

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Computer Science and Engineering - NOC:Programming, Data Structures and Algorithms

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Co-ordinating Institute - IIT - Madras

- Lecture 1 - Introduction to Computers and Programming
- Lecture 2 - Writing your first program
- Lecture 3 - Variables, Operators and Expressions
- Lecture 4 - Variable declarations, more operators and precedence
- Lecture 5 - Input and Output Statements
- Lecture 6 - Conditionals
- Lecture 7 - Loops
- Lecture 8 - Video Solution to Digital Root Programming Assignment
- Lecture 9 - Introduction to arrays
- Lecture 10 - Working with 1D arrays
- Lecture 11 - Find prime numbers
- Lecture 12 - Debugging demo
- Lecture 13 - Multi-dimensional arrays
- Lecture 14 - Pointers
- Lecture 15 - More on pointers
- Lecture 16 - Arrays and pointer arithmetic
- Lecture 17 - Introduction to Strings
- Lecture 18 - More on Strings
- Lecture 19 - Video Solution to Print Elements of a Matrix in Spiral Order Programming Assignment
- Lecture 20 - Introduction to functions
- Lecture 21 - More details on functions
- Lecture 22 - Arguments, variables and parameters
- Lecture 23 - Pass parameters by reference
- Lecture 24 - Recursive functions
- Lecture 25 - Running time of a program
- Lecture 26 - Computing time complexity
- Lecture 27 - Video Solution to Palindrome Checker Programming Assignment
- Lecture 28 - Algorithms and Powering
- Lecture 29 - Polynomial evaluation and multiplication
- Lecture 30 - Linear and Binary Search Analysis
- Lecture 31 - Analysis of minimum and maximum in an array
- Lecture 32 - Sorting I
- Lecture 33 - Sorting II

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## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

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- Lecture 34 - Finding i-th smallest number
- Lecture 35 - Video Solution to Sorting words Programming Assignment
- Lecture 36 - Structures
- Lecture 37 - More on structures
- Lecture 38 - Using structures and pointers to structures
- Lecture 39 - Dynamic memory allocation
- Lecture 40 - Linked Lists
- Lecture 41 - Brief introduction to C++
- Lecture 42 - Data Structures
- Lecture 43 - Lists
- Lecture 44 - Supplementary Lesson
- Lecture 45 - Video Solution to Implementing a Hash Table ADT Programming Assignment
- Lecture 46 - Stacks
- Lecture 47 - Queues
- Lecture 48 - Trees
- Lecture 49 - Tree traversal
- Lecture 50 - Binary Search Trees
- Lecture 51 - Heaps
- Lecture 52 - Graphs and Representation
- Lecture 53 - Supplementary Lesson
- Lecture 54 - Video Solution to the Queue in a Hospital Programming Assignment
- Lecture 55 - Greedy Algorithms
- Lecture 56 - Dynamic Programming
- Lecture 57 - Matrix Chain Multiplication
- Lecture 58 - Dijkstra's Algorithm
- Lecture 59 - Boyer-Moore String Matching Algorithm
- Lecture 60 - File I/O
- Lecture 61 - Modular Programming