Assignment-4

EE22BTECH11012-A.Chhatrapati

Question 11.16.3.18)In a non-leap year, the probability of having 53 tuesdays or 53 wednesdays is
Solution: A non-leap year has a total of 365 days, and a week has 7 days.
So it can be expressed as

$$365 days = 52 \times 7 + 1 day$$
$$(1)$$
$$\implies 52 \text{ tuesdays or wednesdays}$$
$$(2)$$
$$\text{Random variable X denotes the day of a week}$$
$$(3)$$
$$p_X(k) = \frac{1}{7}(1 < k < 7)$$
$$(4)$$

So the probability of extra day being tuesday or wednesday is
$$(5)$$
$$p_X(3) + p_X(4) = \frac{1}{7} + \frac{1}{7} = \frac{2}{7}$$
$$(6)$$