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.