In the name of ALLAH

Complete Competitive Programming Basic to Intermediate Level Course

(No prerequisite needed)

40 Live Classes: 8 Programming Contest: 200+ Problems

3500/- Only

(After December, 10 it will be 5000/-)

The class will start on **17 December 2023**. After enrollment, you will be **immediately given access to all videos** of the **previous batch class**. So you can start the course as soon as possible.

Who can do the course?

Anyone can do this course no matter whether you are a CS student or non-CS student, 1st-year student, or Job seeker, you can do it. No prerequisite is needed.

What are the features of the course?

- 40 Live classes
- 8 programming contests
- 200+ Practice Problems and Assignments
- All videos of the previous batch will be given
- The course is divided into 5 modules (Module-2 and 3 are live and the remaining are video courses)
- Each Module can be enrolled separately (the Sum of all modules with separate prices is 8200/–)
- 5 months Live class (You need 1.5 years to complete all the contents)
- Topics will be discussed based on problem-solving
- After each class Assignment will be given to students

What will you learn from this course?

- C & C++ Programming Language
- Basics of Problem-solving and Problem-solving strategy
- Greedy
- Bruteforce
- Constructive
- Complexity Analysis of the Algorithm
- Basic Sorting algorithms (Insertion, Bubble sort, merge sort)
- Partial Sum
- Two Pointer Range Sum Query
- Contribution Technique
- Functions
- Recursion and basic dynamic programming
- Structure
- Pointer
- Structure Sorting
- Binary Search (Basics, Upper Bound, Lower Bound)
- Integer Bisection
- Fractional Bisection
- Number theory
- Prime generation
- Sieve of Eratosthenes
- Prime Factorization
- Number of Divisors
- Sum of Divisors
- Modular Arithmetic
- Basics of Graph Theory
- Adjacency matrix, Adjacency list, and tree
- Depth-first search (DFS)
- Breadth-first search (BFS)
- The shortest path on the unweighted graph
- Basics of Dynamic Programming
- 0-1 knapsack
- Coin change
- Dp solution print
- Intermediate-level graph theory
- Dijkstra
- Belman ford
- Floyd warshal
- Disjoint set union
- Minimum spanning tree
- Intermediate-level Dynamic Programming
- Longest Common subsequence
- Longest Increasing subsequence in both dp and binary search

- Bitmask dp
- Digit dp
- Intermediate-level Data structure
- Segmentree
- Lazy Propagation
- Merge sort tree

With 200+ problem solving

Why should you take the course?

- If you want to learn programming
- If you want to start your competitive programming journey
- If you want to enhance your problem-solving skill
- If you want to do well in a coding interview question
- If you're going to start learning software development but don't have the basics
- Then you should do the course

Who is the Trainer?

- Muhammad Shahriar Alam
- CSE 17 Batch, the University of Chittagong
- ACM ICPC Dhaka Regional-2020, 17th Rank
- Codeforces: _Muhammad (max. 1830, Expert)
- Software Engineer, Enosis Solution
- Founder, CPS Academy

/** Some problems and assignments will be removed or added in the future **/

Module-1: Basic C/C++ and Problem Solving (Class-1 to Class-25):

25 Class Videos: Video Course: 2500/-

Topics will be Covered:

- C/C++
- Basic I/O

- Operators (+, -, *, /, &, |, ^)
- Conditions (if/else)
- Loops (for, while, do-while)
- Array/Strings
- Greedy
- Bruteforce
- Constructive
- Functions
- Built-in functions in both C and C++

Features:

- 25 Class Videos
- 60+ Practice problems and Assignments

Details Classwise Course Plan of Module-1 with Practice problems link:

https://docs.google.com/document/d/1Xxq8-dG-6OlsrtB0cDCzl7h5SC_CUTvXgvyvzX8LWeM/edit?usp=sharing

Module-2: Basic Algorithms, Data Structures, and Problem-solving Techniques

20 Classes: 2.5 Months: 2500/-

Topics will be Covered:

- Partial Sum
- Sliding windows Range Sum Query
- Contribution Technique
- Policy-Based Data structure
- Bit masking
- Recursion
- Structure
- Structure Sorting
- Pointer

- Sorting (Bubble, Insertion)
- Binary Search
- Upper bound / Lower bound
- Integer Bisection
- Fractional Bisection

Features:

- 20 Live Online Classes
- 35+ Practice Problems and Assignments
- 4 Programming Contests (2 Assignment long contests, 2 normal short contests)

Details Classwise Course Plan of Module-2 with Practice problems link:

https://docs.google.com/document/d/1F8wwTPbpZmCaZ52GLmWloB3wXFSw9E07frxJ_Q6dSm4/edit?usp=sharing

Module-3: Number Theory

15 Classes: 1.5 Month: 1500/- Only

Topics will be Covered:

- Harmony Series
- Prime Generation
- Sieve of Erythrose
- Prime Factorization
- Number of Divisors
- Euler Phi Function
- Sum of divisors
- Modular arithmetics

Features:

- 15 Live Online Classes
- 30+ Practice Problems and Assignments
- 4 Programming Contests (2 Assignment long contests, 2 normal short contests)

Details Classwise Course Plan of Module-3 with Practice problems link:

https://docs.google.com/document/d/1PxvqTQRHceS-o89TwNZa3uxCnPIac5pkMrmhVDE1y8U/edit?usp=sharing

Level-2: Basic Graph Theory and Dynamic Programming

20 hours: 500/- Only

Topics will be Covered:

- Basics of Graph Theory
- Adjacency matrix, Adjacency list, and tree
- Depth-first search (DFS)
- Breadth-first search (BFS)
- The shortest path on the unweighted graph
- Basics of Dynamic Programming
- 0-1 knapsack
- Coin change
- Dp solution print

Features:

- 20 hours of video content
- 25+ Practice Problems and Assignments

Level-3: Intermediate Level Graph Theory, Dynamic Programming, and Data structure

45 hours: 1200/- Only

Topics will be Covered:

- Intermediate-level graph theory
- Dijkstra
- Belman ford
- Floyd warshal

- Disjoint set union
- Minimum spanning tree
- Intermediate-level Dynamic Programming
- Longest Common subsequence
- Longest Increasing subsequence in both dp and binary search
- Bitmask dp
- Digit dp
- Intermediate-level Data structure
- Segmentree
- Lazy Propagation
- Merge sort tree

Features:

- 45 hours of video content
- 25+ Practice Problems and Assignments