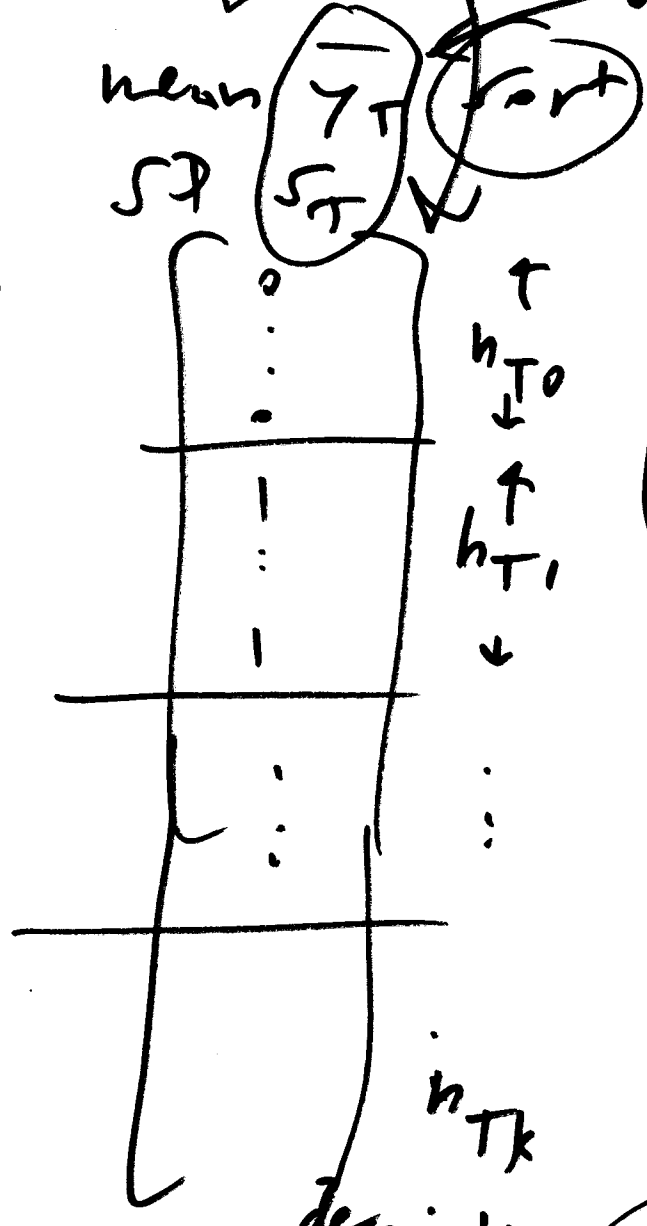
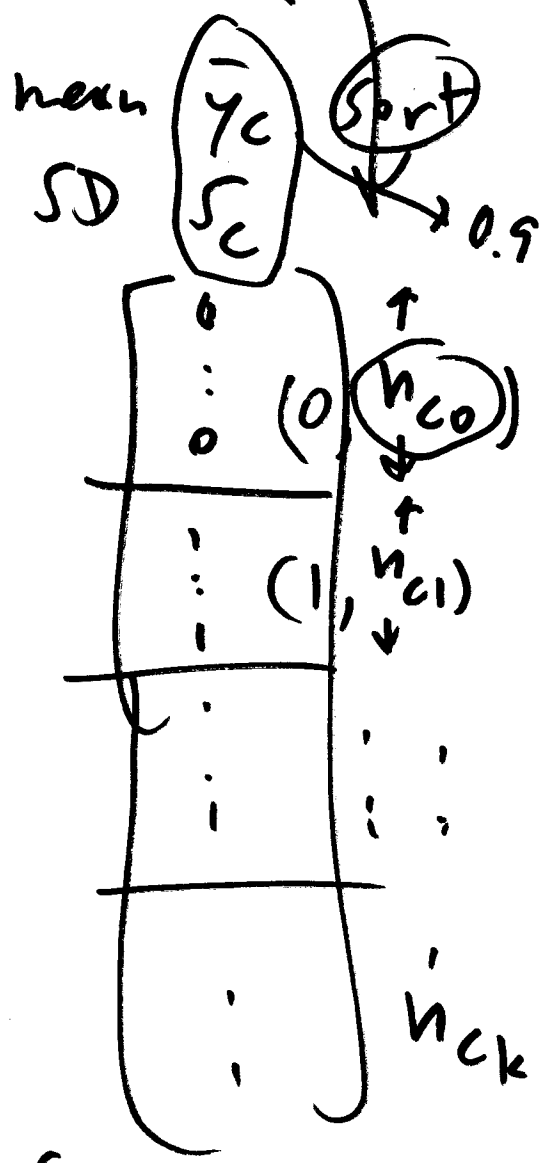
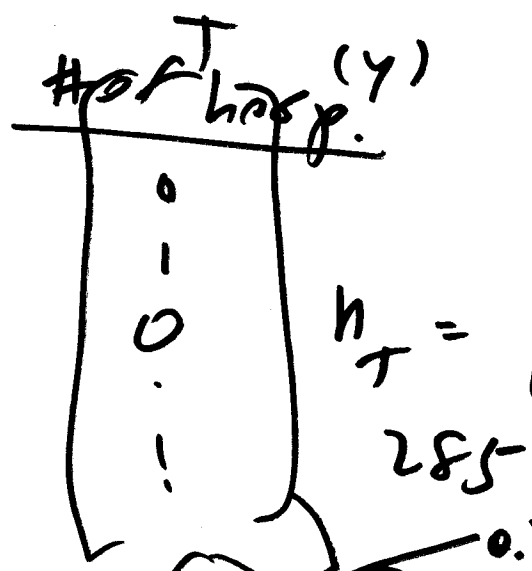
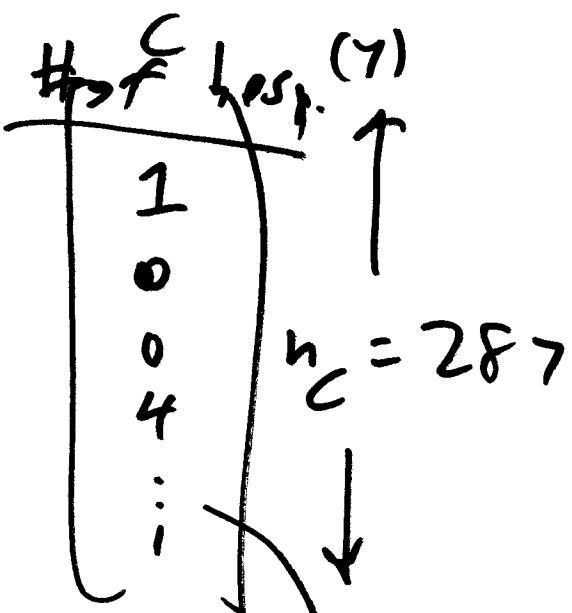


STAT 206
15 Jan 21
DD disc. section



$\bar{y}_T - \bar{y}_c$

or

$\frac{\bar{y}_T - \bar{y}_c}{\bar{y}_c}$

$\frac{0.7 - 0.9}{0.9}$

$\frac{-0.2}{0.9} = -0.22$

(k positive integer)

benefit practically significant large in practical terms? \rightarrow = 22% decline \rightarrow yes

statistical inference (generalizing outwards from our data to a larger & more interesting world)

(P) population

all non-F. elderly people

(C)

sample

the observed elderly people

1 row in sample dataset for each

$N_c = ?$

- 0
- 2
- 0
- ...

network in early 1980s like at random

- 7
- 0
- 4
- ...

$N_c = 287$

mean $\bar{y}_c = 0.9$

SD s_c

representative

like-at-random

mean $\mu_c = ?$

(ditto) (T)

$\mu_T = ?$


$\bar{y}_T = 0.7$

pop known

probability
~~inference~~

sample unknown

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$N_c = ?$
(i) 

at random
(IID)

$n_c = 287$
 $\bar{y}_c = ?$ with replacement

$\mu_c = \text{known}$

$\mu = \sigma$
unknown

statistical inference
harder

sample known

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N_c 

(IID)

n_c
 $\bar{y}_c = \text{known}$

$\mu_c = ?$

activities

- ① statistical data science
- ① probability calculations
- ② design of data-gathering activities
 - (no interventions) (interventions)
 - (A) sampling for rep. (B) designed experiments

② data curation (of existing data) ④

"data cleaning"

- copying with ① can be set
- missing data 75% of total data science time
- sanity checks on all

the variables (e.g. $x_3 = \text{temp. in } ^\circ\text{F}$ at hospital admission)

x_3
99.3
101.4
NA 999
97.5
⋮
i

999 or missing data code

garbage in \rightarrow garbage out

here we're ensuring that problem context matches the data

④ graphical & numerical descriptions of existing data sets ①

histograms, scatterplots, time series plots

④ statistical inference (generalizing) ⑤
 out word accurately from existing
 data sets: unknown θ (Bayes)

⑤ statistical prediction
 of new data values \underline{D}^* (Bayes)
 unknown data

optimal
 ④ decision-making (Bayesian decision theory or Bayesian game theory)

> 1 decision-makers \swarrow
 1 decision-maker \nwarrow
