

AI1103 : Assignment 2

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Download all python codes from

<https://github.com/Santosh-Dhaladhuli2003/AI1103/blob/main/Assignment%202/Assignment%202.py>

and latex codes from

<https://github.com/Santosh-Dhaladhuli2003/AI1103/blob/main/Assignment%202/Assignment%202.tex>

1 GATE EE 2013 QUESTION No. 61

What is the chance that a leap year, selected at random, will contain 53 Saturdays?

(A) $\frac{2}{7}$ (B) $\frac{3}{7}$ (C) $\frac{1}{7}$ (D) $\frac{5}{7}$

2 SOLUTION

Let X be a random variable that denotes the number of Saturdays in a leap year.

\Rightarrow No of days in a leap year = 366 Days

No of complete weeks in a leap year = $\lfloor \frac{366}{7} \rfloor = 52$

\therefore We Define, $X \in 0, 1$

$\Pr(X = 0) \rightarrow$ denotes for 52 Saturdays

$\Pr(X = 1) \rightarrow$ denotes for 53 Saturdays

\Rightarrow Remaining Days = $366 - (52 \times 7) = 2$

$\Rightarrow \Pr(X = 1) = \frac{2}{7}$

\therefore The correct answer is **Option A**

