

# CE100 Algorithms and Programming II HW2

v1.0.0

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# Chapter 1

## ce100 - Homework 2

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### REQUIRMENTS

-Visual Studio 2022

-Git Extensions

-Git Bash

-WebSite: <https://ucoruh.github.io/ce100-algorithms-and-programming-II/>

### RUNNING

Functions run via Visual Studio 2022.

### TESTING

Functions unit tested for all functionality (best case, average case and worst case) via Visual Studio 2022.



## Chapter 2

# Namespace Index

### 2.1 Namespace List

Here is a list of all namespaces with brief descriptions:

<a href="#">ce100_hw2_algo_lib_cs</a>	.....	9
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## Chapter 3

# Data Structure Index

### 3.1 Data Structures

Here are the data structures with brief descriptions:

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## Chapter 4

# File Index

### 4.1 File List

Here is a list of all files with brief descriptions:

C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-lib-cs/ <a href="#">Class1.cs</a>	
<a href="#">29</a>	
C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-lib-cs/obj/↔ Debug/.NETFramework,Version=v4.8.AssemblyAttributes.cs . . . . .	30
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C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test- cs/obj/Debug/net7.0/.NETCoreApp,Version=v7.0.AssemblyAttributes.cs . . . . .	30
C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test- cs/obj/Debug/net7.0/ce100-hw2-algo-test-cs.AssemblyInfo.cs . . . . .	30
C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test- cs/obj/Debug/net7.0/ce100-hw2-algo-test-cs.GlobalUsings.g.cs . . . . .	30



## Chapter 5

# Namespace Documentation

### 5.1 ce100\_hw2\_algo\_lib\_cs Namespace Reference

#### Data Structures

- class [HeapSortAlgorithm](#)
- class [LongestCommonSubsequence](#)
- class [MatrixChainMultiplicationDP](#)
- class [MatrixChainMultiplicationMemorizedRec](#)
- class [TheKnapsackProblem](#)

### 5.2 ce100\_hw2\_algo\_test\_cs Namespace Reference

#### Data Structures

- class [HeapSortAlgorithmTests](#)
- class [LongestCommonSubsequenceTests](#)
- class [MatrixChainMultiplicationDPTests](#)
- class [MatrixChainMultiplicationMemorizedRecTests](#)
- class [TheKnapsackProblemTests](#)



## Chapter 6

# Data Structure Documentation

### 6.1 ce100\_hw2\_algo\_lib\_cs.HeapSortAlgorithm Class Reference

#### Static Public Member Functions

- static int [HeapSort](#) (int[] inputArray, ref int[] outputArray, bool enableDebug=false)  
*Sorts an array of integers using the Heap Sort algorithm.*

#### Static Private Member Functions

- static void [MaxHeapify](#) (int[] arr, int i, int n, bool enableDebug)  
*Persists the max-heap property of the input array.*

#### 6.1.1 Member Function Documentation

##### 6.1.1.1 HeapSort()

```
static int ce100_hw2_algo_lib_cs.HeapSortAlgorithm.HeapSort (  
    int[] inputArray,  
    ref int[] outputArray,  
    bool enableDebug = false ) [inline], [static]
```

Sorts an array of integers using the Heap Sort algorithm.

#### Parameters

<i>inputArray</i>	The input integer array to be sorted.
<i>outputArray</i>	Output integer array will contain sorted items.
<i>enableDebug</i>	If true, debug info will be printed to the console.

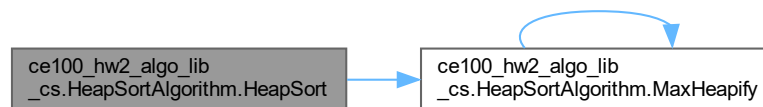
**Returns**

Returns 0 upon sorting is completed successfully.

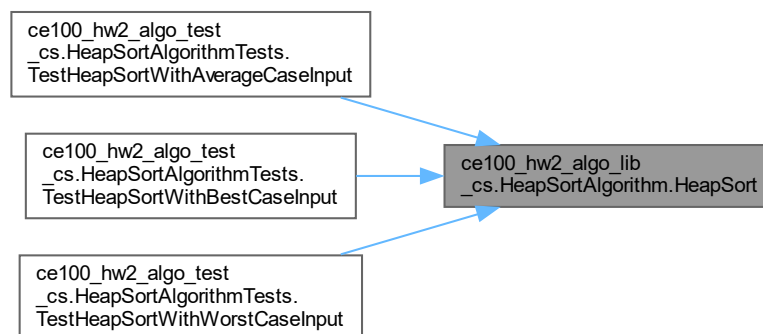
References [ce100\\_hw2\\_algo\\_lib\\_cs.HeapSortAlgorithm.MaxHeapify\(\)](#).

Referenced by [ce100\\_hw2\\_algo\\_test\\_cs.HeapSortAlgorithmTests.TestHeapSortWithAverageCaseInput\(\)](#), [ce100\\_hw2\\_algo\\_test\\_cs.TestHeapSortWithBestCaseInput\(\)](#) and [ce100\\_hw2\\_algo\\_test\\_cs.HeapSortAlgorithmTests.TestHeapSortWithWorstCaseInput\(\)](#).

Here is the call graph for this function:



Here is the caller graph for this function:

**6.1.1.2 MaxHeapify()**

```

static void ce100_hw2_algo_lib_cs.HeapSortAlgorithm.MaxHeapify (
    int[] arr,
    int i,
    int n,
    bool enableDebug ) [inline], [static], [private]
  
```

Persists the max-heap property of the input array.



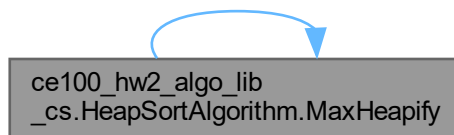
## Parameters

<i>arr</i>	The input integer array which needs to persist the max-heap property.
<i>i</i>	The root index of the subtree.
<i>n</i>	The size of the heap.
<i>enableDebug</i>	If true, debug info will be printed to the console.

References [ce100\\_hw2\\_algo\\_lib\\_cs.HeapSortAlgorithm.MaxHeapify\(\)](#).

Referenced by [ce100\\_hw2\\_algo\\_lib\\_cs.HeapSortAlgorithm.HeapSort\(\)](#), and [ce100\\_hw2\\_algo\\_lib\\_cs.HeapSortAlgorithm.MaxHeapify\(\)](#).

Here is the call graph for this function:



Here is the caller graph for this function:



The documentation for this class was generated from the following file:

- `C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-lib-cs/Class1.cs`

## 6.2 ce100\_hw2\_algo\_test\_cs.HeapSortAlgorithmTests Class Reference

### Public Member Functions

- void [TestHeapSortWithBestCaseInput](#) ()
- void [TestHeapSortWithWorstCaseInput](#) ()
- void [TestHeapSortWithAverageCaseInput](#) ()

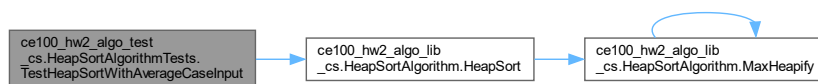
## 6.2.1 Member Function Documentation

### 6.2.1.1 TestHeapSortWithAverageCaseInput()

```
void ce100_hw2_algo_test_cs.HeapSortAlgorithmTests.TestHeapSortWithAverageCaseInput ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.HeapSortAlgorithm.HeapSort\(\)](#).

Here is the call graph for this function:

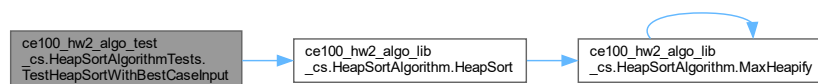


### 6.2.1.2 TestHeapSortWithBestCaseInput()

```
void ce100_hw2_algo_test_cs.HeapSortAlgorithmTests.TestHeapSortWithBestCaseInput ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.HeapSortAlgorithm.HeapSort\(\)](#).

Here is the call graph for this function:

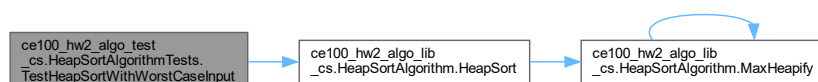


### 6.2.1.3 TestHeapSortWithWorstCaseInput()

```
void ce100_hw2_algo_test_cs.HeapSortAlgorithmTests.TestHeapSortWithWorstCaseInput ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.HeapSortAlgorithm.HeapSort\(\)](#).

Here is the call graph for this function:



The documentation for this class was generated from the following file:

- C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/[UnitTest1.cs](#)

## 6.3 ce100\_hw2\_algo\_lib\_cs.LongestCommonSubsequence Class Reference

### Static Public Member Functions

- static int [Lcs](#) (string inputArray1, string inputArray2, out string outputLcs, out int outputLcslength, bool enableDebug=false)

*Finds the LCS of two input strings.*

### 6.3.1 Member Function Documentation

#### 6.3.1.1 Lcs()

```
static int ce100_hw2_algo_lib_cs.LongestCommonSubsequence.Lcs (  
    string inputArray1,  
    string inputArray2,  
    out string outputLcs,  
    out int outputLcslength,  
    bool enableDebug = false ) [inline], [static]
```

Finds the LCS of two input strings.

#### Parameters

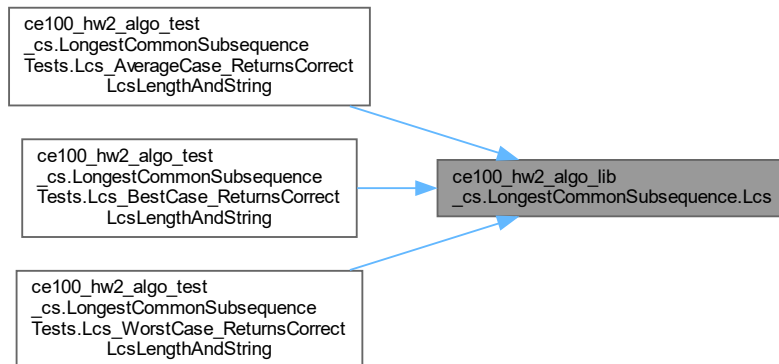
<i>inputArray1</i>	The first input string.
<i>inputArray2</i>	The second input string.
<i>outputLcs</i>	The output LCS string.
<i>outputLcslength</i>	The length of the output LCS.
<i>enableDebug</i>	Flag to enable debug logging.

#### Returns

Every time returns 0.

Referenced by [ce100\\_hw2\\_algo\\_test\\_cs.LongestCommonSubsequenceTests.Lcs\\_AverageCase\\_ReturnsCorrectLcsLengthAndString\(\)](#), [ce100\\_hw2\\_algo\\_test\\_cs.LongestCommonSubsequenceTests.Lcs\\_BestCase\\_ReturnsCorrectLcsLengthAndString\(\)](#), and [ce100\\_hw2\\_algo\\_test\\_cs.LongestCommonSubsequenceTests.Lcs\\_WorstCase\\_ReturnsCorrectLcsLengthAndString\(\)](#).

Here is the caller graph for this function:



The documentation for this class was generated from the following file:

- C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-lib-cs/[Class1.cs](#)

## 6.4 ce100\_hw2\_algo\_test\_cs.LongestCommonSubsequenceTests Class Reference

### Public Member Functions

- void [Lcs\\_BestCase\\_ReturnsCorrectLcsLengthAndString](#) ()
- void [Lcs\\_WorstCase\\_ReturnsCorrectLcsLengthAndString](#) ()
- void [Lcs\\_AverageCase\\_ReturnsCorrectLcsLengthAndString](#) ()

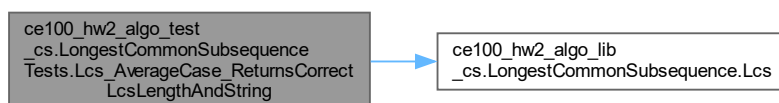
### 6.4.1 Member Function Documentation

#### 6.4.1.1 Lcs\_AverageCase\_ReturnsCorrectLcsLengthAndString()

```
void ce100_hw2_algo_test_cs.LongestCommonSubsequenceTests.Lcs_AverageCase_ReturnsCorrectLcsLengthAndString ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.LongestCommonSubsequence.Lcs\(\)](#).

Here is the call graph for this function:

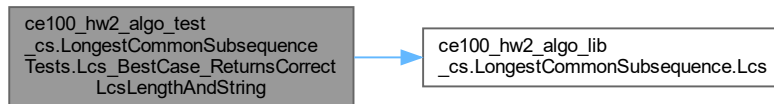


#### 6.4.1.2 Lcs\_BestCase\_ReturnsCorrectLcsLengthAndString()

```
void ce100_hw2_algo_test_cs.LongestCommonSubsequenceTests.Lcs_BestCase_ReturnsCorrectLcsLengthAndString ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.LongestCommonSubsequence.Lcs\(\)](#).

Here is the call graph for this function:

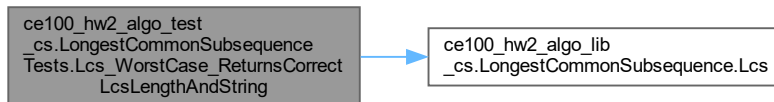


#### 6.4.1.3 Lcs\_WorstCase\_ReturnsCorrectLcsLengthAndString()

```
void ce100_hw2_algo_test_cs.LongestCommonSubsequenceTests.Lcs_WorstCase_ReturnsCorrectLcsLengthAndString ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.LongestCommonSubsequence.Lcs\(\)](#).

Here is the call graph for this function:



The documentation for this class was generated from the following file:

- `C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/UnitTest1.cs`

## 6.5 ce100\_hw2\_algo\_lib\_cs.MatrixChainMultiplicationDP Class Reference

### Static Public Member Functions

- static int [Mcmdp](#) (int[] matrixDimensionArray, ref string matrixOrder, ref int operationCount, bool enableDebug=false)  
*Calculates the minimum number of operations necessary to multiply a sequence of matrices using Dynamic Programming approach.*
- static string [BuildMatrixOrder](#) (int[,] s, int i, int j)  
*Recursively builds the matrix multiplication order from the split positions stored in the s array.*

## 6.5.1 Member Function Documentation

### 6.5.1.1 BuildMatrixOrder()

```
static string ce100_hw2_algo_lib_cs.MatrixChainMultiplicationDP.BuildMatrixOrder (
    int s[, ],
    int i,
    int j ) [inline], [static]
```

Recursively builds the matrix multiplication order from the split positions stored in the s array.

#### Parameters

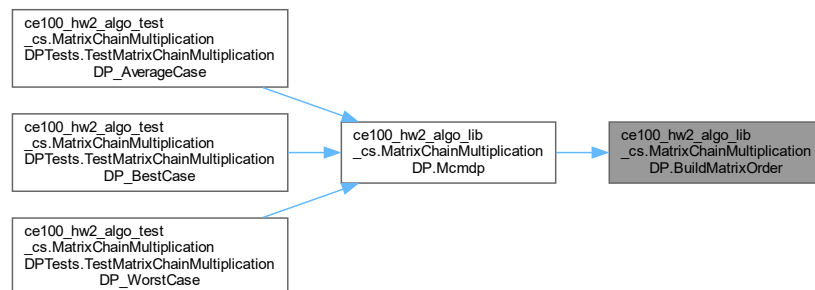
<i>s</i>	A two-dimensional array containing the split positions.
<i>i</i>	The start index of the sequence of matrices.
<i>j</i>	The end index of the sequence of matrices.

#### Returns

The matrix multiplication order as a string.

Referenced by [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationDP.Mcmdp\(\)](#).

Here is the caller graph for this function:



### 6.5.1.2 Mcmdp()

```
static int ce100_hw2_algo_lib_cs.MatrixChainMultiplicationDP.Mcmdp (
    int[] matrixDimensionArray,
    ref string matrixOrder,
    ref int operationCount,
    bool enableDebug = false ) [inline], [static]
```

Calculates the minimum number of operations necessary to multiply a sequence of matrices using Dynamic Programming approach.

## Parameters

<i>matrixDimensionArray</i>	An integer array containing the dimensions of the matrices to be multiplied.
<i>matrixOrder</i>	A reference parameter to store the order of multiplication of the matrices.
<i>operationCount</i>	A reference parameter to store the total number of operations necessary for multiplication.
<i>enableDebug</i>	A boolean flag to enable/disable debug mode.

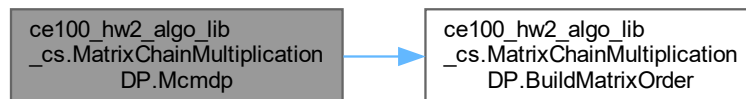
## Returns

The minimum number of operations necessary for multiplication.

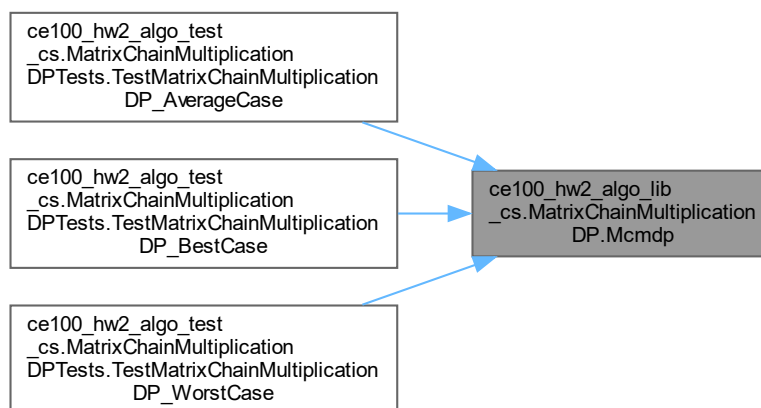
References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationDP.BuildMatrixOrder\(\)](#).

Referenced by [ce100\\_hw2\\_algo\\_test\\_cs.MatrixChainMultiplicationDPTests.TestMatrixChainMultiplicationDP\\_AverageCase\(\)](#), [ce100\\_hw2\\_algo\\_test\\_cs.MatrixChainMultiplicationDPTests.TestMatrixChainMultiplicationDP\\_BestCase\(\)](#), and [ce100\\_hw2\\_algo\\_test\\_cs.MatrixChainMultiplicationDPTests.TestMatrixChainMultiplicationDP\\_WorstCase\(\)](#).

Here is the call graph for this function:



Here is the caller graph for this function:



The documentation for this class was generated from the following file:

- [C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-lib-cs/Class1.cs](#)

## 6.6 ce100\_hw2\_algo\_test\_cs.MatrixChainMultiplicationDPTests Class Reference

### Public Member Functions

- void [TestMatrixChainMultiplicationDP\\_BestCase](#) ()
- void [TestMatrixChainMultiplicationDP\\_WorstCase](#) ()
- void [TestMatrixChainMultiplicationDP\\_AverageCase](#) ()

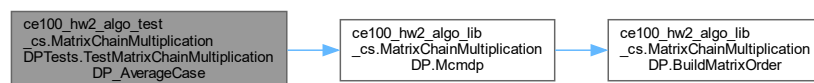
### 6.6.1 Member Function Documentation

#### 6.6.1.1 TestMatrixChainMultiplicationDP\_AverageCase()

```
void ce100_hw2_algo_test_cs.MatrixChainMultiplicationDPTests.TestMatrixChainMultiplicationDP↵
_AverageCase ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationDP.Mcmdp](#)().

Here is the call graph for this function:

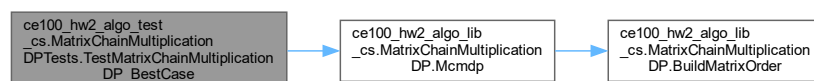


#### 6.6.1.2 TestMatrixChainMultiplicationDP\_BestCase()

```
void ce100_hw2_algo_test_cs.MatrixChainMultiplicationDPTests.TestMatrixChainMultiplicationDP↵
_BestCase ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationDP.Mcmdp](#)().

Here is the call graph for this function:



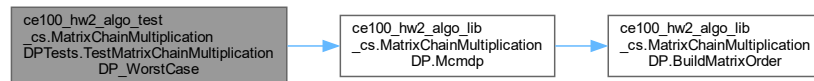


### 6.6.1.3 TestMatrixChainMultiplicationDP\_WorstCase()

```
void ce100_hw2_algo_test_cs.MatrixChainMultiplicationDPTests.TestMatrixChainMultiplicationDP←
_WorstCase ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationDP.Mcmdp\(\)](#).

Here is the call graph for this function:



The documentation for this class was generated from the following file:

- C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/[UnitTest1.cs](#)

## 6.7 ce100\_hw2\_algo\_lib\_cs.MatrixChainMultiplicationMemorizedRec Class Reference

### Static Public Member Functions

- static int [mcmrem](#) (int[] matrixDimensionArray, ref string matrixOrder, ref int operationCount)  
*Computes the minimum number of scalar multiplications necessary to multiply a given sequence of matrices. Uses memoization to optimize the recursive approach.*
- static int [mcmremHelper](#) (int[] p, int[,] S, int[,] M, int i, int j)  
*Helper function for mcmrem() to calculate the optimal number of scalar multiplications. Uses memoization to optimize the recursive approach.*
- static string [parenthesize](#) (int[,] S, int i, int j)

### 6.7.1 Member Function Documentation

#### 6.7.1.1 mcmrem()

```
static int ce100_hw2_algo_lib_cs.MatrixChainMultiplicationMemorizedRec.mcmrem (
    int[] matrixDimensionArray,
    ref string matrixOrder,
    ref int operationCount ) [inline], [static]
```

Computes the minimum number of scalar multiplications necessary to multiply a given sequence of matrices. Uses memoization to optimize the recursive approach.

## Parameters

<i>matrixDimensionArray</i>	Array containing the dimensions of the matrices.
<i>matrixOrder</i>	String containing the optimal order to multiply the matrices.
<i>operationCount</i>	Number of scalar multiplications necessary to multiply the matrices in the optimal order.

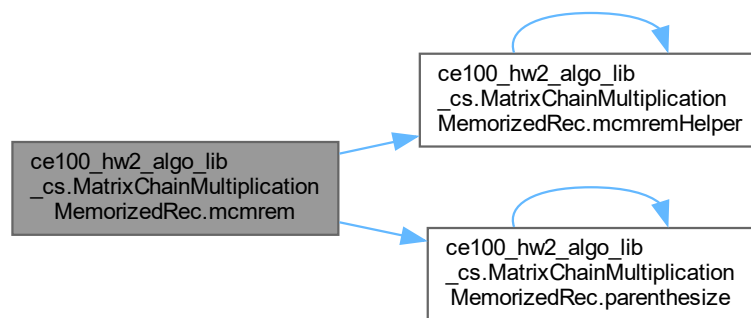
## Returns

0 if successful, -1 if failed.

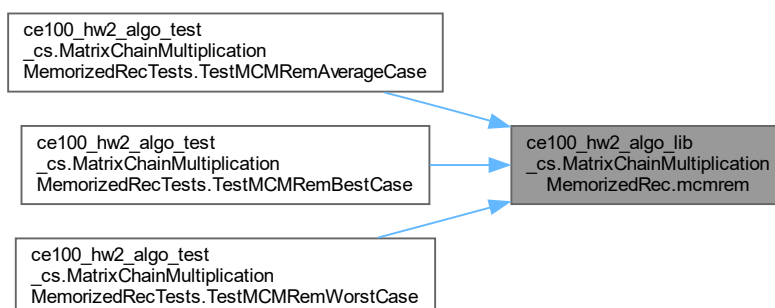
References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.mcmremHelper\(\)](#), and [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.parentthesize\(\)](#)

Referenced by [ce100\\_hw2\\_algo\\_test\\_cs.MatrixChainMultiplicationMemorizedRecTests.TestMCMRemAverageCase\(\)](#), [ce100\\_hw2\\_algo\\_test\\_cs.MatrixChainMultiplicationMemorizedRecTests.TestMCMRemBestCase\(\)](#), and [ce100\\_hw2\\_algo\\_test\\_cs.MatrixChainMultiplicationMemorizedRecTests.TestMCMRemWorstCase\(\)](#)

Here is the call graph for this function:



Here is the caller graph for this function:



## 6.7.1.2 mcmremHelper()

```
static int ce100_hw2_algo_lib_cs.MatrixChainMultiplicationMemorizedRec.mcmremHelper (
    int[] p,
    int S[],
    int M[],
    int i,
    int j ) [inline], [static]
```

Helper function for mcmrem() to calculate the optimal number of scalar multiplications. Uses memoization to optimize the recursive approach.

## Parameters

<i>p</i>	Array containing the dimensions of the matrices.
<i>S</i>	Array to store the optimal order to multiply the matrices.
<i>M</i>	Array to store the minimum number of scalar multiplications needed to multiply the matrices.
<i>i</i>	Starting index of the subsequence of matrices.
<i>j</i>	Ending index of the subsequence of matrices.

## Returns

The minimum number of scalar multiplications necessary to multiply the matrices in the given subsequence.

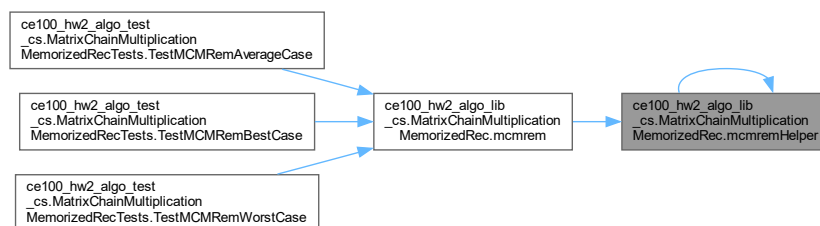
References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.mcmremHelper\(\)](#).

Referenced by [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.mcmrem\(\)](#), and [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.mcmremHelper\(\)](#).

Here is the call graph for this function:



Here is the caller graph for this function:



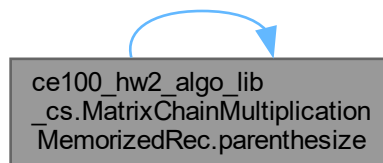
### 6.7.1.3 parenthesize()

```
static string ce100_hw2_algo_lib_cs.MatrixChainMultiplicationMemorizedRec.parenthesize (
    int S[, ],
    int i,
    int j ) [inline], [static]
```

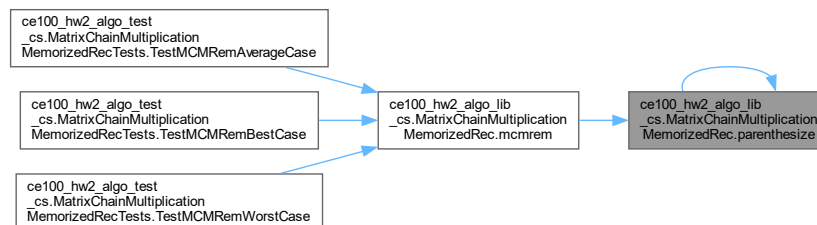
References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.parenthesize\(\)](#).

Referenced by [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.mcmrem\(\)](#), and [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.parenthesize\(\)](#).

Here is the call graph for this function:



Here is the caller graph for this function:



The documentation for this class was generated from the following file:

- [C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-lib-cs/Class1.cs](#)

## 6.8 ce100\_hw2\_algo\_test\_cs.MatrixChainMultiplicationMemorizedRec Tests Class Reference

### Public Member Functions

- void [TestMCMRemBestCase](#) ()
- void [TestMCMRemWorstCase](#) ()
- void [TestMCMRemAverageCase](#) ()

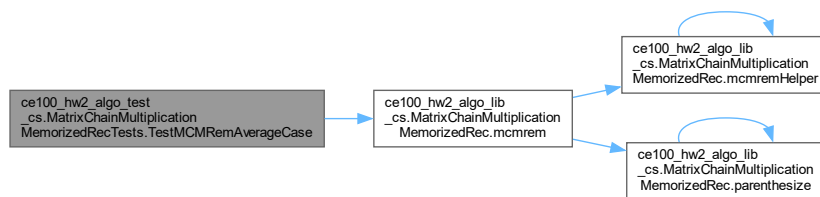
## 6.8.1 Member Function Documentation

### 6.8.1.1 TestMCMRemAverageCase()

```
void ce100_hw2_algo_test_cs.MatrixChainMultiplicationMemorizedRecTests.TestMCMRemAverageCase (
) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.mcmrem\(\)](#).

Here is the call graph for this function:

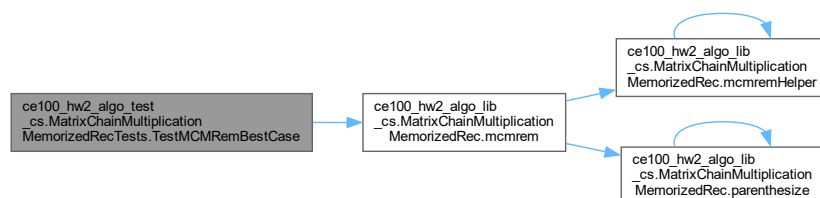


### 6.8.1.2 TestMCMRemBestCase()

```
void ce100_hw2_algo_test_cs.MatrixChainMultiplicationMemorizedRecTests.TestMCMRemBestCase ( )
[inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.mcmrem\(\)](#).

Here is the call graph for this function:

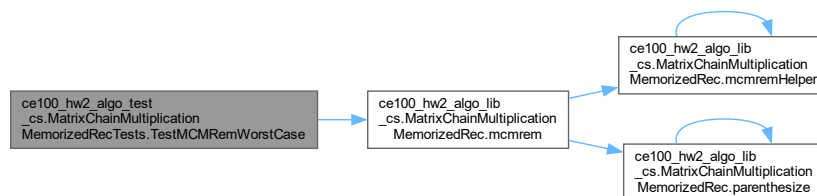


### 6.8.1.3 TestMCMRemWorstCase()

```
void ce100_hw2_algo_test_cs.MatrixChainMultiplicationMemorizedRecTests.TestMCMRemWorstCase ( )
[inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec.mcmrem\(\)](#).

Here is the call graph for this function:



The documentation for this class was generated from the following file:

- `C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/UnitTest1.cs`

## 6.9 ce100\_hw2\_algo\_lib\_cs.TheKnapsackProblem Class Reference

### Static Public Member Functions

- static int [Knapsackdp](#) (int[] Weights, int[] Values, ref int[] SelectedIndices, ref int maxBenefit, bool enableDebug=false)  
*Solves The 0-1 Knapsack Problem using DP.*

### 6.9.1 Member Function Documentation

#### 6.9.1.1 Knapsackdp()

```
static int ce100_hw2_algo_lib_cs.TheKnapsackProblem.Knapsackdp (
    int[] Weights,
    int[] Values,
    ref int[] SelectedIndices,
    ref int maxBenefit,
    bool enableDebug = false ) [inline], [static]
```

Solves The 0-1 Knapsack Problem using DP.

## Parameters

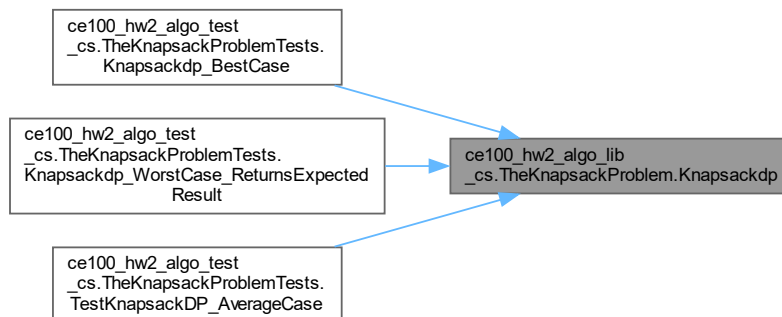
<i>Weights</i>	An array of item weights.
<i>Values</i>	An array of item values.
<i>SelectedIndices</i>	An array to store the chosen item indices.
<i>maxBenefit</i>	The maximum benefit that can be get from the Knapsack.
<i>enableDebug</i>	Optional flag to enable debugging output.

## Returns

Every time returns 0.

Referenced by [ce100\\_hw2\\_algo\\_test\\_cs.TheKnapsackProblemTests.Knapsackdp\\_BestCase\(\)](#), [ce100\\_hw2\\_algo\\_test\\_cs.TheKnapsackProblemTests.Knapsackdp\\_WorstCase\\_ReturnsExpectedResult\(\)](#) and [ce100\\_hw2\\_algo\\_test\\_cs.TheKnapsackProblemTests.TestKnapsackDP\\_AverageCase\(\)](#).

Here is the caller graph for this function:



The documentation for this class was generated from the following file:

- [C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-lib-cs/Class1.cs](#)

## 6.10 ce100\_hw2\_algo\_test\_cs.TheKnapsackProblemTests Class Reference

### Public Member Functions

- void [Knapsackdp\\_WorstCase\\_ReturnsExpectedResult](#) ()
- void [Knapsackdp\\_BestCase](#) ()
- void [TestKnapsackDP\\_AverageCase](#) ()

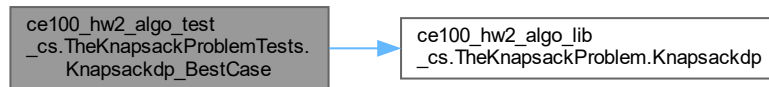
#### 6.10.1 Member Function Documentation

### 6.10.1.1 Knapsackdp\_BestCase()

```
void ce100_hw2_algo_test_cs.TheKnapsackProblemTests.Knapsackdp_BestCase ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.TheKnapsackProblem.Knapsackdp\(\)](#).

Here is the call graph for this function:



### 6.10.1.2 Knapsackdp\_WorstCase\_ReturnsExpectedResult()

```
void ce100_hw2_algo_test_cs.TheKnapsackProblemTests.Knapsackdp_WorstCase_ReturnsExpectedResult ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.TheKnapsackProblem.Knapsackdp\(\)](#).

Here is the call graph for this function:



### 6.10.1.3 TestKnapsackDP\_AverageCase()

```
void ce100_hw2_algo_test_cs.TheKnapsackProblemTests.TestKnapsackDP_AverageCase ( ) [inline]
```

References [ce100\\_hw2\\_algo\\_lib\\_cs.TheKnapsackProblem.Knapsackdp\(\)](#).

Here is the call graph for this function:



The documentation for this class was generated from the following file:

- C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/[UnitTest1.cs](#)



## Chapter 7

# File Documentation

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#### Data Structures

- class [ce100\\_hw2\\_algo\\_lib\\_cs.HeapSortAlgorithm](#)
- class [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationDP](#)
- class [ce100\\_hw2\\_algo\\_lib\\_cs.MatrixChainMultiplicationMemorizedRec](#)
- class [ce100\\_hw2\\_algo\\_lib\\_cs.LongestCommonSubsequence](#)
- class [ce100\\_hw2\\_algo\\_lib\\_cs.TheKnapsackProblem](#)

#### Namespaces

- namespace [ce100\\_hw2\\_algo\\_lib\\_cs](#)

**7.2 C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-lib-cs/obj/Debug/.NETFramework,Version=v4.8.AssemblyAttributes.cs File Reference**

**7.3 C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-lib-cs/Properties/AssemblyInfo.cs File Reference**

**7.4 C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/obj/Debug/net7.0/.NETCoreApp,Version=v7.0.AssemblyAttributes.cs File Reference**

**7.5 C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/obj/Debug/net7.0/ce100-hw2-algo-test-cs.AssemblyInfo.cs File Reference**

**7.6 C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/obj/Debug/net7.0/ce100-hw2-algo-test-cs.GlobalUsings.g.cs File Reference**

**7.7 C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/UnitTest1.cs File Reference**

## Data Structures

- class [ce100\\_hw2\\_algo\\_test\\_cs.HeapSortAlgorithmTests](#)
- class [ce100\\_hw2\\_algo\\_test\\_cs.MatrixChainMultiplicationDPTests](#)
- class [ce100\\_hw2\\_algo\\_test\\_cs.MatrixChainMultiplicationMemorizedRecTests](#)
- class [ce100\\_hw2\\_algo\\_test\\_cs.LongestCommonSubsequenceTests](#)
- class [ce100\\_hw2\\_algo\\_test\\_cs.TheKnapsackProblemTests](#)

## Namespaces

- namespace [ce100\\_hw2\\_algo\\_test\\_cs](#)

**7.8 C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/ce100-hw2-sln/ce100-hw2-algo-test-cs/Usings.cs File Reference**

**7.9 C:/Users/Alptuğ/Desktop/Yeni klasor/ce100-hw2-nefise-gullu/README.md File Reference**

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