

You can only develop your thinking process by, obviously thinking. So, I am only going to share questions with you all and then you have to drain your brain thinking. At the end of the day, you should be a few concepts higher than before, all that matters. Even then, any help, you are welcome, either [sahai.sagar@gmail.com](mailto:sahai.sagar@gmail.com), or <https://www.facebook.com/sahsagar>.

### **Round 1:-**

#### Question 1

Given a string of open and close brackets, tell whether it is a valid combination or not.  
eg:- (((()))) is a valid combination while )(()()) is not for obvious reasons.

#### Question 2

Given n, a number where n is the total no. of brackets, create all the valid combinations.

Eg:-given n=2

Ans – ()

Given n=4

Ans = ()()

(( ))

#### Question 3

Now given a number n, predict how many valid combinations could be there. You just cant put a counter there in second's solution.

### **Round 2:-**

#### Question 1

Design a byte encryption function. You have to design it.

#### Question 2

Now, he was asking some byte encryption algorithm from data structures, I said that I don't know any such except Huffman's so he asked me to make one. He wasn't satisfied, maybe he was looking for a trie or something.

#### Question 3

A sorted linked list is given, but a chunk somewhere in between is reversed, correct the linked list.

Eg:- 1->2->3->8->7->6->5->4->9

Becomes

1->2->3->4->5->6->7->8->9

**Round 3:-**

Question 1

Convert a doubly linked list into a binary search tree. Optimize it. Probably checking how the person thinks. Try to think of more solutions that could be possible.

Question 2

A stream of letters is coming, you have to display a message when every character has come through at least once, checking the thinking process here as well. Try to do this in linear time.

Thank You!