

Stata Practice

Lesson 1

```
. use hsb2, clear

. help

. d
. su
. su, d
. tab female

. help inspect
. help codebook

. inspect
. codebook
. labelbook

. su read-science
. su read-math, d
. univar read-math [download univar]
. tab1 female-ses
. insp read-socst
. codebook read-math
. labelbook read-math

. su read
. su read if female==1
. su read if female~=1
. su read if female==0
. su read if female~=0

. su read if read<50
. su read if read<=50
. su read if read>50 & read<.
. su read if read>=50 & read<.
. su read if read==52
. su read if read~=52

. su read if math<50
. su read if science>60 & science<.

. su read if female==1 & race==4 & math>=50 & math<.
. display 2+2
. di 2*4
. di (2+5)*(7+8)
. di (9-7)*(2+2)
. di (10-3)*(6-3)
```

```

. di 10/5
. di (10+6)/4
. di (2+6)/2
. di (10-2)/4
. di 10/(3+2)
. di 15/(6-1)
. di (10+2)/(2+4)

. di sqrt(100)
. di exp(1.74)

. di 500/_N
. di 5*_N

. nmissing                                [downloaded command]
. nmissing read- math

. count
. count if socst<=50
. count if race==3

. duplicates list id
. duplicates report id
. duplicates browse id

. sort id
. list
. l read-socst
. l read- math, compress
. sort female
. l female

. l read- math in 4
. l read- math in -4                        [fourth from last]

. l read- math in 1/10
. l read- math in 47/55
. l read- math in -10/l                    [the letter 'l', which stands for 'last']
. l read- math in 1/10
. l read- math in -10/l

. l read if read==.                        ['.' = missing value]
. l read if read<.                        [i.e. list non-missing cases of read]

. l id read if read>37 & read<75
. l id read if read>=37 & read<=75
. l id read if read<45 & read>65 & read<.
. l id read if read<45 & read>65 & read<.
. l id read if read<=46 & read>=55 & read<60

. l read if female==1
. l read if female==0
. l read if female~=1

```

```

. l read if female~=0
. l read if female==1 & math<=58 & math>=65 & math<.

. l read if female==1
. l read if female==0

. bys female: l read [l=list]
. bys female: l read math science
. bys race: l read math science
. bys race: l read if read<=52
. bys race: l read if read<.
. bys race: l read if read>=35 & read<.
. bys ses: l read in -15/-1

. br [br=browse]
. br female math
. br female if science<50 & math>50 & math<.

. br in 12
. br in -3
. br in 1/12
. br in -20/-1
. br female in 27

. ed [ed=edit]
. ed race science
. ed race if female==0

. ed in 36
. ed in -2
. ed in 36/42
. ed in -17/-1

. sort math
. findit vlist
. vlist math [download vlist]
. vlist schtyp

. findit listjl [download listjl]
. listjl math
. listjl schtyp
. listjl math, by(schtyp)
. listjl science, by(race)

. clear

```

Lesson 2

```

. u hsb2, clear

. tabstat math, stats(mean med sd min max)
. tabstat math, s(mean med sd min max) by(female)
. tabstat math, s(mean med sd min max) by(female) format(%9.2f)
. tabstat math, s(mean med sd min max) by(female) format(%9.2f) col(stats)

```

```

. tabstat read write math science, s(mean med sd min max) f(%9.2f)
. tabstat read write math science, s(mean med sd min max) f(%9.2f) col(stats)
. tabstat read write math science, s(min max q n) f(%9.2f) col(stats)

. tabulate ses
. tab ses, nolabel
. tab schtyp ses, nol
. tab schtyp ses, col
. tab schtyp ses, row
. tab schtyp ses, cell

. tab schtyp ses, nol
. tab schtyp ses, col chi2
. tab schtyp ses, row chi2
. tab schtyp ses, cell chi2

. tabulate schtyp, summarize(math)
. tab schtyp, su(read)

. bys schtyp: su read
. bys schtyp: su math

. table schtyp
. table schtyp ses
. table schtyp race
. table schtyp race, by(female)
. table female, contents(mean math med math sd math min math max math)

```

Lesson 3

```

. u hsb2, clear

. move read female
. move read science

. findit placevar
. help placevar [download placevar]

. placevar science socst, f
. placevar science socst, l

. placevar science socst, b(female) [b: behind]
. placevar science socst, a(math) [a: ahead of]

. help order
. order science female race
. aorder [arrange in alphabetical order]

. findit renvars
. help renvars [download renvars]
. renvars science socst, up [make upper-case]
. renvars science socst, lo [make lower-case]

```

```

. help notes
. notes [Stata 10 notes can be made by right-
        clicking the Variables window.]

. note: This is a practice note.
. note: TS This is a practice note with a time stamp. [a space on each side of TS]
. note read: This is a practice note for read.

. notes
. note read
. note_dta drop in 2
. note read drop

. drop id

. gen id=_n
. l id
. la var id "student id"
. move id female [move id ahead of female]

. di 20/200
. di 20/_N

. di 20*200
. di 20*_N

. clear

```

Lesson 4

```

. u hsb2, clear

. l read
. sort read [sort read from lowest to highest values]
. l read
. gsort -read [sort read from highest to lowest values]
. l read

. l math
. sort math
. l math
. gsort -math
. l math

. clear

```

Lesson 5

```

. help tabulate

. tab race
. d race
. codebook race

```

- . codebook race, notes
- . insp race
- . tab ses
- . d ses
- . codebook ses
- . codebook ses, notes
- . insp ses

- . tab prog
- . d prog
- . codebook prog
- . insp prog

- . label list

- . clear

Lesson 6

- . u hsb2, clear
- . help log

- . log using practice [or: File>Log>Begin]
- . log off [or: File>Log>Suspend]
- . log on [or: File>Log>Resume]
- . log close

- . log using practice, replace [log is saved with .log extension]
- . log off
- . log on
- . log close

- . log using practice, append
- . log off
- . log on
- . log close

- . type practice.log [or click File>Log>View]

- . cmdlog using practice, replace [cmdlog is saved with .txt extension]
- . cmdlog off
- . cmdlog on
- . cmdlog close
- . File>View>browse to cmdlog file (.txt extension)

- . cmdlog using practice, append
- . cmdlog off
- . cmdlog on
- . cmdlog close

Lesson 7

How to create, run & print a dofile

* practice.do: this is a practice dofile. This is a practice dofile. This is a /// practice dofile. See "Getting Started with Stata."

```
. version 10.0
. capture log close
. set more off
. log using practice, replace
. use hsb2, clear

. describe
. summarize

. log close
. exit
```

[Click File View Browse-to-select-dofilename]

How to run a dofile

```
. do practice [Or click File Do Dofilename]
```

How to convert a logfile into a dofile

```
. findit log2to2 [download log2do2]
. help log2do2
. log2do2 logfile, replace [assuming you've created a logfile]
```

Lesson 8

```
. pwd [print working directory]
. dir [list directory's files]
. mkdir c:\data2 [make new directory named 'data2']
. copy hsb2.dta c:\data
. cd data2 [change to new directory]
. pwd
. dir
```

Lesson 9

```
. u hsb2, clear

. help graph7 [graph7: 'quick graphs', based on Stata-7]

. gr7 read, hist
. gr7 read, bin(8) [histogram]
. gr7 read, bin(8) norm
```

```
. gr7 read, box [boxplot]

. tab race, generate(raced) [creates dummy variable series raced1-raced4]
. d raced*
. gr7 raced*, bar
. gr7 raced*, pie
```

Lesson 10

```
. corr read write
. corr math science
. corr read write math science socst

. findit corrtab [download 'corrtab']
. help corrtab
. corrtab read write math, sig
. corrtab read write math, bonf

. pwcrr read write, obs
. pwcrr math science, obs
. pwcrr read write math science socst, obs

. reg read write
. reg read math
. reg math science

. clear
```

Lesson 11

```
. u hsb2, clear

. help graph

. hist read
. hist read, norm
. hist read, freq
. hist read, freq norm
. gr box read
. gr box read, marker(1, mlabel(id))
. gr box read, ylabel(0(10)70) [to 'semi-label' outliers via y-axis label]
. kdensity read, norm
. pnorm read, grid
. qnorm read, grid
. quantile read, grid

. hist read, scheme(economist) [see 'help graph']
. gr box read, scheme(economist) [see 'scheme, permanent']
. hist read, scheme(sj)
. gr box read, scheme(sj)
. help scheme

. hist read, graphregion(c(teal)) plotregion(c(black)) blc(red)
```

- . qnorm read, grid
- . qnorm read, grid graphr(c(teal)) plotr(c(khaki))
- . qnorm read, grid plotr(c(navy))
- . qnorm read, grid plotr(c(teal))
- . qnorm read, grid plotr(c(gold))
- . qnorm read, grid graphr(c(teal)) plotr(c(black))

- . hist read, norm
- . hist read, norm graphr(c(teal))
- . hist read, norm plotr(c(teal))
- . hist read, norm plotr(c(black))
- . hist read, norm graphr(c(teal)) plotr(c(black))

. for varlist read write math: hist X, norm \ more

To save & print graph:

- . hist read, (saving hist_read)
- . Right-click graph & select Print

After closing graph:

- . graph [redisplay last graph displayed]

Later in session, to display graph:

- . Click File OpenGraph

Lesson 12

- . u hsb2, clear

- . sort female
- . gr box science, over(female, total)
- . gr box science, by(female, total)
- . hist science, by(female, total) norm

- . sort race
- . hist read, by(race) norm
- . bys race: hist read, norm \ more [press spacebar to see series]
- . gr box read, over(race, total)

- . grmeanby female, su(science)
- . grmeanby race, su(science)

- . gr7 read write
- . gr7 read write math science, matrix half

- . gr matrix read write math science
- . gr matrix write math science, half

- . help scatter
- . scatter math write
- . scatter math write, ml(id)
- . scatter math write, ml(female)
- . scatter math write, ml(ses)

```

. scatter math write || lfit math read
. scatter math write, ml(id) || lfit math read
. scatter math read, ml(female) || lfit math read

. scatter math write || qfit math write
. scatter math write, ml(id) || qfit math write
. scatter math write, ml(female) || qfit math write

. scatter math write || fffit math write
. scatter math write, ml(id) || fffit math write
. scatter math write, ml(female) || fffit math write

. twoway lfitci math write
. twoway qfitci math write
. twoway fffitci math write
. scatter math write || lfitci math write
. scatter math write || qfitci math write
. scatter math write || fffitci math write

. grmeanby female, su(read)
. bys female: su read
. tab female, su(read)
. tabstat read, stats(mean med sd min max) by(female)
. tabstat read, stats(mean med sd min max) by(female) f(%9.2)
. tabstat read, stats(mean med sd min max) by(female) f(%9.2) col(stats)
. table female, c(mean read med read sd read min read max read)

. clear

```

Lesson 13

```

. u hsb2, clear
. gen rw=read + write
. su rw
. la var rw "read + write"

. egen rrw=rsum(read-write)           [see egen: rsum=row summarize]
. su rw rrw
. la var rrw "row sum read-write"

. gen rminw=read - write
. su rminw
. la var rminw "read - write"

. gen rdivw=read/write
. su rdivw
. la var rdivw "read divided by write"

. gen readXwrite=read*write
. su readXwrite, d
. la readXwrite "read*write"

```

```

. labelbook

. su read
. replace read=99 if read==65
. su read
. l read if read==99

. su math
. replace math=99 if math==45
. su math
. l math if math==99

. gen hispanic=(race==1)
. tab hispanic
. la def h 0 "Nonhispanic" 1 "Hispanic"
. la val hispanic h
. tab hispanic
. la var hispanic "hispanic=1 nonhispanic=0"

. gen asian=(race==3)
. tab asian
. la def a 0 "nonasian" 1 "asian"
. la val asian a
. tab asian
. la var asian "asian=1 nonasian=0"

. tab race
. recode race (1=4 "hispanic") (2=3 "afr-amer") (3=2 "asian") (4=1 "white"), into
(newrace)
. tab1 race newrace
. d race newrace
. codebook race newrace
. insp race newrace
. list label newrace

. la data "new data set"

. compress

. gen aframer=(race==2)
. tab aframer
. la def af 0 "not afr=amer" 1 "afr-amer"
. la val aframer af
. tab aframer
. la var aframer "african-america=1 other=0"
. la data "old data set"

. gen asian_white = (race>=3) if race<.
. tab race asian_white
. la def aw 0 "hispanic or black" 1 "asian or white"
. la val aw asian_white
. la var asian_white "1=Asian or white, 0=Hispanic or Black"

```

```

. gen hisp_black = (race<=3)
. tab race hisp_black
. la def aw 0 "asian or white" 1 "hispanic or black"
. la val aw asian_white
. la var asian_white "1=Hispanic or Black, 0=Asian or white"

. d
. count
. gen mathsci=math + science
. su mathsci
. la var mathsci "math + science"

. egen rmathsci=rsum(math science)
. su mathsci rmathsci
. la var rmathsci "rsum math science"

. labelbook hispanic asian aframer asian_white hisp_black, problems

. compress
. clear

```

Lesson 14

```

. u hsb2, clear

. tab1 female race ses schtyp

. tab race
. tab race, nolable
. recode race 1=4 2=3 3=2 4=1
. la define nr 1 "white" 2 "asian" 3 "afr-amer" 4 "hispanic"
. la values race nr
. tab race, nol [no label]
. tab race

. tab female
. recode female (0=1 1=0), gen(male)
. la define m 0 "female" 1 "male"
. la values male m
. la var male "male=1 female=0"
. tab male, nol
. tab male
. drop male

. clear

```

Lesson 15

```

. u hsb2, clear

. tab schtyp race, chi2
. tab schtyp race, row chi2
. tab schtyp race, row nof chi2

```

```

. tab schtyp race, col chi2
. tab schtyp race, col nof chi2
. tab schtyp race, cell chi2
. tab schtyp race, cell nof chi2

. tab2 female-ses, chi2
. tab2 female-ses, nof chi2

. help centile
. centile math, c(20 40 60 80) meansd [assumes normal distribution; identifies cutoff points but does not save them as a new variable]
. centile math, c(20 40 60 80)
. tabstat math, s(p20 p40 p60 p80) f(%9.2)

. gen rmath=recode(math, 45, 52, 59, 75) [categorize where you specify]
. la var rmath "recode math at 45, 52, 59, 75"
. bys rmath: su math
. tab rmath, su(math)
. table rmath, c(mean math med math sd math min math max math)

. gen amath=autocode(math, 5, 33, 75) [automatic: approximately equal intervals]
. la var amath "autocode math(5)"
. bys amath: su math
. tab amath, su(math)
. table amath, c(mean math med math sd math min math max math)

. help xtile
. xtile xmath=math, nq(5) [automatic: approximately equal intervals]
. la var xmath "xtile math(nq5)"
. bys xmath: su math
. tab xmath, su(math)
. table xmath, c(mean math med math sd math min math max math)

. help pctile
. la var pmath "pctile math(nq5)"
. pctile pmath=math, nq(5) [automatic: percentiles based on quantiles]
. bys pmath: su math
. tab pmath, su(math)
. table pmath, c(mean math min math max math)

. gen gmath=group(5) [automatic: approximately equal groups]
. la var gmath "group_math(5)"
. bys gmath: su math
. tab gmath, su(math)
. table xmath, c(mean math min math)

. compress
. bys female: su math
. tab math, su(math)
. table female, contents(mean math med math sd math min math max math)
. table race, c(mean read iqr read)
. tabstat math, s(mean med sd min max) by(female) f(%9.2)
. tabstat math, s(mean med sd min max) by(female) f(%9.2) col(stats)

```

```

. tab xmath female, chi2
. tab gmath female, chi2
. tab amath female, chi2

. tab xmath female, row chi2
. tab xmath female, row nofreq chi2

. tab xmath female, col chi2
. tab xmath female, col nofreq chi2

. tab xmath female, cell chi2
. tab xmath female, cell nofreq chi2

. tab pmath female, col chi2
. tab pmath female, col nof chi2
. tab pmath female, cell chi2
. tab pmath female, cell nofreq chi2

. tabi 33 54 \ 27 16, chi2           [data not in memory (e.g., from published source
                                     but not entered into Stata)]

. help csgof
. csgof female, exp(53 47)
. csgof female, exp(11 62)

. compress
. clear

```

Lesson 16

```

. u hsb2, clear

. tab race, gen(raced)
. tab1 race*
. tab1 raced*

. d race*
. d raced*

. compress
. clear

```

Lesson 17

```

. u hsb2, clear

. help sdtest

. sdtest read=4.32
. sdtest read, by(female)           [use robvar if variable is highly skewed]
. sdtesti #obs {#mean | . } #sd #val
. sdtesti #obs1 {#mean1 | . } #sd1 #obs2 {#mean2 | . } #sd2

```

```

. ci read
. ci read, l(90)
. ci read, l(99)

. cii #obs #mean #sd [data not in memory: obs=100, mean=47,
sd=6.8]

. ci hread, bin
. propci, cond(hread) Wilson
. cii #obs #succ [data not in memory: obs=100, #succ=31]

. ttest read=60
. ttest read=write
. ttest read, by(female)
. ttest read, by(female) unequal
. ttesti #obs #mean #sd #val [data not in memory]
. ttesti #obs1 #mean1 #sd1 #obs2 #mean2 #sd2
. ttesti #obs1 #mean1 #sd1 #obs2 #mean2 #sd2, unequal

. bitest hmath=.30

. bys female: bitest hmath=.30

. bitesti #N #succ #p, detail [data not in memory]

. prtest hmath=.30
. prtest hmath=hsci
. prtest hmath, by(female)
. prtesti #obs #p1 #p2 [data not in memory]
. prtesti #obs1 #p1 #obs2 #p2

. oneway read race, table bonf [graph/check data assumptions first]
. loneway read race
. anova read race

. clear

```

Lesson 18

(Review of graph commands & some new graph commands)

```

. u hsb2, clear

. hist read
. hist read, norm
. for varlist read write math: hist X, norm \ more

. gr box read
. gr box read write math

. kdensity read, norm
. qnorm read, grid

```

```

. hist read, scheme(economist) [under 'help graph',]
. gr box read, scheme(economist) [see 'scheme, permanent']
. hist read, scheme(sj)
. gr box read, scheme(sj)
. help scheme

. hist read, graphregion(c(teal)) plotregion(c(black)) blc(red)

. qnorm read, grid
. qnorm read, grid graphr(c(teal)) plotr(c(khaki))
. qnorm read, grid plotr(c(navy))
. qnorm read, grid plotr(c(teal))
. qnorm read, grid plotr(c(gold))
. qnorm read, grid graphr(c(teal)) plotr(c(black))

. hist read, norm
. hist read, norm graphr(c(teal))
. hist read, norm plotr(c(teal))
. hist read, norm plotr(c(black))
. hist read, norm graphr(c(teal)) plotr(c(black))

. gr bar v1 v2 v3, perc legend(order(3 2 1) label(1 "Var3") label(2 "Var2") label(3
"Var 1") ylabel(0(10)100) xlabel(0(10)100)

. hist read, by(race) norm
. bys race: hist read, norm \ more [press spacebar to see series]
. gr box read, over(race, total)
. gr box read, by(race, total)

. grmeanby female, su(science)
. grmeanby race, su(science)

. gr7 read write
. gr7 read write, twoway c(s) bands(8)
. gr7 read write math science, matrix half

. gr matrix read write math science, half

. help scatter
. scatter read write
. scatter read write, ml(id)
. scatter write read, ml(female)
. scatter write read, ml(ses)

. help twoway
. twoway mband read write, bands(8)
. two mband read write, ba(8)
. two mband read write, ba(8) graphr(c(teal)) plotr(c(khaki))

. scatter read write, ml(id) || mband read write, ba(8)
. scatter read write, ml(id) || mband read write, ba(8)
. scatter read write, ml(id) || mband read write, ba(8) graphr(c(teal)) plotr(c(khaki))

```

```

. scatter write read, ml(id) || lfit write read
. scatter write read, ml(race) || qfit write read
. scatter write read, ml(ses) || fplit write read

. twoway lfitci read write
. two lfitci write read
. two lfitci write read, scheme(economist)
. two lfitci write read, scheme(sj)
. two lfitci write read, blc(red)
. two lfitci write read, bc(red)
. two lfitci write read, graphr(c(teal)) plotr(c(black)) bc(red)

. two qfitci read write
. two qfitci write read
. two qfitci write read, blc(red)
. two qfitci write read, bc(red)
. two qfitci write read, graphr(c(teal)) plotr(c(black)) bc(red)

. twoway fplitci write read
. two fplitci read write
. two fplitci read write, scheme(economist)
. two fplitci read write, scheme(sj)
. two fplitci read write, blc(blue)
. two fplitci read write, bc(gold)
. two fplitci write read, graphr(c(teal)) plotr(c(black)) bc(red)

. scatter read write || lfitci read write
. scatter read write || qfitci read write
. scatter read write || fplitci read write
. scatter read write || fplitci read write, blc(black)
. scatter read write || fplitci read write, bc(yellow)
. scatter read write || fplitci read write, graphr(c(teal)) plotr(c(black)) bc(red)

. findit sparl [download sparl]
. help sparl
. sparl read write
. sparl write read
. sparl write read, logy
. sparl write read, logx
. sparl write read, power
. sparl write read, quad

. tab race, gen(raced)
. tab1 raced*
. gr pie raced*
. gr bar raced*, yla
. gr bar (mean) math, by(raced*)

. gr bar (mean) math, over(race)
. gr bar (mean) math, by(race)

. clear

```

Lesson 19

```
. u hsb2, clear

. help sumsum          [download 'sumsum': calculates sum of observations]
. sumsum female       [calculates sum of '1' observations]
. sumsum math

. help functions
. help egen

. egen zmath=std(math)          [standardize a variable]
. egen summath=sum(math)
. su zmath summath
. dotplot zmath summath
. gr box zmath summath

. egen avscores=rmean(read-socst)    [create a variable based on mean values]
. egen sumscores=rsum(read-socst)    [create a variable based on summed vals]
. su avscores sumscores
. dotplot avscores sumscores
. gr box avscores sumscores

. egen mathrank=rank(math)          [create a variable based on math ranks,
                                     with lowest value ranking first]

. sort mathrank
. l mathrank

. drop mathrank
. egen mathrank=rank(math), f    [creates variable that ranks highest value first;
                                     compare to gsort -math, which simply sorts math
                                     from highest to lowest values]

. sort mathrank
. l mathrank
. compress

. clear
```

Lesson 20

Publication-Style Output Tables

```
. Publication-style contingency table: help tabout

. Publication-style correlation matrix: help corrtab or help mkcorr or help makematrix

. corrtab read-socst
. corrtab read-socst, sig
. makematrix, from(r(rho)): corr read-socst
. makematrix, from(r(rho)) cols(socst) format(%9.2f): corr read-socst

. Publication-style summaries of descriptive data:
```

```
. makematrix, from(r(mean) r(p50) r(sd) r(min) r(max)) format(%9.2f): su read-  
science, detail
```

```
. tabstat read write math science, stats(mean med sd min max) format(%9.2f)  
. tabstat read write math science, stats(mean med sd min max) format(%9.2f)  
col(stats)
```

```
. tabstat read write math science, stats(mean med sd min max) format(%9.2f)  
by(female) col(stats)
```

```
. makematrix, from(r(mean) r(p50) r(sd) r(min) r(max)) format(%9.2f): su read-  
science, detail
```

Here are examples of 'tabout' and 'estout'. See also 'outreg' and 'mktab', among others:

- Contingency table:

```
u hsb2, clear
```

```
la var female "Gender"  
la var prog "Program"
```

```
tabout female prog using hsb2, stats(chi2) replace
```

- OLS regression table:

```
use hsb2, clear
```

If you don't have to display standard errors, here's the simplest procedure:

```
. reg read write math  
. estimates store m1  
. reg read write math science  
. est store m2  
. est table m1 m2, star(.01 .05 .10), stats(N r2 r2_a)
```

Here's a more powerful & flexible procedure:

```
. reg science math read female  
. eststo [eststo refers to 'estimates store']  
. reg science math read female schtyp  
. eststo
```

```
. esttab, se starlevels(+ .10 * .05 ** .01) b(%9.2f) r2(%9.2f) ar2(%9.2f) bic  
nodepvars nomtitles title("OLS Science Models") addnotes("Note: Put your notes  
here.") replace
```

Or to directly produce an MS-Word table:

```
. esttab using science.rtf, se b(%9.2f) starlevels(+ .10 * .05 ** .01) r2(%9.2f)
ar2(%9.2f) bic nodepvars nomtitles title("OLS Science Models") addnotes("Note: Put
your notes here.") replace
```

Note: 'append' instead of 'replace' if you're adding to the table.

- Logistic regression table:

```
. logistic white math science i.prog, nolog
. eststo
. la var white "White"
. la var science "Science"
```

```
. esttab, eform se b(%9.3f) starlevels(+ .10 * .05 ** .01) scalars(ll df_m bic aic)
sfmt(%9.3f %9.0f %9.3f) nodepvars title("Logistic Regression: Whites vs. Non-
Whites") addnotes("Note: Put your notes here.") replace
```

Or:

```
. estab using whites.rtf, eform se b(%9.3f) starlevels(+ .10 * .05 ** .01) scalars(ll
df_m bic aic) sfmt(%9.3f %9.0f %9.3f) nodepvars title("Logistic Regression: Whites
vs. Non-Whites") addnotes("Note: Put your notes here.") replace
```

Note: 'eform' to display odds ratios.

- Multinomial logit regression table:

```
. mlogit prog math read science female, base(0) rrr nolog
. eststo
```

```
. esttab m1, eform se unstack b(%9.3f) starlevels(+ .10 * .05 ** .01) scalars(ll chi2
df_m bic aic) sfmt(%9.3f %9.0f %9.3f) nodepvars nomtitles title("Multinomial Logit
Model") addnotes("Note: Put your notes here.") replace
```

Or:

```
. estab using whites.rtf, eform se unstack b(%9.3f) starlevels(+ .10 * .05 ** .01)
scalars(ll df_m bic aic) sfmt(%9.3f %9.0f %9.3f) nodepvars nomtitles
title("Multinomial Logit Model") addnotes("Note: Put your notes here.")
```

Note: 'eform' to display odds ratios, as well as 'unstack' to display sub-equations in separate columns.

Lesson 21

```
. u hsb2, clear
. display (56.3 - 50)/4.4
. di norm(1.4318)
. di invnorm(.92389947)
```

```
. di ttail(199, 1.976)
. di invttail(199, .02476828)
. di invttail(199, .05/2)
```

Lesson 22

```
. u hsb2 , clear
. reg science read
. predict yhat if e(sample)
. predict se, stdp
. di invttail(199, .05/2)
. gen lo = yhat - (1.972*se)
. gen hi = yhat + (1.972*se)
. scatter science yhat lo hi read, c(. | | |) m(O i i i) sort
. clear
```

See Hamilton, *Statistics with Stata*, on the following useful commands: append, merge, reshape, collapse.

Lesson 23

How to impute missing values with a probabilistic component (see 'help ice' for a description of the assumptions & command options)

To impute a missing y-value:

```
uvis regress y x1 x2 x3, gen(y_new) seed(123)
```

But every missing value for x1-x3 will create a missing value in y, even if the y-value wasn't originally missing.

If that happens, after running uvis try the following procedure to replace the new missing y-values with the original non-missing y-values (compliments of Stata listserve).

```
replace y_new = max(y, y_new)
```

To impute missing x-values:

```
ice x1 x2 x3 x4 using filename, m(10) cc(x6 x8) cmd(x1 x2:logit, x3:ologit,
x4:regress) cmd(cmdlist) genmiss(m_) id(pid) seed(123)
```