

## CODESHOWS MODULE 1(For Second Year)

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- **TUTORIAL FOR C++: -**

- <https://www.geeksforgeeks.org/c-plus-plus/>
- <https://www.topcoder.com/community/competitive-programming/tutorials/power-up-c-with-the-standard-template-library-part-1/>
- <http://www.cppforschool.com/tutorials.html>

- **YOUTUBE TUTORIALS FOR C++: -**

- <https://www.youtube.com/channel/UCD-scAE4ju78dld1kpcsQfQ>

- **BOOKS FOR C++: -**

- <http://www.lmpt.univ-tours.fr/~volkov/C++.pdf>

- **COMPETITIVE PROGRAMMING SITES: -**

- PRACTICE:
  - [Hackerrank](#)
  - [Hackerearth](#)
  - [SPOJ](#)
- CONTEST:
  - [CodeChef](#)
  - [Codeforces](#)

**Note:** - Try to participate in all contests on these sites from today onwards.

## **TOPICS (To be Completed Before 1st Contest): -**

- **Sieve of Eratosthenes : For Prime No.**
  - <https://www.geeksforgeeks.org/sieve-of-eratosthenes/>
  - **Practice Problems:**
    - <https://codeforces.com/problemset/problem/17/A>
    - <https://codeforces.com/problemset/problem/26/A>
  
- **Basic Euclidean algorithms For Calculating Gcd(Try to understand the logic behind the algorithm).**
  - <https://www.geeksforgeeks.org/euclidean-algorithms-basic-and-extended/>
  - **Practice Problems:**
    - <https://codeforces.com/contest/527/problem/A>
    - <https://www.spoj.com/problems/CEQU/>
  
- **Prefix Sum Array :**
  - <https://www.geeksforgeeks.org/prefix-sum-array-implementation-applications-competitive-programming/>
  - **Practice Problems:**
    - [SPOJ CSUMQ](#)
  
- **Power Function Implementation(Log(n)):**
  - <https://www.geeksforgeeks.org/write-an-iterative-olog-y-function-for-pow-x-y/>

(\*Hint: Try To implement The Multiplication Function in the same way (Log(n)))

- **Binary representation of a given number:**
  - <https://www.geeksforgeeks.org/binary-representation-of-a-given-number/>
  - **Practice Problems:**
    - <https://www.spoj.com/problems/XMAX/>
    - <https://www.spoj.com/problems/ASSIGN/>
    - <https://www.spoj.com/problems/BITMAP/>

(MAKE YOUR GRIP ON Bitwise Operator(AND,OR,XOR,LEFT SHIFT, RIGHT SHIFT)).

- **TRY TO COMPLETE ( Arrays,Strings,Basic math operations (addition, subtraction, multiplication, division, exponentiation),Euclid's GCD Algorithm,Prime Numbers, divisibility of numbers)**  
<https://www.codechef.com/certification/data-structures-and-algorithms/prepare#foundation>)

\*\*All the second-year student must learn C++ and its STL library. Codeshows team will be hosting a contest soon and filtering will be done on the basis of your score in contest.