Largest Number

Given a list of non negative integers, arrange them such that they form the largest number.

For example, given `[3, 30, 34, 5, 9]`, the largest formed number is `9534330`.

Note: The result may be very large, so you need to return a string instead of an integer.

Credits:
Special thanks to @ts for adding this problem and creating all test cases.

Solution 1

```
public  String largestNumber(int[] num) {
    if(num==null || num.length==0)
        return "";
    String[] Snum = new String[num.length];
    for(int i=0;i<num.length;i++)
        Snum[i] = num[i]+"";

    Comparator<String> comp = new Comparator<String>(){
        @Override
        public int compare(String str1, String str2){
            String s1 = str1+str2;
            String s2 = str2+str1;
            return s1.compareTo(s2);
        }
    };

    Arrays.sort(Snum,comp);
    if(Snum[Snum.length-1].charAt(0)=='0')
        return "0";

    StringBuilder sb = new StringBuilder();

    for(String s: Snum)
        sb.insert(0, s);

    return sb.toString();

}
```

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Solution 2

```
class Solution {
public:
    string largestNumber(vector<int> &num) {
        vector<string> arr;
        for(auto i:num)
            arr.push_back(to_string(i));
        sort(begin(arr), end(arr), [](string &s1, string &s2){ return s1+s2>s2+s1
; });
        string res;
        for(auto s:arr)
            res+=s;
        while(res[0]=='0' && res.length()>1)
            res.erase(0,1);
        return  res;
    }
};
```

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Solution 3

The logic is pretty straightforward. Just compare number by convert it to string.

Thanks for Java 8, it makes code beautiful.

Java:

```
public class Solution {
    public String largestNumber(int[] num) {
        String[] array = Arrays.stream(num).mapToObj(String::valueOf).toArray(Str
ing[]::new);
        Arrays.sort(array, (String s1, String s2) -> (s2 + s1).compareTo(s1 + s2)
);
        return Arrays.stream(array).reduce((x, y) -> x.equals("0") ? y : x + y).g
et();
    }
}
```

Python:

```
class Solution:
    # @param num, a list of integers
    # @return a string
    def largestNumber(self, num):
        num = [str(x) for x in num]
        num.sort(cmp=lambda x, y: cmp(y+x, x+y))
        return ''.join(num).lstrip('0') or '0'
```

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