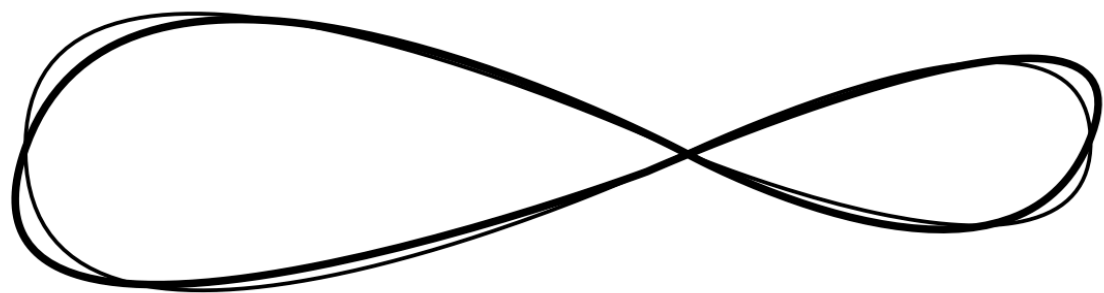


How many bugs
do we have?

?

Árpád Tóth

CEO

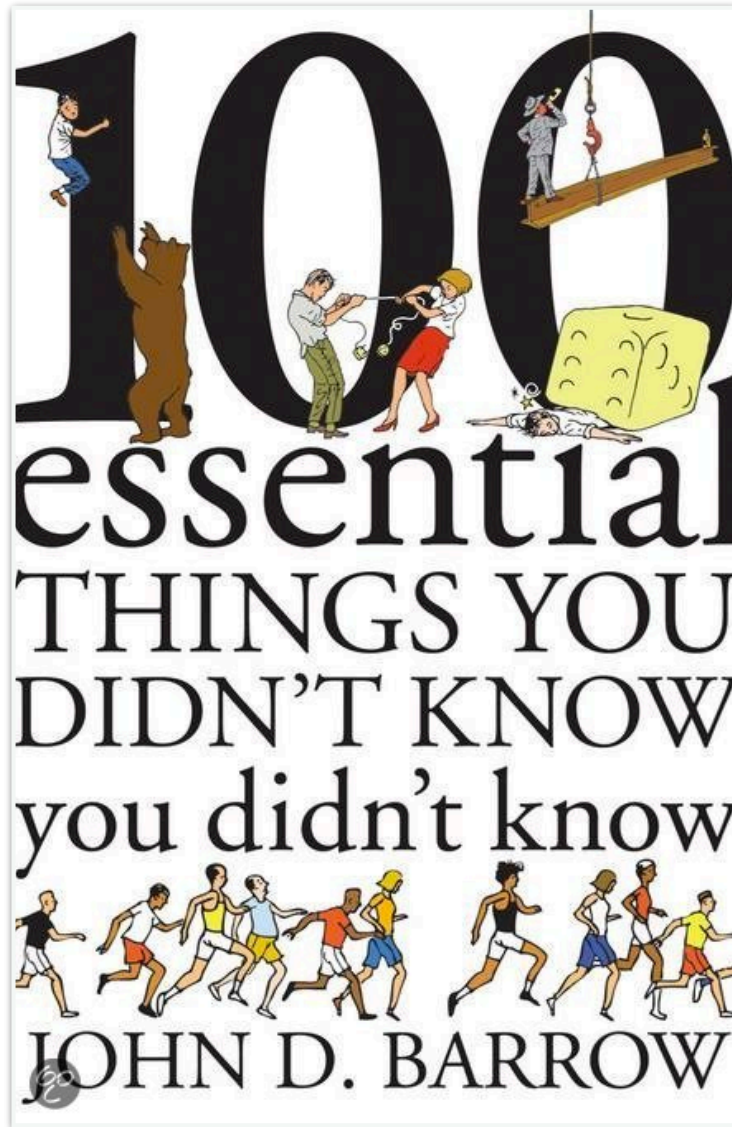


EVERTEST

20 minutes







4

Independence Day

I read that there's about 1 chance in 1000 that someone will board an airplane carrying a bomb. So I started carrying a bomb with me on every flight I take; I figure the odds against two people having bombs are astronomical.

Anon.

Independence Day, 4 July 1977 is a date I remember well. Besides being one of the hottest days in England for many years, it was the day of my doctoral thesis examination in Oxford. Independence, albeit of a slightly different sort, turned out to be of some importance because the first question the examiners asked me wasn't about cosmology, the subject of the thesis, at all. It was about statistics. One of the examiners had found 32 typographical errors in the thesis (these were the days before word-processors and schpel-chequers). The other had found 23. The question was: how many more might there be which neither of them had found? After a bit of checking pieces of paper, it turned out that 16 of the mistakes had been found by both of the examiners. Knowing this information, it is surprising that you can give an answer as long as you assume that the two examiners work independently of each other, so that the chance of one finding a mistake is not affected by whether or not the other examiner finds a mistake.

Let's suppose the two examiners found A and B errors respectively and that they found C of them in common. Now assume

23

23

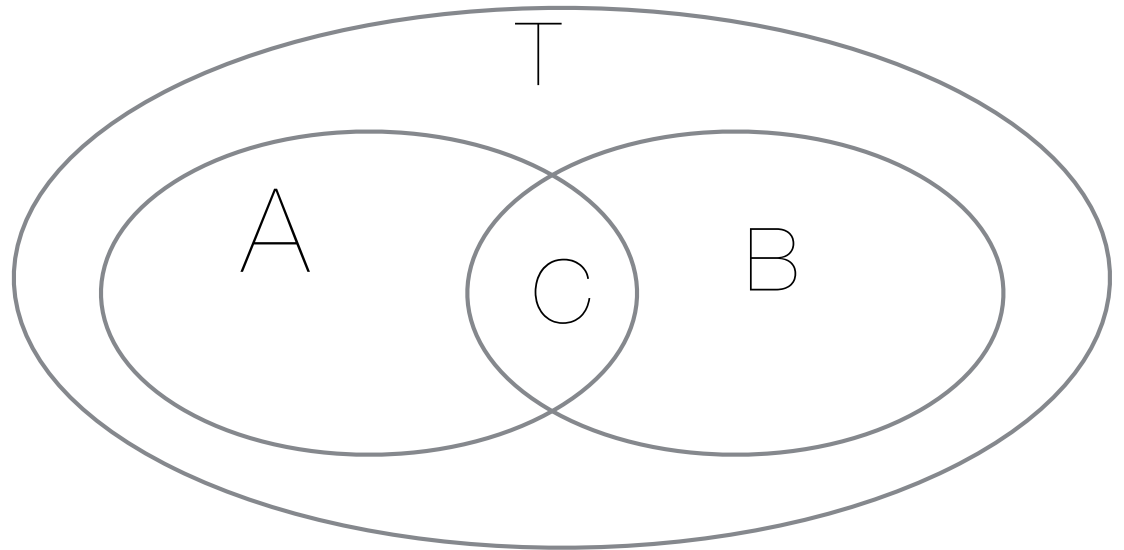
32

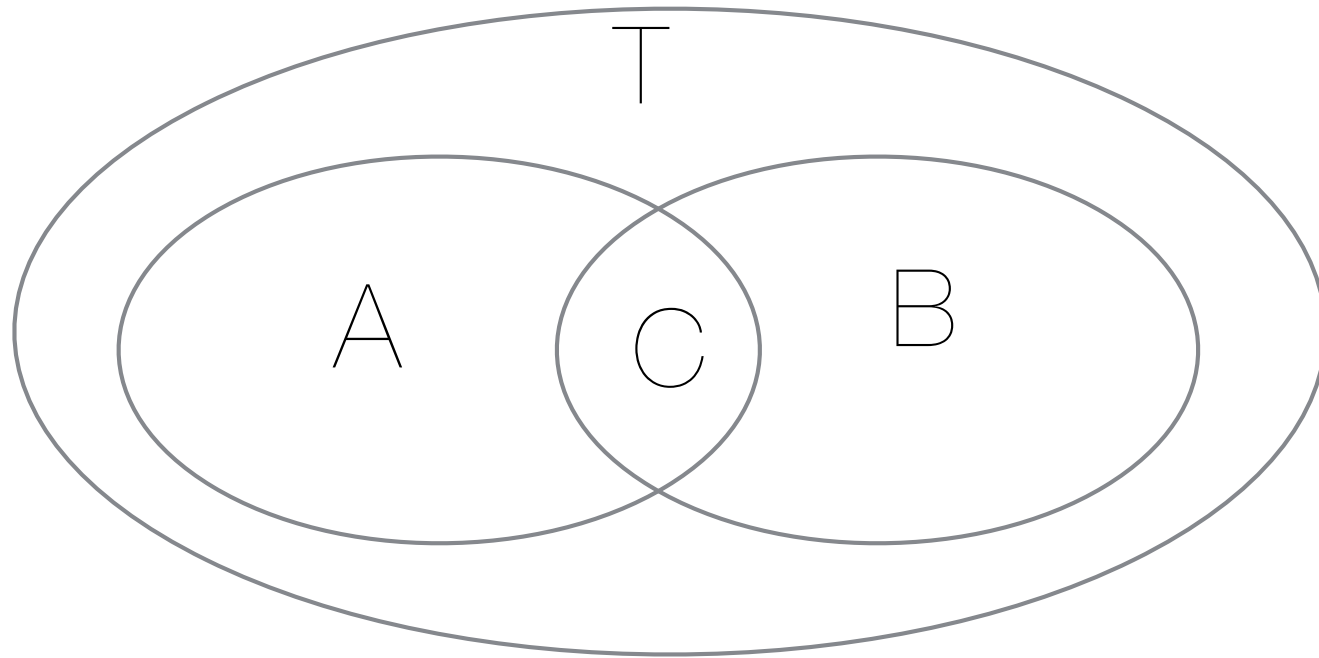
How many is not
found?

Approximately 7 typo
mistakes are not
found

Is it applicable in
testing?

Tester A:	A
Tester B:	B
Common:	C
All:	T

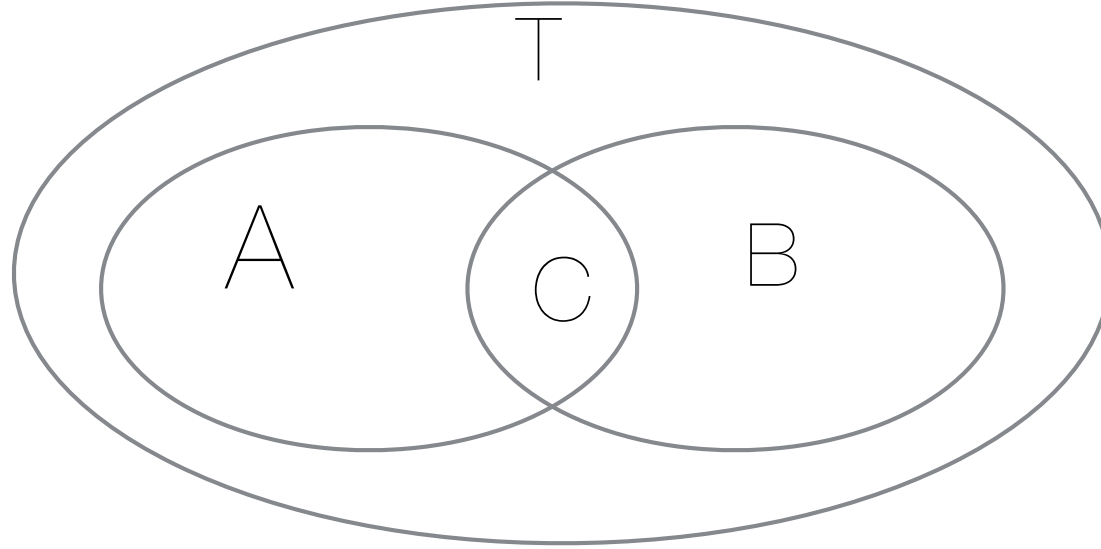




$$A = aT$$

$$B = bT$$

$$C = abT$$



$$\begin{aligned} A &= aT \\ B &= bT \\ C &= abT \end{aligned}$$

$$\begin{aligned} AB &= abT^2 = CT \\ AB/C &= T \end{aligned}$$

$$\frac{\text{Found by A} \times \text{Found by B}}{\text{Common}} = \text{Total}$$

The Lincoln index is a statistical measure to estimate the number of cases that have not yet been observed.

Limitations

Testers find every bug
with the same probability.

Testers find every bug
with the same probability.

NOT TRUE

This is only a
heuristics.

How should we
apply it?

Exploratory Testing

Well defined
scope

Time-frame

Record the issues one-by-one. Check the common ones after the session.

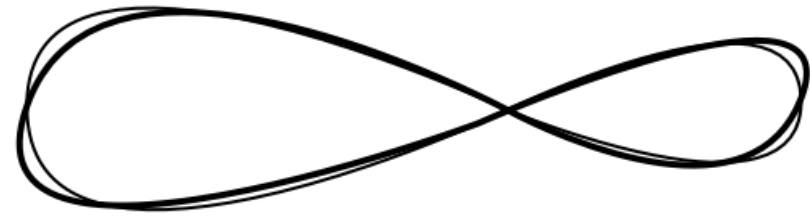
Calculate the total
number

Based on the result you you
can schedule further
sessions.

If you satisfy with the number
(it is close) you can stop. It
could be good exit criteria.

Did you try the method?
Share your experiences!

arpi@evertest.io



EVERTEST

arpi@evertest.io