Arrays.pdf

Arrays

1. Declaring and creating Arrays

1. Sequence of elements
   1. All elements are of the same time
   2. The order of the elements is fixed
   3. Has fixed size
2. Declaring arrays
   1. Declaration defines the type of the elemtns
   2. Square brackets mean "Array"
   3. Examples
      1. int[] myArray = new int[length];
      2. string[] myStrArray = new string[length];
3. Creating arrays
   1. Use the operator "new"
      1. Specify the array length

2. Accessing Array Elements

1. Array elements are accessed using square brackets operator [] (indexer)
   1. Array indexer takes element index as parameter
   2. The first element has index 0
   3. The last element has an index of Length - 1
2. Array elements can be retrieved and changed by [] operator

3. Console Input and Output of Arrays

1. First read from the console the length of the array

    2. Next create an array of given size and read it's elements in a loop

    3. Print array on the console
    4. Process all elements of the array
    5. Separate elements with whitespace of a new line

4. Iterating over arrays with For and Foreach

    1. Use FOR loop to process an array for
        1. Need to keep track of the index
        2. Processing is not strictly sequential from the first index to the last
    2. In the loop body use the element at the loop index (array[index])
    3. Printing an array of integers in reversed order

5. Dynamic arrays

    1. List<T>
        1. Basic methods
            1. Add
            2. Remove
            3. Count

6. Copying arrays

Arrays

Console Input and Output of Arrays
- Print arrays on the console
- Process all elements of the array
- Separate elements with whitespace of a new line
- First read from the console the length of the array
- Next create an array of given size and read it's elements in a loop

Declaring and creating Arrays
Creating arrays
- Use the operator "new"
- Specify the array

Sequence of elements
- Has fixed size
- All elements are of the same time
- The order of the elements is fixed

Declaring arrays
- Declaration defines the type of the elements
- Square brackets mean "Array"
- Examples
  - int[] myArray = new int[length];
  - string[] myStringArray = new string[length];

Iterating over arrays with For and Foreach
- Use FOR loop to process an array for
  - Need to keep track of the index
  - Processing is not strictly sequential from the first index to the last
- In the loop body use the element at the loop index (array[index])
- Printing an array of integers in reversed order

Dynamic arrays
- List<T>
- Basic methods
  - Count
  - Remove
  - Add

Copying arrays

Accessing Array Elements
- The last element has an index of Length - 1
- Array indexer takes element index as parameter
- The first element has index 0
- Array elements are accessed using square brackets operator [] (indexer)
- Array elements can be retrieved and changed by [] operator