

Find the largest multiple of 2, 3 and 5

An array of size n is given. The array contains digits from 0 to 9. Generate the largest number using the digits in the array such that the number is divisible by 2, 3 and 5.

For example, if the arrays is {1, 8, 7, 6, 0}, output must be: 8760. And if the arrays is {7, 7, 7, 6}, output must be: "no number can be formed".

Source: [Amazon Interview | Set 7](#)

This problem is a variation of "[Find the largest multiple of 3](#)".

Since the number has to be divisible by 2 and 5, it has to have last digit as 0. So if the given array doesn't contain any zero, then no solution exists.

Once a 0 is available, extract 0 from the given array. Only thing left is, the number should be is divisible by 3 and the largest of all. Which has been discussed [here](#).

Thanks to [shashank](#) for suggesting this solution. Please write comments if you find anything incorrect, or you want to share more information about the topic discussed above.

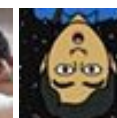
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1



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with the algorithm...



Vivek • 18 days ago

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^ | v •



Rajat • 8 months ago

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```
import java.util.*;
class max
{
    static ArrayList ll;
    static void perm1(int []a,int k,int n,int m)
    {
        if(k==m)
        {
            String s="";
            for(int i=0;i<m;i++) s="s+a[i];" long="" q="Long.parseLong(s);"
            if(q%2=="0&&q%3==0&&q%5==0)" ll.add(q);="" }="" else
            int="" t="a[k];" a[k]="a[j];" a[j]="t;" perm1(a,k+1,n,m);="" t="a[k];" a[k]="a[j];" a[j]=
            void="" main(string[]="" args)="" {="" ll="new" arraylist();="" int="" []a="new" int
            a[3]="6;" a[4]="0;" for(int="" i="1;i<6;i++)" {="" perm1(a,0,5,i);="" }="" system
            }="" }="">
```

^ | v .



pankaj · a year ago

the best way to do this is by sorting the array in descending order with zero in elements if not divisible by 3 then eliminating the n-1th element in array

^ | v .



Sambasiva · a year ago

Here is the simpler implementation of algorithm 2

<http://effprog.blogspot.in/201...>

1 ^ | v .



trial → Sambasiva · 18 days ago

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Lokesh → Sambasiva · a year ago

Thanks :)



kanhaiya · a year ago

I think the answer of the first example should be 8760 NOT 8160?



Kartik → kanhaiya · a year ago

Thanks for pointing this out. We have corrected the example.



Vivek → Kartik · 18 days ago

The output is 87610.



Vivek → Vivek · 18 days ago

Thats a mistake and please ignore

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