

## Timechart (Subject-wise and Topic-wise)

### Python (Jul 15 - Jul 21)

- Basic Syntax, Data Types, Loops, Conditionals
- Functions, \*args/\*\*kwargs
- String operations, Lists, Sets, Dicts
- File handling, Exception handling
- OOP (class, inheritance)
- Modules, Lambda, Decorators, Generators
- Virtualenv, pip, CLI scripts
- Mini utility script/project

### C Language (Jul 22 - Jul 28)

- Data Types, I/O, Arrays, Strings
- Pointers, Functions, Recursion
- Dynamic Memory Allocation
- Structures, File Handling
- Implement Stack, Queue, Linked List from scratch

### DSA (Jul 29 - Sep 10)

- Arrays, Linked List, Stack, Queue
- Trees, BST, Traversals
- Heaps, Graphs, BFS/DFS
- Searching, Sorting, Binary Search
- Greedy, Hashing
- Recursion, Backtracking
- Dynamic Programming
- Practice 30-50 LeetCode/GFG problems

### DAA (Jul 29 - Sep 15)

- Time & Space Complexity, Master Theorem

## Timechart (Subject-wise and Topic-wise)

- Divide & Conquer (Merge, Quick Sort)
- Greedy Algorithms (Huffman, Jobs)
- Backtracking (N-Queens, Sudoku)
- DP (Optimal BST, MCM)
- Branch and Bound
- NP Completeness Basics

### Machine Learning (Jul 29 - Oct 31)

- [Aug 5] Math: Linear Algebra, Calculus, Probability
- [Aug 25] Supervised: Linear/Logistic Regression, KNN, Decision Trees, SVM
- [Aug 30] Evaluation: Accuracy, F1, ROC, Confusion Matrix
- [Sep 15] Unsupervised: K-Means, PCA
- [Sep 20] Utilities: Normalization, Train-Test Split, K-Fold CV
- [Oct 31] Mini Projects: Housing, Spam/Ham, Clustering

### CAT 2025 (Jul 29 - Nov 15)

- [Aug 31] Phase A: Quant (Arithmetic, Algebra, Geometry), VARC (RC, Para), DILR
- [Oct 1] Phase B: Full-length mocks start
- [Nov 15] Revise errors, strategy, 10+ mocks, 15+ sectionals

### React (Sep 16 - Oct 5)

- JSX, Components, Props, State
- Hooks: useState, useEffect
- Router, Context API, Custom Hooks
- Forms, Animations
- Mini Projects: Todo App, Blog UI

### Node.js + Express (Oct 6 - Oct 20)

- Setup, Routing, Middleware

## Timechart (Subject-wise and Topic-wise)

- REST APIs, MongoDB CRUD
- Auth with JWT, dotenv
- Connect to React
- Backend Project: Notes/Blog API

### **Django + DRF (Oct 21 - Nov 15)**

- App Structure, Models, Admin
- Views, Templates, ORM
- DRF: Serializers, ViewSets, Token Auth
- Connect to frontend / standalone
- Deploy with Render/Heroku