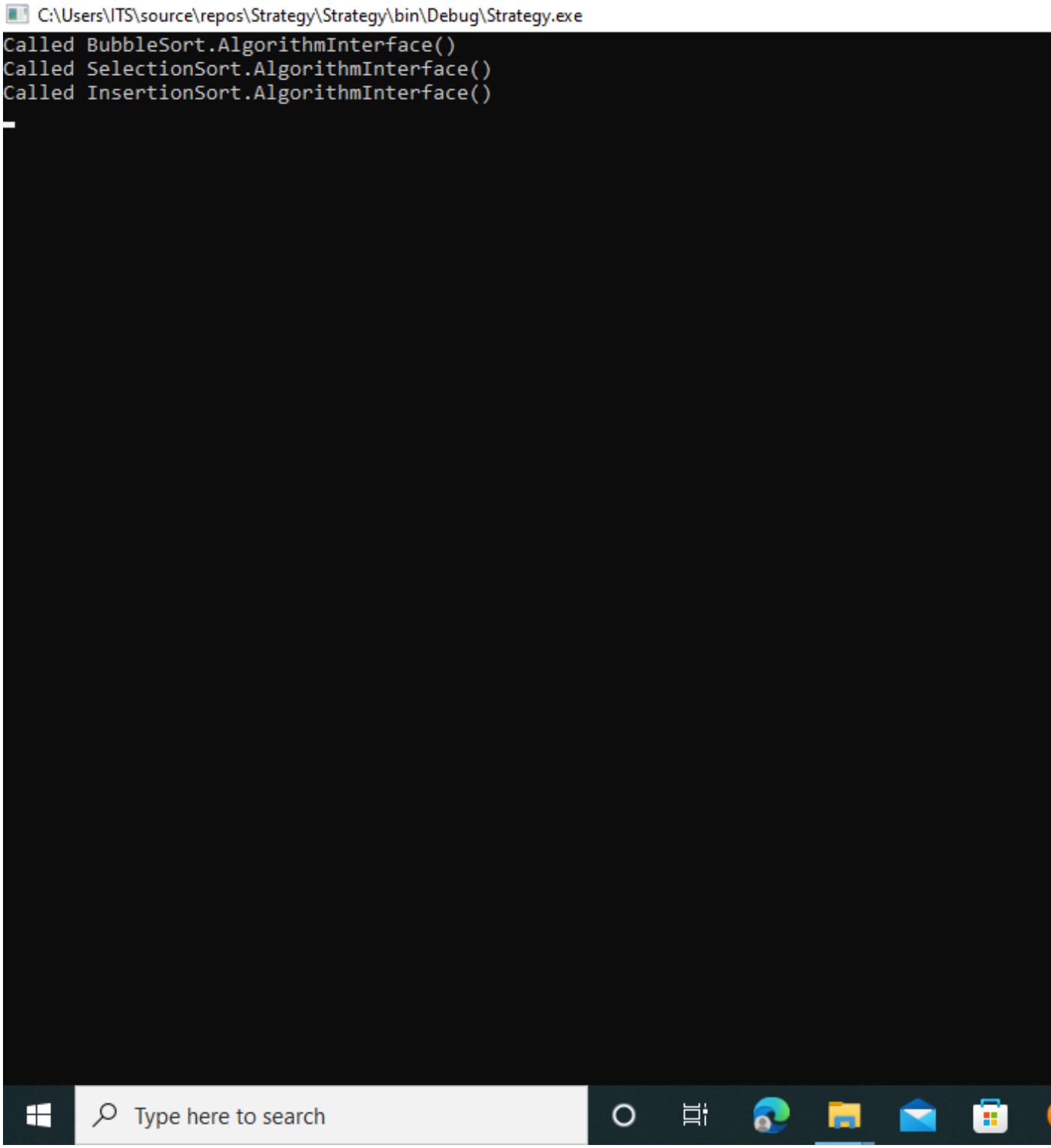
Source Code:

```
using System;

namespace Sorting

{

   public class Program

   {

      public static void Main(string[] args)

      {

         Context context;
```

```
        context = new Context(new BubbleSort());
        context.ContextInterface();
        context = new Context(new SelectionSort());
        context.ContextInterface();
        context = new Context(new InsertionSort());
        context.ContextInterface() ;
    }
}
public abstract class Sorting
{
    public abstract void AlgorithmInterface();
}
public class BubbleSort : Sorting
{
    public override void AlgorithmInterface()
    {
        Console.WriteLine("Called BubbleSort.AlgorithmInterface()");
    }
}
public class SelectionSort : Sorting
{
    public override void AlgorithmInterface()
    {
        Console.WriteLine("Called SelectionSort.AlgorithmInterface()");
    }
}
public class InsertionSort : Sorting
{
    public override void AlgorithmInterface()
    {
        Console.WriteLine("Called InsertionSort.AlgorithmInterface()");
```

```
        }
    }
    public class Context
    {
        Sorting sorting;
        public Context(Sorting sorting)
        {
            this.sorting = sorting;
        }
        public void ContextInterface()
        {
            sorting.AlgorithmInterface();
        }
    }
}
```

Output:


C:\Users\ITS\source\repos\Strategy\Strategy\bin\Debug\Strategy.exe
Called BubbleSort.AlgorithmInterface()
Called SelectionSort.AlgorithmInterface()
Called InsertionSort.AlgorithmInterface()
Type here to search