Algorithms Index

And data structures

Data Structures

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| --- | --- |
| Data Structure | Description |
| Basic Collections |  |
| Vector/Array List |  |
| Linked List | Single and Double linked variety |
| Stack | Vector and Linked list implementations |
| Queue | Vector and Linked list implementations |
| Bag |  |
| Symbol Tables |  |
| Sequential Search | Not a serious implementation |
| Parallel arrays |  |
| Binary Tree | Balanced Search tree and balancing |
| Hash table | Linear probing and direct separate chaining |
| Strings |  |
| Tries |  |

Computer Science Algorithm

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| --- | --- |
| Algorithm | Description |
| Binary Search | Recurse and Iterative |
| Sorting Algorithms | Lower bound of |
| Selection Sort |  |
| Insertion Sort |  |
| Merge Sort |  |
| Quick Sort |  |
| Tree Algorithms | Breadth first/Depth first traversal, Insert, Find |
| Reverse array | In place and copy |
| M to last element in linked list |  |
| LinkedList IsCyclic |  |

Mathematics Algorithms

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| --- | --- |
| Algorithm | Description |
| Fibonacci | Recurse and Iterative/ Dynamic programming |
| Factorial | Recursive/Iterative/LINQ |
| HCF/LCM | Euclid algorithm |
| Prime Number | IsPrime implementations and counts |
| Matrix multiplication |  |
| 2-Sum/3 sum | Greedy and optimised – Sedgewick Java 1.4 |
| Newton/Rhapson |  |
| Permutation/Combinations |  |