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# Print all subarrays using recursion

August 4, 2020 by Sumit Jain

Given an array, write a recursive program to print all the subarrays. See the example below –

## Example:

Input [] = {1, 2, 3, 4}

Output: [ 1 ] [ 1 2 ] [ 1 2 3 ] [ 1 2 3 4 ] [ 2 ] [ 2 3 ] [ 2 3 4 ] [ 3 ] [ 3 4 ] [ 4 ]

Input [] = {4, 6, 8}

Output: [ 4 ] [ 4 6 ] [ 4 6 8 ] [ 6 ] [ 6 8 ] [ 8 ]

## Approach: Recursion

Please click here to read about a non-recursive approach of this problem.- [Print all subarrays of a given array](#)

Let's take an example of array {1, 2, 3, 4}. If we observe the subarrays starting from 1 are [ 1 ][ 1 2 ][ 1 2 3 ][ 1 2 3 4 ]. So we fix the starting index to 0 and subarray = [1] and iterate till end and during iteration we will keep appending the elements to the subarray and print it so we will print [ 1 ][ 1 2 ][ 1 2 3 ][ 1 2 3 4 ]. Now move the starting index to 1 and subarray = [2] and repeat the same process during iteration and print [ 2 ][ 2 3 ][ 2 3 4 ]. So basically fix the index and print all the subarrays which starts from the fixed index and make a recursive call with index+1. See the code below for more understanding.

## Complete Code:

[Run This Code](#)

```
1 public class PrintSubArraysUsingRecursion {
2
3     public static void printSubArray(int [] input, int currIndex){
4
5         if(currIndex==input.length)
6             return;
7
8         //print all the subarray from currIndex to end
9         String result = "";
10        for (int i = currIndex; i <input.length ; i++) {
11            result += " " + input[i] + " ";
12            System.out.print "[" +result + " ] ";
13        }
14        printSubArray(input, currIndex+1);
15    }
16
17    public static void main(String[] args) {
```

```
18     int [] input = {4, 6, 8};
19     printSubArray(input, 0);
20 }
21 }
```

PrintSubArraysUsingRecursion.java hosted with ❤ by GitHub

[view raw](#)

## Output:

[ 4 ][ 4 6 ][ 4 6 8 ][ 6 ][ 6 8 ][ 8 ]

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- < Find Lexicographically smallest or largest substring of size k
- > Construct the Largest number from the given digits

More Problems

Find all subsets of size K from a given number N (1 to N)

Print all middle elements of the given matrix/2D array.

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Depth-First Search (DFS) in 2D Matrix/2D-Array - Recursive Solution

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Find all unique combinations of numbers (from 1 to 9 ) with sum to N

---

Print all steps to convert one string to another string

---

Count number of pairs in an array with sum = K

---

Find all unique combinations of exact K numbers (from 1 to 9 ) with sum to N

---

Print all subsets of an array with a sum equal to zero

---

Sort the indexes of the array as per the elements of the array

---

Find the number of pairs with even XOR

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---

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---

In an array, Duplicate the zeroes without expanding it

---

## Maximum Depth of Valid Nested Parentheses in an arithmetic expression

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