Computer Science Master Plan

1. Daily Study Schedule (Time Table)

Morning Block (8:00 AM - 12:00 PM)

- 8:00 AM - 10:00 AM: Programming Practice (C/C++/Python)
- 10:00 AM - 10:30 AM: Break
- 10:30 AM - 12:00 PM: Data Structures & Algorithms

Afternoon Block (1:00 PM - 5:00 PM)

- 1:00 PM - 2:30 PM: Operating Systems / Computer Networks (alternate days)
- 2:30 PM - 3:00 PM: Break
- 3:00 PM - 5:00 PM: DBMS / OOP Concepts

Night Block (7:00 PM - 10:00 PM)

- 7:00 PM - 8:30 PM: Web Development / Digital Electronics
- 8:30 PM - 9:00 PM: Revision
- 9:00 PM - 9:30 PM: Quiz Time

2. Topics to Learn (Full Syllabus Covered)

- Programming: C, C++, Python (basics and syntax)
- Data Structures & Algorithms: Arrays, Linked Lists, Trees, Sorting, Searching, Dynamic Programming
- Computer Networks: OSI Model, TCP/IP, Routing, IP Addressing
- Operating Systems: Process Management, Memory Management, File Systems
- DBMS: SQL, ER Diagrams, Normalization, Transactions
- Web Development Basics: HTML, CSS, JavaScript, Frontend Frameworks

- OOP Concepts: Classes, Objects, Inheritance, Polymorphism, Abstraction
- Logic Gates & Digital Electronics: AND, OR, NOT, Flip-Flops, Circuits
- CS Theory: Automata, Turing Machines, Compiler Basics
- CS Projects/Practicals: Mini Projects involving above topics

3. Weekly Topic Plan

Week 1:

- Mon: C Programming, Arrays, OS Basics
- Tue: C++, Linked Lists, DBMS Intro
- Wed: Python, Stacks & Queues, CN Basics
- Thu: HTML/CSS, Trees, Process Management
- Fri: JS Basics, Graphs, SQL Queries
- Sat: OOP Concepts, Hashing, Memory Management
- Sun: Weekly Revision + Challenge Quiz

Week 2:

- Mon: Python Advanced, Sorting, TCP/IP
- Tue: Frontend Practice, Searching, File Systems
- Wed: C/C++ Practice, DP, ER Diagrams
- Thu: JavaScript DOM, OS Scheduling
- Fri: Projects Start, Recursion, CN Protocols
- Sat: Mini Project Work, CN Addressing
- Sun: Weekly Revision + Challenge Quiz

Week 3:

- Mon: DBMS Advanced, Compilation Basics
- Tue: Automata Theory, Regex, FSM
- Wed: Compiler Phases, Syntax Trees
- Thu: Digital Circuits, Logic Gates
- Fri: Flip Flops, Counters
- Sat: Project Enhancement
- Sun: Weekly Revision + Challenge Quiz

Week 4:

- Mon: Mock Tests: Programming + DSA
- Tue: Mock Tests: CN + OS
- Wed: Mock Tests: DBMS + OOP + Web
- Thu: Mock Tests: CS Theory + Digital
- Fri: Project Finalization
- Sat: Peer Review + Feedback
- Sun: Final Weekly Challenge Quiz

4. Daily Quiz Section

Day 1 Quiz:

1. What is the output of printf("%d", (a = 5, a + 5))?
2. Which data structure uses FIFO?
3. What is the IP address format?
4. Which SQL clause is used to filter records?

5. What does CSS stand for?

Answers:

1. 10

2. Queue

3. xxx.xxx.xxx.xxx (IPv4)

4. WHERE

5. Cascading Style Sheets

5. Core Topics to Cover

Programming:

- C/C++ Basics (I/O, loops, conditions, functions)

- Python Basics

Data Structures:

- Arrays, Strings, Linked Lists

- Stacks, Queues, Trees, Graphs

- Hashing, Heaps

Algorithms:

- Sorting (Bubble, Merge, Quick)

- Searching (Linear, Binary)

- Recursion

- Dynamic Programming

- Greedy & Backtracking

Operating Systems:

- Processes, Threads
- Scheduling
- Memory Management
- Deadlock

DBMS:

- ER Model
- Relational Model
- SQL Basics
- Normalization

Computer Networks:

- OSI Model
- TCP/IP
- IP Addressing
- HTTP, FTP, DNS

OOP Concepts:

- Classes, Objects
- Inheritance
- Polymorphism
- Abstraction

Computer Science Master Plan

Logic Gates & Digital Electronics:

- AND, OR, NOT, NAND, NOR
- Boolean Algebra
- K-Map

Automata & Compilers:

- Finite Automata
- Grammar & Languages
- Lexical Analysis

(Optional) Web Basics:

- HTML, CSS, JS