

Homework 6

CS 3343 – Fall 2006
Tom Bylander, Instructor

assigned October 5, 2006
due October 13, 2006

Your solutions must be submitted as a document to WebCT.

1. (10 pts.) Do Exercise 5.1.4.
2. (20 pts.) Do Exercise 5.1.7.
3. (20 pts.) Do Exercise 5.2.1.
4. (20 pts.) Generate Gray codes for $n = 1$, $n = 2$, $n = 3$, $n = 4$, and $n = 5$, in which you start from the bit strings 1, 10, 101, 1010, and 10101, respectively.
5. (20 pts.) In this variation of the Fake Coin problem, we do not know whether fake coins weigh more or less than genuine coins, and we do not know how many fake coins there are. Despite these obstacles, design an efficient algorithm (counting the number of weighings) that ends up with two coins with different weights.
6. (10 pts.) Using the partitioning method to find the median, illustrate how the median of the following list is determined.

P, A, R, T, I, T, I, O, N

Use the partition algorithm from the book, showing the result after each swap.