

MARKOV CHAIN

→ X_t DISCRETE

RANDOM
VARIABLE

$$\begin{bmatrix} P_A(t) \\ P_B(t) \\ P_C(t) \end{bmatrix} = M_{3 \times 3} \cdot \begin{bmatrix} P_A(t-1) \\ P_B(t-1) \\ P_C(t-1) \end{bmatrix}$$

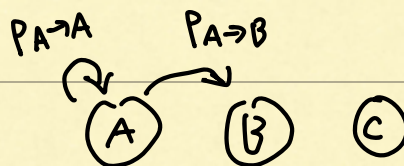


$$M = \begin{bmatrix} P_{A \rightarrow A} & P_{B \rightarrow A} & P_{C \rightarrow A} \\ P_{A \rightarrow B} & P_{B \rightarrow B} & \dots \\ P_{A \rightarrow C} & \dots & P_{C \rightarrow C} \end{bmatrix}$$

TRANSITION
MATRIX

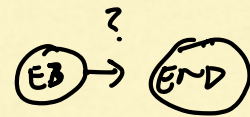


COLUMNS
MUST $\Sigma = 1$



PS 2

	START	E1	E2	E3	I	END
START	0	0	0	0	0	0
E1	$P_{START \rightarrow E1}$	1	0	0	$P_{E3 \rightarrow E1}$	$P_{E3 \rightarrow I}$
E2	0	1	0	0	0	0
E3	0	0	1	0	0	0
I	0	0	0	0	0	0
END	0	0	0	0	1	?



$$P_{E3 \rightarrow END} = \frac{1}{20,000}$$