Homework2

Assign

$$P(q_i \mid q_1 \ldots q_{i-1}) = P(q_i \mid q_{i-1})$$

$$a_{ij} \geq 0; \forall j, i$$

$$\sum_{j=1}^{N} a_{ij} = 1; \forall i$$

We assume that once a day the weather is observed as being one of the following:

State1: rain or snow

State2: cloudy

State3: sunny.

We postulate that the weather on day t is characterized by one of the three states above, and the matrix A of the state-transition probabilities is

$$A = \{a_{ij}\} = \begin{bmatrix} 0.4 & 0.3 & 0.3 \\ 0.2 & 0.6 & 0.2 \\ 0.1 & 0.1 & 0.8 \end{bmatrix}$$

Problem What is the probability that the weather for 8 consecutive days is “sun-sun-sun-rain-rain-sun-cloudy-sun”?