Computer Science Program Level 1

Cheenta Academy for Olympiad & Research

cheenta.com

Since 2010

Passion for Mathematical Science & Research

This program is useful for Informatics and Computer Science Olympiads (Grades 4 -6)

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

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, Europian Girls Math Olympiad awardee

Attended Math Olympiad Program at cheenta

Attended Student internship program at cheenta

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 48 week program, 5 modules

Module 1

Basic of Scratch and Pseudocode Challenges   10 Lessons

Introduction to Programming with Sprite, Backdrop. Pseudocode on number swapping

Usage of sound and ambience in the context of Scratch. Pseudocode to find the Largest Number.

Motion in Scratch (flying, gliding etc.). Pseudocode to display the sum of first 10 natural numbers.

Movement of Sprite (left, right, up & down). Pseudocode to display prime numbers

Changes in costume & background. Pseudocode to find out HCF of 2 numbers.

Calendar Activity. Pseudocode to check a leap year.

Drawing using pen. Pseudocode to reverse number

Scratch involving Piano project. Pseudocode on number swapping

Drawing something using mouse. Pseudocode on comparing numbers

Review and Evaluation

Module 2

Introduction to elementary problem solving in C, Data Type, Basic Concepts of Variables

Using Variables in Scratch and C

Operators in Scratch and C

Concepts of Conditionals (both in Scratch and C)

Practice problems on Conditionals

Iteration concept in C (While Loop, learn While Loop)

Iteration concept in C (For Loop, Nested Loop)

Iteration concept in Scratch

Practice some pseudo codes and writing codes in C

Review and Evaluation

Module 3

📋 **Clones and Lists**   **10 Lessons**

📌 Calculator Project

📌 Drawing of a polygon project

📌 Concept of Clones

📌 Practice problems on clones

📌 Concept of Lists

📌 Further Problems involving Lists

📌 Making worm (project)

📌 Bubble wrap (project)

📌 Chimes (project)

📌 Review and Evaluation

Module 4

Module 5

Elementary Recursion   **10 Lessons**

📌 Concept of recursion, Basic Pseudocodes involving recursions.

📌 Use of recursion in C

📌 Fibonacci series using recursion in scratch

📌 Break and continue in C

📌 Print a pattern in C

📌 Search a number from an array. Sort an array in C

📌 Hungry shark game in Scratch

📌 Maze game in Scratch

📌 Review and Evaluation

Taught by Olympians

and Researchers from leading universities

Since 2010 Cheenta has evolved into a Gurukul. Our students are in 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

Swarnabja Bhowmick
B.Tech in Computer Science from the University of Calcutta. IEEE Publications. Faculty of Mathematics and Computer Science at Cheenta.

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