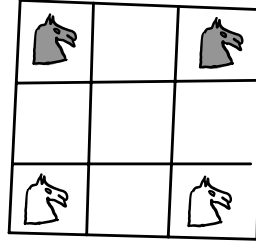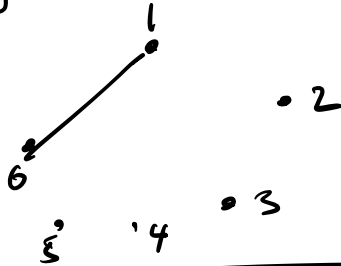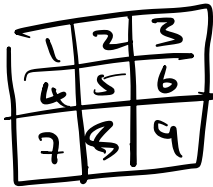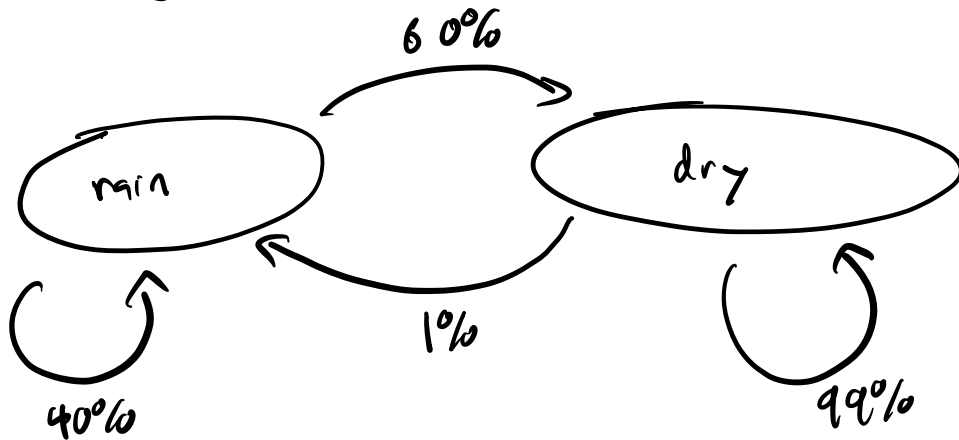**Puzzler** What is the fewest number of moves required for the white & black knights to exchange positions? (no capturing allowed)
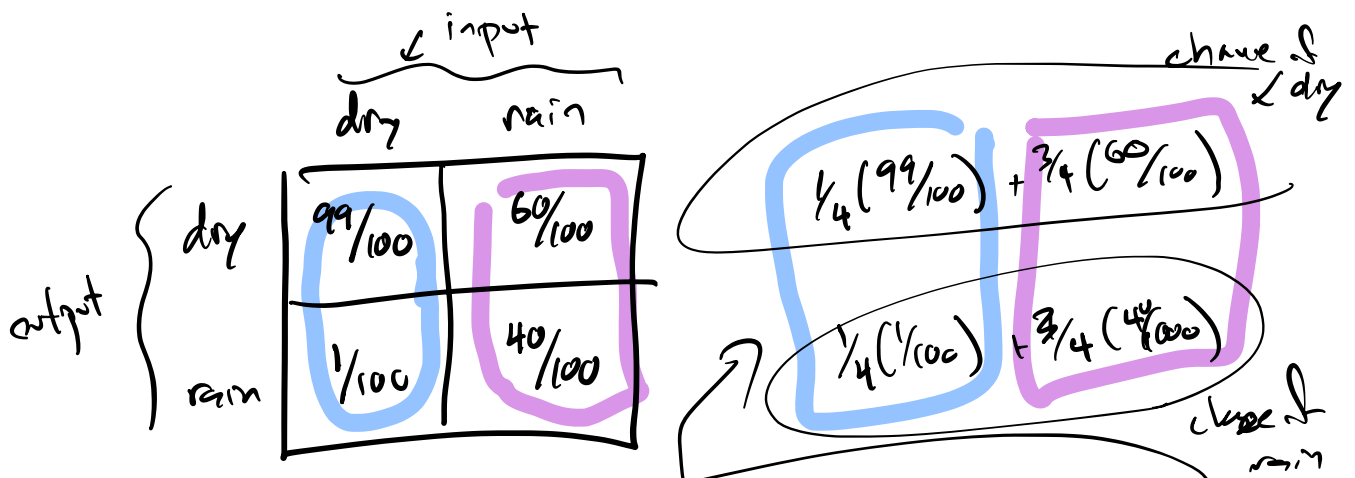

Play with some generative/prediction models
- handwriting recognition   - text generation.

Markov & Pushkin.

previously — probability focused on independent random events.

60%

rain   dry

40%   1%   99%

4% rain
3%
2%

← input

dry   rain

	dry	rain
output { dry	99/100	60/100
rain	1/100	40/100

chance of dry →

$$\frac{1}{4}\left(\frac{99}{100}\right) + \frac{3}{4}\left(\frac{60}{100}\right)$$

$$\frac{1}{4}\left(\frac{1}{100}\right) + \frac{3}{4}\left(\frac{44}{100}\right)$$
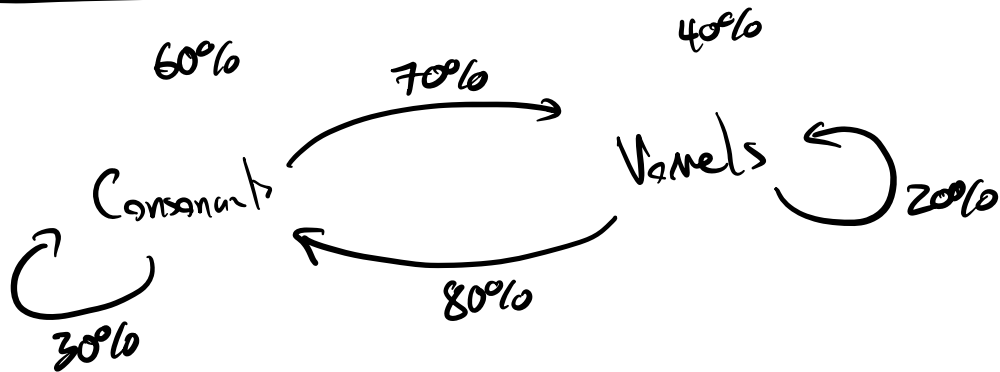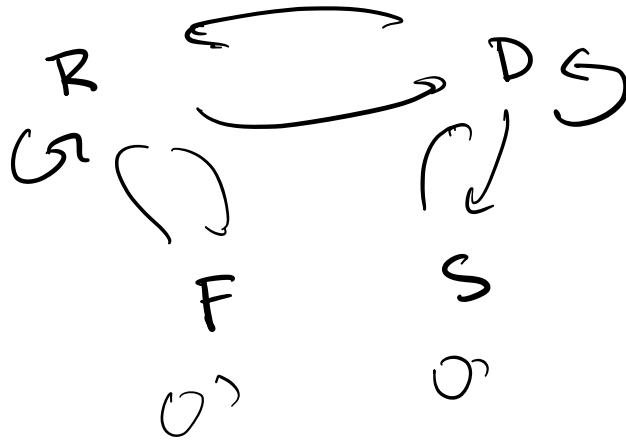
chance of rain

know

1/4 chance of dry

3/4 rain

$$\begin{bmatrix} 99/100 & 60/100 \\ 1/100 & 40/100 \end{bmatrix} \begin{bmatrix} 1/4 \\ 3/4 \end{bmatrix}$$
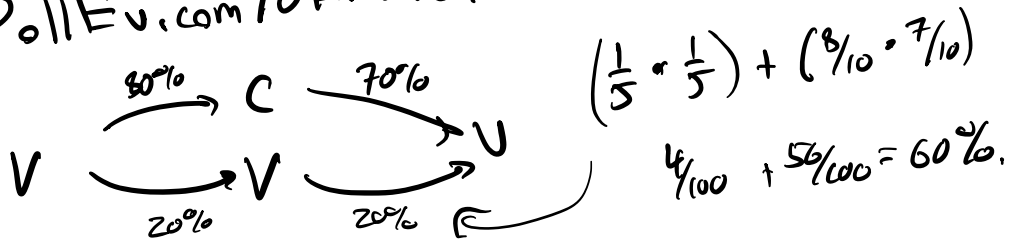
$$\begin{bmatrix} 99/100 & 60/100 \\ 1/100 & 40/100 \end{bmatrix} \begin{bmatrix} 99/100 & 60/100 \\ 1/100 & 40/100 \end{bmatrix} = \begin{bmatrix} 2 \text{ days.} \end{bmatrix}$$

Markov Process

Has distinct states & transition probabilities

R
G
D S

F

S

60%

70%

40%

Consonant

Vowels

20%

80%

30%

PollEv.com/dkrasley235

80% → C → 70%

V   V   V

20%   20%

$\left(\frac{1}{5} \cdot \frac{1}{5}\right) + \left(\frac{8}{10} \cdot \frac{7}{10}\right)$

$\frac{4}{100} + \frac{56}{100} = 60\%$

nthalshoed

cluth—es

2 chractrs "bigrams"

ab   aa   fh

abe

Rough plan:

- Liner regression
- Newton's method.