Assignment:- 1 (10.15.1.7)

CS22BTECH11001

Aayush Adlakha

Problem: It is given that in a group of 3 students, the probability of 2 students not having the same birthday is 0.992. What is the probability that the 2 students have the same birthday?

Solution: Let us define E as the event that no 2 students, in a group of 3 share a birthday

$$P(E) = 0.992 \qquad (1)$$

We are asked to find the probability that 2 students, in a group of 3 share a birthday. This is the event $\overline{E}$.

We know that,

$$P(E) + P(\overline{E}) = 1 \qquad (2)$$

From (1) and (2)

$$P(\overline{E}) = 1 - 0.992$$

$$P(\overline{E}) = 0.008$$