

Assignment 2

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Download all python codes from

<https://github.com/Adarsh541/AI1103-prob-and-ranvar/blob/main/Assignment2/codes/assignment2.py>

and latex-tikz codes from

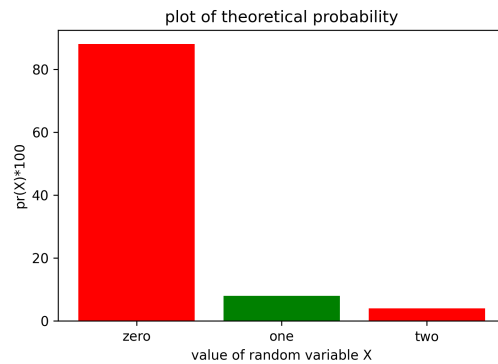
<https://github.com/Adarsh541/AI1103-prob-and-ranvar/blob/main/Assignment2/Assignment2.tex>

ii) The required probability is

$$p = \Pr(X = 0) + \Pr(X = 1) \quad (2.0.4)$$

$$= \frac{88}{100} + \frac{8}{100} \quad (2.0.5)$$

$$= 0.96 \quad (2.0.6)$$



1 PROBLEM(5.19)

A carton consists of 100 shirts of which 88 are good, 8 have minor defects and 4 have major defects. Jimmy, a trader, will only accept the shirts which are good, but Sujatha, another trader, will only reject the shirts which have major defects. One shirt is drawn at random from the carton. What is the probability that

- i) it is acceptable to jimmy?
- ii) it is acceptable to Sujatha?

2 SOLUTION(5.19)

Let random variable $X \in \{0, 1, 2\}$ denote the outcomes of experiment of drawing a shirt from the carton as shown in Table 2

TABLE 2

Type of shirt	X	number	Pr (X)
good	0	$n(X=0) = 88$	$\frac{88}{100}$
minor defect	1	$n(X=1) = 8$	$\frac{8}{100}$
major defect	2	$n(X=2) = 4$	$\frac{4}{100}$

i) The required probability is

$$p = \Pr(X = 0) \quad (2.0.1)$$

$$= \frac{88}{100} \quad (2.0.2)$$

$$= 0.88 \quad (2.0.3)$$