BMI/CS 576 – Day 17

- Today
  - Markov chains
- Thursday
  - Intro to hidden Markov models

Midterms graded

- Solutions on Canvas (in announcement)
- Regrade policy on Canvas (in announcement)
- Some stats:
 - Mean grade = 89.6%
  - Median grade = 93%

HW3 posted

- Due next Thursday
- Shorter programming component
  - Branch and bound

Quiz

Suppose that $X = X_1, X_2, \ldots, X_L$ is distributed according to a Markov model as described in the lecture. Which of the following statements is true?

○ X_i is conditionally independent of X_{i+1} given X_{i-1}

○ X_L is independent of X_1

○ X_i is conditionally independent of X_{i-2} given X_{i-1}

○ X_i is independent of X_{i-2}

$$X_1 \rightarrow X_2 \rightarrow \ldots \rightarrow X_{i-2} \rightarrow X_{i-1} \rightarrow X_i \rightarrow X_{i+1} \rightarrow \ldots$$
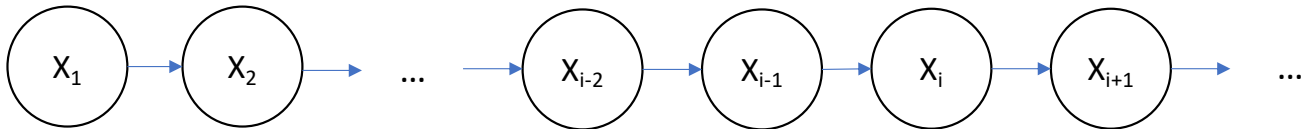
Map example

Consider the following process:
- Start at some intersection
- Repeat:
    - Pick a direction to travel (perhaps uniformly at random) given the current intersection
    - Travel to the next intersection
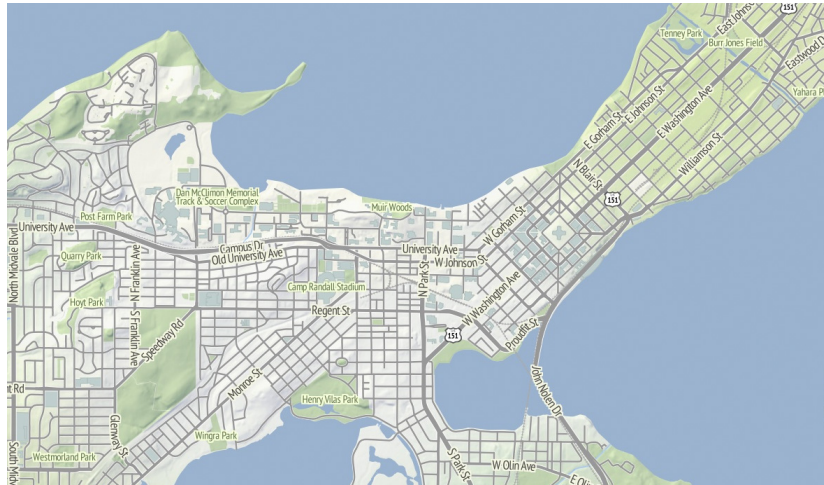
Sequence of intersections visited is a Markov chain