


## 6-Month Study Plan for Python DSA (4.5 Hours/Day)

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### Daily Time Allocation (Total: 4.5 Hours)

-  DSA Learning & Practice: **4.5 Hours**
  - 2 hrs: Learn new concept (video/book/notes)
  - 2 hrs: Solve 3–5 problems
  - 30 mins: Revise, analyze mistakes, take notes
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### Month 1: DSA Fundamentals (Python Basics + Arrays + Strings)

#### Weekly Goals

- **Week 1:** Python Lists & Arrays, Input/Output, Slicing
  - **Week 2:** Strings, Palindrome, Anagram, Substrings
  - **Week 3:** Time & Space Complexity, Problem Patterns
  - **Week 4:** 40 Problems on Arrays & Strings (Easy-Medium)
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### Month 2: Recursion, Searching, Sorting, Hashing

#### Weekly Goals

- **Week 5:** Recursion (Fibonacci, Factorial, Backtracking Intro)
  - **Week 6:** Searching Algorithms (Linear, Binary Search)
  - **Week 7:** Sorting (Bubble, Selection, Insertion, Merge, Quick)
  - **Week 8:** Hashing (Dict, Set, Freq Maps, Hash Table Problems)
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### Month 3: Stacks, Queues, Linked Lists

#### Weekly Goals

- **Week 9:** Stack (Infix/Postfix, Valid Parentheses, NGE)
  - **Week 10:** Queue, Deque, Circular Queue, Sliding Window
  - **Week 11:** Linked List (Singly, Doubly, Reverse, Mid, Cycle)
  - **Week 12:** Solve 40 Practice Problems on Stack/Queue/LL
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## Month 4: Trees and Heaps

### Weekly Goals

- **Week 13:** Binary Trees, Tree Traversals (In, Pre, Post)
  - **Week 14:** BST – Insert, Delete, Search, Validate
  - **Week 15:** Heaps (Min/Max, Priority Queue, Heapq)
  - **Week 16:** Practice 50 Mixed Tree & Heap Problems
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## Month 5: Graphs, Greedy, Dynamic Programming (Intro)

### Weekly Goals

- **Week 17:** Graphs – Representation, BFS, DFS
  - **Week 18:** Graph Problems (Cycle Detection, Topo Sort)
  - **Week 19:** Greedy Algorithms – Activity Selection, Huffman
  - **Week 20:** Intro to DP – Fibonacci, Climb Stairs, Coin Change
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## Month 6: Advanced DP, Backtracking, Revision + Mocks

### Weekly Goals

- **Week 21:** DP – LIS, LCS, Knapsack Variants
  - **Week 22:** DP on Grids & Strings
  - **Week 23:** Backtracking – Sudoku, N-Queens, Subsets
  - **Week 24:** Mock Contests, Timed Practice, Revision Sheets
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## Daily Practice Plan

- ☒ 3–5 DSA Problems/Day (Start Easy → Medium → Hard)
  - ☒ Weekly Contest (LeetCode, GFG)
  - ☒ 30 mins review: Flashcards, Concepts, Errors
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## Recommended Platforms

- Practice: LeetCode, GeeksforGeeks, NeetCode, CodeStudio
- Videos: Kunal Kushwaha DSA, Striver's A2Z Sheet, TechDose
- Trackers: Notion, Excel, NeetCode 150/Blind 75 Tracker