Discrete Response Model Lecture 5

Models for Count Response, Discrete Response Model Evaluation, and Model Selection

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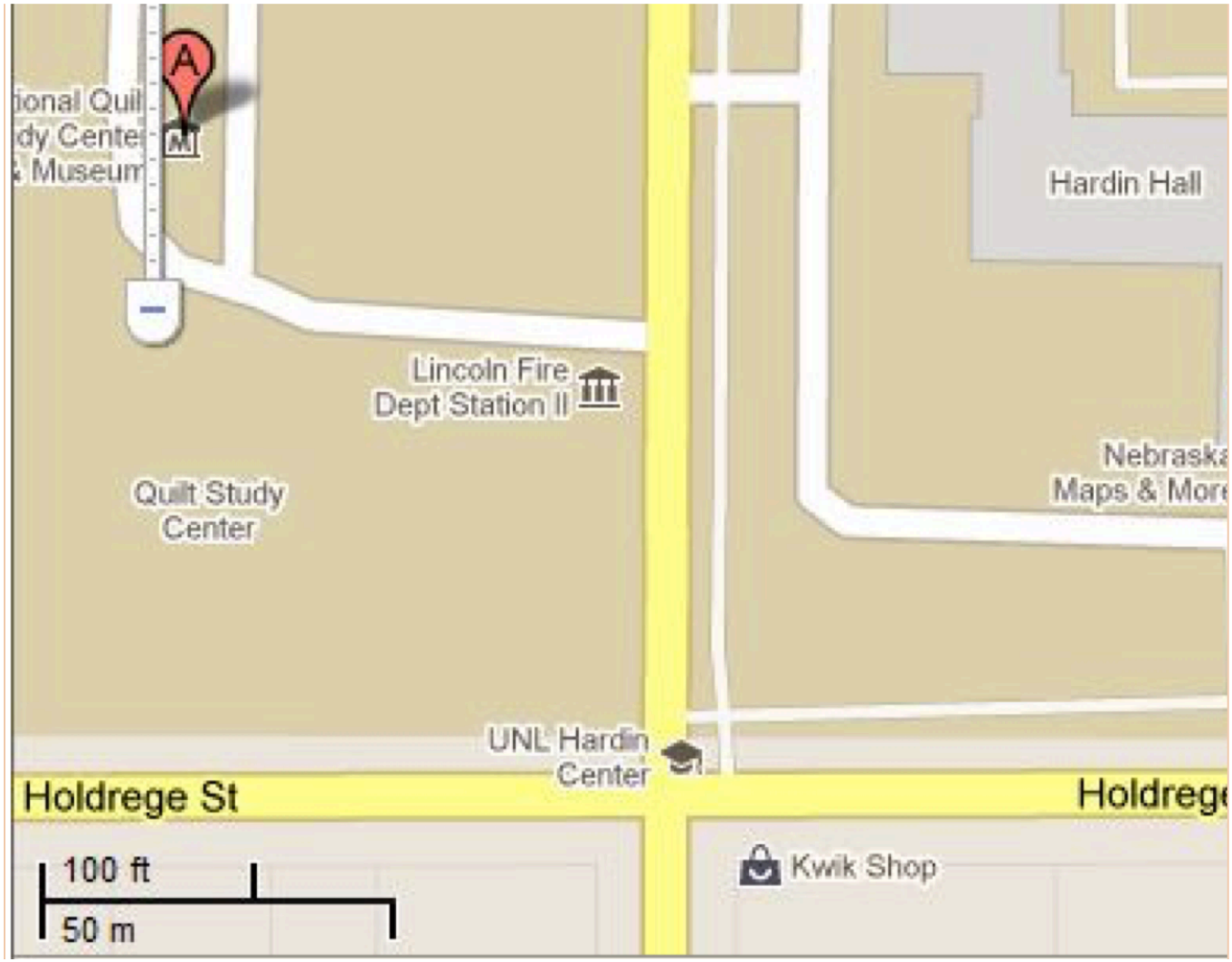
An Example

Example: 33rd and Holdrege Streets

The intersection at 33rd and Holdrege Streets is a typical north-south/east-west, four-way intersection.



Example

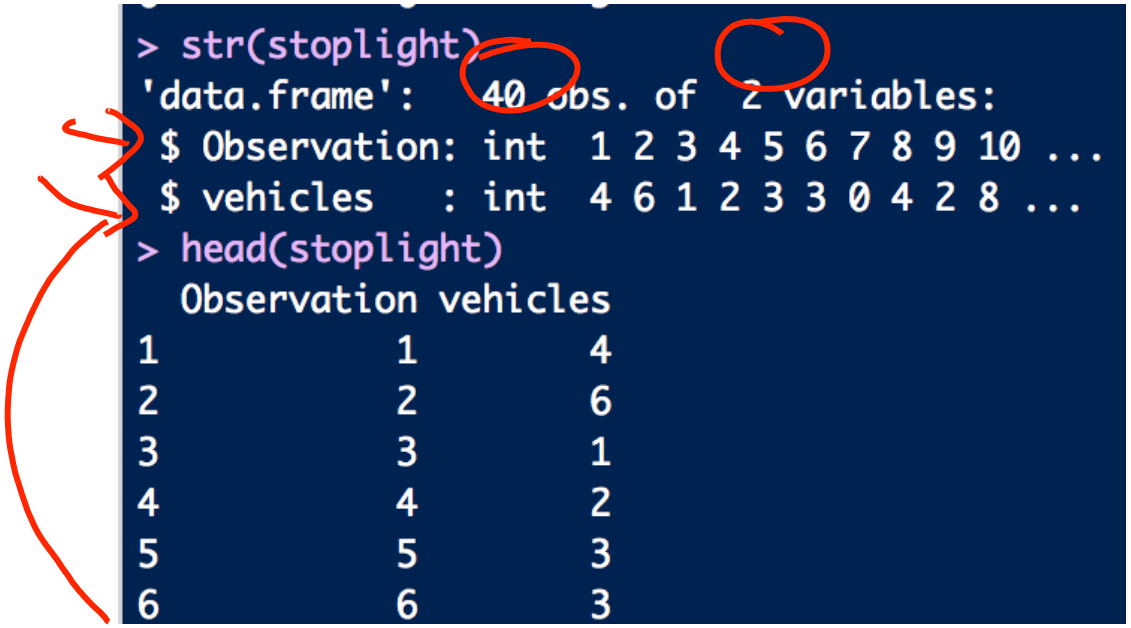
A picture taken from a location northwest of the intersection.

- Approximately 150 feet north of the intersection is a fire station located on the west side of the street.

- A back-up of vehicles at the stoplight waiting to go south could block the fire station's driveway, which would prevent emergency vehicles from exiting the station.
- **Question: What is the probability that this could happen?**

Example

To examine this more closely, a sample of **40 consecutive stoplight cycles** from 3:25 PM to 4:05 PM on a non-holiday weekday was taken, and the number of vehicles stopped at the stoplight going south were counted.



```
> str(stoplight)
'data.frame':   40 obs. of  2 variables:
 $ Observation: int  1 2 3 4 5 6 7 8 9 10 ...
 $ vehicles   : int  4 6 1 2 3 3 0 4 2 8 ...
> head(stoplight)
  Observation vehicles
1           1        4
2           2        6
3           3        1
4           4        2
5           5        3
6           6        3
```

Note that there were no vehicles remaining in the intersection for more than one stoplight cycle. Why is this important to know?

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