

# Pseudocoding + PClassic

October 11th 2016



# Problems

1. Given the side length of a cube, find the volume
2. Given a list of cards, each with an integer value, find the range with the highest sum of cards
3. Given today's date (October 11<sup>th</sup> 2016), and a given number of days to go forward into the future, determine the new date
4. Given a necklace of red, blue and white (wildcard) beads, you break the necklace at a certain point, collect necklaces that are the same until you reach a different color, for both sides, find the location where the maximum break point is
5. Given dials, moving a dial counterclockwise, moves the dial to the left clockwise, given initial positions, find min number of moves to make all dials 0

# Problem 1

Given a side length  $s$ , find the volume of a cube with such a side length ( $s < 10^3$ ), find the volume

Example:

Input: 2

Output: 8

# Problem 2

Given a list of cards, each with an integer value, find the starting and stopping points, such that the cards from start-stop has the maximum sum .Ties do not matter. The number of cards  $< 10^3$

Example:

Input: -1,1,4 ,-2,5

Output: 2,5 (1+4+(-2)+5) = 8 is the maximum sum

# Problem 3

Given today's date as October 11<sup>th</sup> 2016, and given a number of days to go in the future, determine the new date. Take into account leap years (divisible by 4 or 400, but not 100). Number of days  $< 10^5$

Example:

Input: 44

Answer: November 24<sup>th</sup> 2016

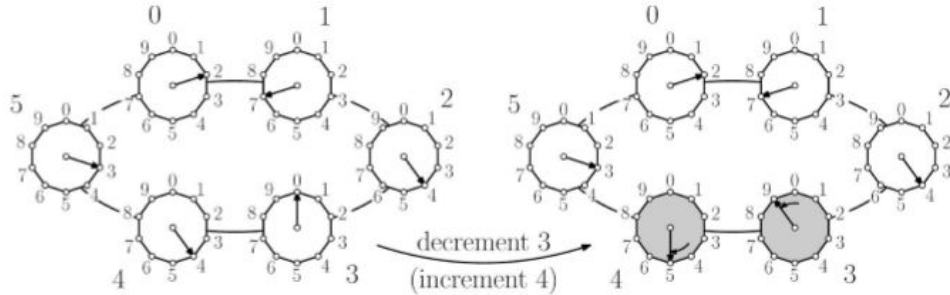
# Problem 4

You are given a necklace of length  $N$  with white, red, and blue beads in a random arrangement. Suppose you break the necklace at some point and collect beads of the same color until you reach a bead that is a different color, doing this from both sides. A white bead may represent either a blue or a red bead. Find the maximum number beads that can be collected in this fashion for a necklace of length  $< 1000$ .

(<http://train.usaco.org/usacoprob2?a=68oxt2tnJIA&S=beads>)

(For this one, the max is 5) R r b w b w

# Problem 5



Given a series of dials, as explained before,  
(<http://www.cs.umd.edu/Outreach/hsContest16/questions/problems.pdf> 7),  
find the minimum set of moves needed to get the dials back to all zeros, if its  
not possible, print -1.