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Hidden Markov Models Answers

3. The most likely sequence of states for this sequence of observations is still 'Hot Hot Hot'. It's not too much of a surprise given that the likelihood to start on a Hot day is 0.8, whereas the probability to start on a Cold day is 0.2.

4/5. The probability of the first day being Hot is 0.16, whereas the probability of the first day being Cold is 0.10, this makes sense because he is more likely to eat one ice cream on a Hot day than on a Cold day, but he is more likely to eat multiple ice creams on Hot days which is why the probability he eats one ice cream on the Hot day is rather low. However, these probabilities come from the start probabilities, transition probabilities and emission probabilities. When we look at the second day, we see that it is likelier to be Cold.

6. The most likely sequence of states leading to the observations 1 1 3 is Hot Cold Hot, however when we read the output it tells us that Hot Hot Hot is the likeliest sequence. It gives this answer because it considers all possibilities of combinations.