CS Fundamentals: List of Important Topics **Target : Placement/Internship Interviews**

For any doubt or preparation guide, Ping here 🎯

Object-Oriented Programming:

- **Objects**
- **Classes**
- **Polymorphism**
- **Abstraction**
- **Encapsulation**
- **Inheritance**
- **Exception Handling**
- **Object-Oriented Design**
- **Misc (Friend & Virtual - Functions, Ctor, Dtor)**

Database Management System:

- **Introduction (Architecture, User Cases)**
- **Entity-Relationship Model (ERD Diagrams)**
- **Relational Model (Schema Design, Keys, Anomalies)**
- **Relational Algebra (Joins, Operators)**
- **Normalisation (Meaning & its forms 1NF, 2NF)**
- **Transactions and Concurrency Control (ACID Properties)**
- **Indexing, B and B+ trees (File Structure)**
- **SQL Queries**

Operating System:

- **Basic Concepts (Work & Types)**

- **System Structure (Kernel, I/O System)**
- **CPU Scheduling (FCFS, SJF, Round Robin, PS)**
- **Process Synchronization (Producer-Consumer, Read-Write, Semaphores, IC)**
- **Deadlock (Necessary Conditions, Algos)**
- **Processes & Threads (Thread types, Multi-threading)**
- **Memory Management (Paging, Virtual Memory)**
- **File and Disk Management (FIFO, File Allocation)**

Computer Networks:

- **OSI Model (Open Systems Interconnection Architecture)**
- **Application Layer (HTTP, SMTP, FTP)**
- **Network Layer (IPv4, IPv6, Routing)**
- **Transport Layer (TCP/UDP Protocol, Congestion Policies)**
- **Datalink Layer (Ethernet, Error & Flow Control Policies)**

Software Engineering Concepts:

- **Introduction (Types of Software)**
- **Software Development Life Cycle (SDLC Models)**

System Design:

- **System Design Concepts**
- **System Design Interview Problems**

Resource Guide 

Object-Oriented Programming:

Book: Link

Video: C++ Playlist OOPs in Java

Written: In C++ In Java

Practice

Operating System:

Video: Playlist 1 Playlist 2 Playlist 3

Written

Practice

Database Management System:

Video: Playlist 1 Playlist 2

Written

Practice

Software Engineering Concepts:

Video: Playlist

Written

Practice

Computer Networks:

Video: Playlist 1, Playlist 2

Written

Practice

System Design:

Video: Playlist

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