



# Cheenta Informatics Olympiad Program



**cheenta.com**

since 2010

**Passion for Mathematical Science**

This program is useful for ZIO, ZCO, INOI and other informatics olympiads

# Success Stories since 2010



## Aryan Kalia

Top 1% globally in American Math Competition,

Attended Math Olympiad Program and School Research Program at cheenta

Attended Student internship program at cheenta

**Going to Harvard University in 2022**



## Sambuddha Majumdar

Scotland Math Olympiad Awardee

Attended Math Olympiad Program at cheenta

Attended Student internship program at cheenta

**University of Edinburgh**



## Anushka Aggarwal

Youngest Indian National Math Olympiad awardee, European Girls Math Olympiad awardee

Attended Math Olympiad Program at cheenta

Attended Student internship program at cheenta

**Going to MIT (Massachusetts Institute of Technology) in 2022**



## Akshaj Kadaveru

American Math Competition, AIME and USAJMO awardee

Attended Math Olympiad Program at cheenta

**MIT (Massachusetts Institute of Technology)**

# Curriculum driven by problem solving



## 48 weeks program, 8 modules



### Basics of Programming

6 weeks

- Variables, Constants, Syntax
- If - then - else
- Strings
- Loops
- Psuedo-code
- Advanced Problems



### Data Structure

6 weeks

- Arrays
- Matrices
- Linked List
- Stack
- Queue
- Problems on Data Structure



### Basics of Algorithms and Complexity

6 weeks

- Time Complexity
- Space Complexity
- Big-O, Omega Notation
- Asymptotic Analysis
- Comparison of Algorithms - Week 1
- Comparison of Algorithms - Week 2



### Searching Algorithms

6 weeks

- Linear Search
- Binary Search
- Time Complexity of search algorithms
- Magic Index Problems
- Interpolation Search
- XOR and Problems

# Curriculum continues



## Sorting Algorithms

6 weeks

- Insertion Sort
- Bubble Sort
- Merge Sort
- Recursion
- Divide and Conquer Algorithms
- Complexity Analysis



## Greedy Algorithms and Boolean Algebra

6 weeks

- Strategy of Greedy Algorithms
- Use Cases of Greedy Algorithm
- Optimization
- Boolean Algebra and Digital Logic  
Week 1
- Boolean Algebra and Digital Logic  
Week 2
- Boolean Algebra and Digital Logic  
Week 3



## Dynamic Programming

8 weeks

- Recursion
- Memoization
- Fibonacci Numbers
- Matrix multiplication problems
- Catalan Numbers
- KnapSack Problem
- Paranthasisation problem
- Rod cutting problem



## Graph Algorithms

4 weeks

- BFS, DFS
- Minimum Spanning Tree
- Dijkstra Algorithm
- Bellman Ford and Floyd Warshal  
Algorithm



# Taught by Olympians and Researchers from leading universities

Since 2010 Cheenta has evolved into a Gurukul. Our students have attended leading universities in India such as Indian Statistical Institute, Chennai Mathematical Institute, TIFR, IITs and universities abroad such as Harvard, MIT, Oxford, Edinburgh to name a few. Some of them returned as teachers for the next generation of learners. And the pursuit of excellence continues.



**Cheenta Team has 40+ members.  
Here are some of the leaders.**



**Srijit Mukherjee**  
BStat and MStat from Indian  
Statistical Institute (India)  
Director at Cheenta



**Dr. Ashani Dasgupta**  
PhD from University of  
Wisconsin-Milwaukee (USA)  
Founder - Director at Cheenta



**Dr. Sankhadip Chakraborty**  
PhD from IMPA, BSc. Math  
from Chennai Mathematical  
Institute (India),  
Director at Cheenta



**Dr. Anirban Majumdar**  
PhD from ENS Paris-Saclay,  
France on Theoretical  
Computer Science, B.Sc.-  
M.Sc. from Chennai  
Mathematical Institute



**Swarnabja Bhowmick**  
B.Tech from Calcutta University  
on Computer Science with  
multiple IEEE publications on  
Artificial Intelligence and Machine  
Learning



**AR Sricharan**  
BSc. Math, M.Sc. Computer  
Science from Chennai  
Mathematical Institute (India).  
Pursuing PhD in University of  
Vienna

# Contest Calendar for beautiful problem solving

Cheenta students think of Math Olympiads as **milestones**. The end goal of the program is to fall in love with computer science and develop great problem solving skills. Milestones help us to stay in track.

Not all computer science contests are equal. Here is a list of contests that are suitable and most effective at this level of learning.

Our success centre will keep you updated about registration deadlines of these contests and other opportunities

---



**Zonal Informatics  
Olympiad (ZIO)**



**Zonal Computing  
Olympiad (ZCO)**



**Indian National  
Informatics Olympiad  
(INOI)**

# Thank You

---

## Passion for Mathematical Science

Let us know if you need more information.



### Email

[support@cheenta.com](mailto:support@cheenta.com)

---

### Phone

+91 760 501 9990

+1 414 220 0191

---

### Address

2nd Floor, 22, Lake Place Rd, Kolkata, West Bengal 700029, India

---

### Website

[www.cheenta.com](http://www.cheenta.com)

---