A Very Serious Problem

A Very Serious Problem

The Beer Store has N types of beer.

They have n_i bottles of type i

You can get as many 6-packs as you want for a fixed price, but ...

you can't put 2 identical bottles in any of the 6-packs.

How do you maximize your haul?

For example …

Let's look at 2-packs instead of 6-packs.

Suppose the stock is:

     Type 1 : 2 bottles

     Type 2 : 2 bottles

     Type 3 : 2 bottles

If we take (1,2) and (1,2) that's all we get.

For example ...

Let's look at 2-packs instead of 6-packs.

Suppose the stock is:

    Type 1 : 2 bottles
    Type 2 : 2 bottles
    Type 3 : 2 bottles

If we take (1,2) and (1,2) that's all we get.

If we take (1,2), (1,3) and (2,3) we get more.

CMPE/CISC-365*
Algorithms 1

Today

- Boring details
- Outline
- Actual content!

Administrivia:

Me: Robin Dawes, dawes@cs.queensu.ca

Marking scheme:

4 quizzes: 3 @ 23%
1 @ 11%

4 assignments: 4 @ 5%

- no make-up dates for missed quizzes
- first quiz will be on **September 27**

Course URL: http:sites.cs.queensu.ca/courses/cisc365

Things I like about this course:

- The material

- The students

- The text

- No final exam

- Real benefits for students

Course Outline:

The calendar says …

Principles of design, analysis and implementation of efficient algorithms. Case studies from a variety of areas illustrate divide and conquer methods, the greedy approach, branch and bound algorithms and dynamic programming.

and …

For the next 213 callers, we'll include an introduction to NP-Completeness too – at no extra charge!

!!! ACADEMIC INTEGRITY !!!

Don't be evil.

Course Syllabus:

Topics will be covered in the following sequence:

- *Complexity*
- *Divide and Conquer Algorithms*
- *Greedy Algorithms*
- *Dynamic Programming Algorithms*
- *Branch and Bound Algorithms*
- *NP-Complete Problems*
- *Approximation Algorithms*

And Now ...

Let The Games Begin!