AI1110: Probability and Random Variables Assignment 1

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10.15.1.6: Question: A bag contains lemon flavoured candies only. Malini takes out one candy without looking into the bag. What is the probability that she takes out:

1) an orange flavoured candy?
2) a lemon flavoured candy?

Solution:

- Let the total number of candies in the bag be: n
- Let **O** be the event that an orange flavoured candy is taken out
- Let **L** be the event that a lemon flavoured candy is taken out

We know that probability of an event E:

$$\Pr(E) = \frac{\text{Number of outcomes favourable to E}}{\text{Total number of oucomes}} \tag{1}$$

1) The number of favourable outcomes for **O** is 0. So, from (1):

$$\Pr(O) = \frac{0}{n} \tag{2}$$
$$= 0 \tag{3}$$

Hence, the probability of getting an orange flavoured candy is 0.

2) The number of favourable outcomes for **L** is n. So, from (1):

$$\Pr(L) = \frac{n}{n} \tag{4}$$
$$= 1 \tag{5}$$

Hence, the probability of getting a lemon flavoured candy is 1.