Lab # 12:

Please e-mail code, graphs and answers to questions to [afodor@uncc.edu](mailto:afodor@uncc.edu) with the subject Lab #12.

Please have lab submitted (whatever you have) before class on Wed, April 26.

1. Given the dishonest casino:



and transition probabilities from the initial state to the fair and loaded state of 0.5

and transition probabilities from the fair and loaded state to the termination state of 0.001

Calculate the posterior probability: P(Πi = k| X)

for the fair and loaded state for each dice roll for the series { 1, 6, 6 }.

Show the results in a 3,2 table (3 rows – one for each roll of the dice; 2 columns, one for the fair state and one for the loaded state.)

(You can do this by hand or from code…)

(2) For extra credit: using my Java code base, or another code base, or writing your own code, generate a 1,000 rolls from the above Markov chain. Then do posterior decoding to calculate the posterior probability for each roll. How often is the P(Πi = k| X) >0.5 when the true state is actually loaded?