

# Analysis of Algorithms: Assignment 1

Due date: January 19 (Wednesday)

## Problem 1 (5 points)

Write an algorithm that finds the *most frequent element* in an integer array  $A[1..n]$ ; that is, your algorithm must identify the element that occurs the greatest number of times. For example, if the input array is  $\langle 4, 1, 4, 6, 1, 4 \rangle$ , then the most frequent element is 4.

If the array has several most frequent elements, your algorithm may return any of them. For example, if the array is  $\langle 4, 1, 4, 6, 1 \rangle$ , the algorithm may return either 1 or 4.

## Problem 2 (5 points)

Estimate the worst-case running time of your algorithm, using the method described in class.