

CSC 231 HOMEWORK 2 FALL 2015

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Do the following problems.

1. Problem 2 on Page 216 of the class text book
2. Problem 6 on Page 216 of the class text book.
3. Show that n^3 is $\Omega(100n^2 + 500n + 200)$ by finding the constants K and N required by the definition.
4. Look up the static method `Integer.toString(int value)` in the Java documentation and write a short program to make sure you understand what it does.

Look up the `StringBuilder` class in the Java documentation if you are not already familiar with it.

Write a program that uses the `Integer.toString()` method to generate all subsets of a set of size n whose elements are the integers $1, 2, \dots, n$. The program should keep asking for set sizes until the user enters a size of 0.

Your program should work for integers $n \leq 32$, but of course I will test it only for reasonably small sizes of n .

Here is a sample input-output interaction.

```
Enter the size of a set: 3
[]
[3]
[2]
[2, 3]
[1]
[1, 3]
[1, 2]
[1, 2, 3]
Enter the size of a set: 1
[]
[1]
Enter the size of a set: 2
[]
[2]
[1]
[1, 2]
Enter the size of a set: 0
```

The subsets do not have to be generated in any particular order, as long as every subset is listed, and no subset is listed more than one time.

This is due Friday of Week 3 at midnight. Submit in electronic form by email. You may submit a Microsoft Word document, \LaTeX file, or pdf with solutions to

problems 1-4. For problem 4, submit a zipped up Netbeans folder containing your solution.