

**For Language Basics** : Index (1, 2, 3, 4, 5, 6, 7) | 10-15 Days

TOPIC	No. of Days	Minimum Qs	Video Index in <b>C++ Placement Course</b>
Time & Space Complexity	1	15	7.1
Arrays (with Searching) Sorting	8	40	8.1 to 8.6 9.1 to 9.2 10.1
String (Basics)	1	4	13.1 to 13.2
Recursion & Backtracking	2	10	16.1 to 16.4 18.1 to 18.3
Sorting (Quick & Merge)	1	4-6	19.1 to 19.2 20.1 (count sort)*
Linked List	2	10	22.1 to 22.11
Stacks & Queues	2	8	23.1 to 23.9 24.1 to 24.5
Binary Trees Binary Search Trees	6	30	27.1 to 27.16 28.1 to 28.11
Heaps & Priority Queue	2	10	31.1 to 31.6
Hashing	2	10	32.1 to 32.8
Greedy Algorithm	2	10	33.1 to 33.7
DP Algorithm	5	25	35.1 to 35.20
Graphs	5	25	34.1 to 34.19
String (Advanced)	1	4	39.1 to 39.4
Tries*	1	4	36.1 to 36.4
Segment Trees*	2	5-7	40.1 to 40.7
Fenwick Trees*	1	3	41.1 to 41.3

\*Do these topics at the end, as you must complete the important ones first.

\*\*Additional Topics : Bit Manipulation, 2-Pointer Approach

**C++ Placement Course :** <https://www.youtube.com/playlist?list=PLfqMhTWNBT0b2nM6JHVCnAkhQRGiZMSJ>

**Practice Questions for Time & Space Complexity :** Cracking The Coding Interview by G. L. McDowell

## Theory Topics

### 1. OOPS (21.1 to 21.4 of C++ Placement Course)

- Objects & Classes
- Abstraction
- Inheritance
- Polymorphism
- Encapsulation

### 2. Database Management Systems (DBMS)

- SQL
- ACID Properties (Atomicity, Consistency, Isolation, Durability)
- Use of B & B+ Trees
- Concurrency Control

### 3. Operating Systems

- What is an OS?
- CPU Scheduling algos
- Compiler, Interpreter, Loader, Linker
- Paging, Segmentation
- Process Synchronization
- Threads
- Deadlocks

### 4. Computer Networks

- OSI Model (Layers in Detail)
- TCP/IP Model
- Devices (Router, Switch, Hub, Repeater, Bridge, Gateways)
- TCP vs UDP
- Network Topologies