Competitive Programming Roadmap (800 → Expert in 5 Months)

This roadmap is designed for Sofikul Sk to progress from ~800 rating (Newbie) to Expert (1600+) on Codeforces in 5 months. The plan assumes ~4 hours of CP practice per day along with contests.

Month 1 (800 → 1100–1200, Pupil)

- Focus: Speed & accuracy on fundamentals.
- Problem Range: 800–1200
- Topics: Implementation, arrays, prefix sums, sorting, greedy basics, binary search, two pointers.
- Sources: Codeforces Problemset (800–1200), A2OJ ladders, LeetCode Easy.

Month 2 (1100 → 1300, Green)

- Focus: Contest confidence, solve 3 problems in Div. 3.
- Problem Range: 1000–1400
- Topics: Hashing, sets/maps, BFS/DFS, constructive algorithms, brute-force with pruning.
- Sources: Codeforces EDU, CP-Algorithms, Div. 3 contests.

Month 3 (1300 → 1450, Specialist)

- Focus: Medium DP + Graphs.
- Problem Range: 1200–1500
- Topics: DP (1D/2D, LIS, knapsack), string algorithms basics, shortest paths, bitmask DP, modular arithmetic.
- Sources: CF EDU (DP, Strings), AtCoder Beginner Contests, LeetCode Medium.

Month 4 (1450 → 1550)

- Focus: Solve 3 problems consistently in Div. 2.
- Problem Range: 1400–1600
- Topics: Advanced DP, toposort, MST, probability/combinatorics, meet-in-the-middle.
- Sources: AtCoder DP contest, CF Div. 2 D problems, CP-Algorithms.

Month 5 (1550 → 1600+, Expert)

- Focus: Contest performance > practice.
- Problem Range: 1600–1800
- Topics: Constructive problems, DP optimizations, advanced graphs, number theory, problem-solving patterns.
- Sources: CF Div. 2 C/D/E, AtCoder Regular Contests, CSES Problem Set.

Contest Strategy:
1. Give every Div. 2 / Div. 3 contest.
2. Solve at least 3 problems per contest.
3. Always upsolve 2 problems after each contest.
4. Track failures (time, implementation, idea gap) and fix them.