Lab 7
CS114 Spring 2018
Markov Chains and Hidden Markov Models

1. **Markov Chain**

	Cold	Hot
π =	0.5	0.5

A (transition matrix) =

	Cold	Hot
Cold	0.6	0.4
Hot	0.5	0.5

Compute the probability that the third day is a cold day.

2. **Hidden Markov Model**

	Cold	Hot
π =	0.5	0.5

A (transition matrix) =

	Cold	Hot
Cold	0.6	0.4
Hot	0.5	0.5

B (emission matrix) =

	Good	Mediocre	Bad
Cold	0.2	0.3	0.5
Hot	0.6	0.3	0.1

a. Suppose that the observation sequence is (Good, Good, Bad). Use the forward algorithm to compute the likelihood P(O).
b. Compute the probability that the third day is a cold day.