DYALOG

Elsinore 2019

TamStat 2019

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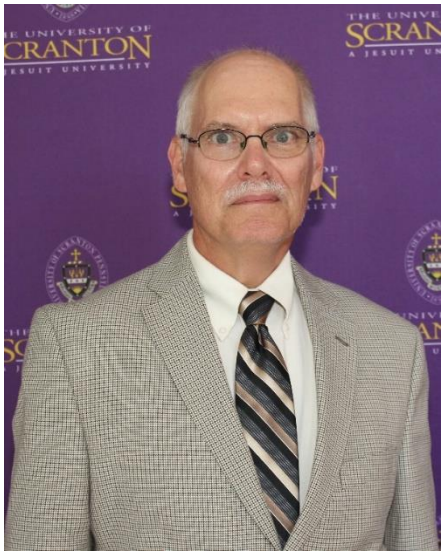
TamStat History

Dr Stephen Mansour tamstat.com



dyalog.tv

- Dyalog '14 Taming Statistics with Limited Domain Operators
- Dyalog '15 TamStat, a Statistical Package
- Dyalog '18 Taming Statistics with TamStat

TamStat: Why another statistical package?

Taming Statistics with TamStat: Arrays

Data naturally comes in array form:

Marriage	Pot	HealthCare	State	Sex	Party
5	4	2	PA	M	R
1	5	1	PA	F	D
1	4	3	MD	M	D
1	3	2	PA	M	D

Taming Statistics with TamStat: Operators

R, Excel, Minitab

Many functions for each probability distribution

TamStat

Each probability distribution has a single function

Mensa is the largest and oldest high IQ society in the world.[3][4][5] It is a non-profit organization open to people who score at the 98th percentile or higher on a standardised, supervised IQ or other approved intelligence test.[6][7] Mensa formally comprises national groups and the umbrella organisation **Mensa International**, with a registered office in

Mensa International

So what IQ do I need?

Let's tame this question!

Taming Statistics with TamStat: Operators

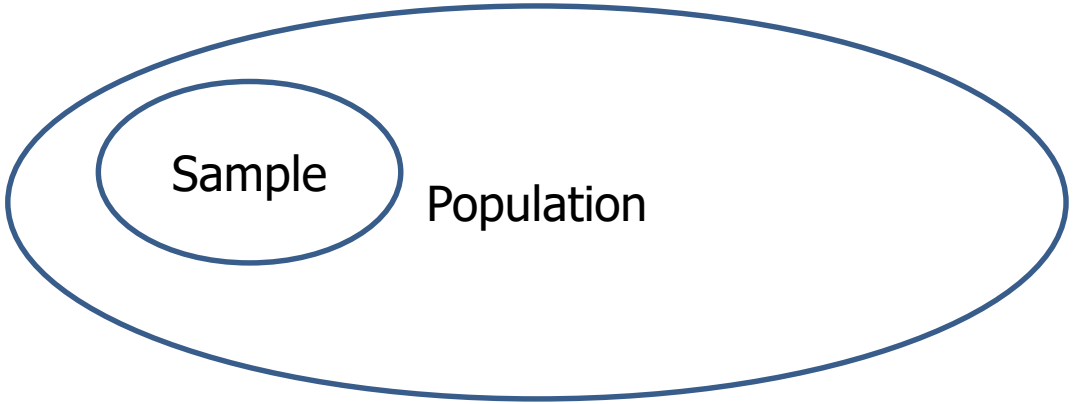
$\mu = 100$
$\sigma = 15$
$P = 98$

	Excel	TamStat
		"at the 98th percentile or higher"
Critical Value	=NORM.INV(0.98,100,15)	`100 15 normal criticalValue ≥ 0.98` `130.8`
Probability	=1-NORM.DIST(131,100,15,1)	`100 15 normal probability ≥ 131` `0.019`

Cross-platform GUI

- MiServer-based cross-platform GUI
  - Now with HTMLRenderer/DUI

Confidence intervals



What is the true population mean height?

Let's tame this question!

Step	TamStat Expression
Estimate the sample mean: $\bar{x} = \frac{\sum x}{n}$	`XBAR←mean D.Height` `68.776`
Estimate the standard error: $s_{\bar{X}} = \sqrt{\frac{s}{n}}$	`SX ← (sdev D.Height)div sqrt count D.Height` `0.72614`
Find the critical Value: $t_{\alpha/2}$	`T ← (N-1) tDist criticalValue < 0.05 div 2` `2.0262`
Find the Margin of Error: $E = t_{\alpha/2} s_p$	`E ← SX times T` `1.4713`
Calculate the confidence Interval: $\bar{x} \mp E$	`XBAR(-,+)E` `67.305 70.247`