

# Econ 174, Section 101/103

## Week 3

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If you have a laptop with STATA installed:

- Turn it on and load stata
- Type “sysuse auto, replace” to load some data

If you don't have a laptop:

- Find someone who does, and kindly ask him/her to share

Either way:

- Think about forming groups to work on the problem set
- max 3 people/group

# STATA Review

- Operators: `==` `<=` `!=`
- Conditional statements
  - How to: set x2 equal to one if x1=1 or 2, zero otherwise
- Comments, `cd`, `log`
- `gen`, `replace`, `egen`
- `tab`, `summarize`
- `keep`, `drop`, `preserve`

# Stata basics

- How to: set x2 equal to one if x1=1 or 2, zero otherwise
- Gen x2 = 0
- Replace x2 = 1 if (x1==1) | (x1==2)
  
- gen x2 = 1 if (x1==1) | (x1==2)
- Replace x2=0 if x2==.

# A model .do file

```
clear
set mem 100M
set matsize 800
set more off

cd "C:\Users\josh\Documents\My Dropbox\Classes\Econ 174\Assignments\practice"
log using practice.log, replace

*****
*
*   Problem Set: STATA practice
*   Freddie Freeloader
*   GSI: Joshua Blumenstock
*   Group members: Harry Redknapp, Gareth Bale
*
*****

*****
*   Question 1
*****
use "practice.dta"

*****
*   Question 2
*   there are 200 observations and 8 variables
*****
count
```

# STATA: What's the problem?

- `gen happy==1`
- `gen happy if temperature>68`
- `gen happy=1 if gsi=josh`
- `gen happy=1 if gsi==josh` ?
- `count if gender` ?

# STATA Exercise

- `sysuse auto, replace`
- Suppose the cost of manufacturing a car is the sum of the following:
  - \$1.50 per pound of weight
  - \$0.25 per pound to ship if it is foreign
  - \$100 if its `rep78` is 5 (presumably to hire better engineers)
  - \$50 if its `mpg` is greater than 25 (better engineers again)
  - *What is the average cost for the cars in the dataset?*
- Calculate the profit (price minus cost) from selling each car.
- generate a dummy variable called “badidea” that equals 1 if the car is not profitable to produce
  - Hint: this command is not enough:
  - `gen badidea if profit<0`

# STATA Exercise

- Which cars have the lowest and highest values of mpg? Use `sort/list`, not `summarize/browse`
- Do foreign cars have the same mpg as non-foreign cars? What is the p-value associated with this difference? Use `regress` and/or `ttest`
- Are foreign cars more expensive than domestic cars? More profitable?

# STATA Exercise

- Create a new variable rank that gives the relative price of the car: Use `sort`, `gen rank = _n`
- Create the variable `cost_quartile`:  
=1 if cost in first quartile (0-25%), 2 if (26-50%), etc...  
Hint: `xtile`
- Compute average mpg for each cost quartile, and save this in a new variable `quartile_mpg`  
– Hint: `bysort`, `egen`
- Plot average mpg by cost quartiles  
– Hint: `scatter`



# STATA Exercises

- Plot the relationship between mpg and price
  - Draw the regression line and add a title to the plot. Use + signs for point markers, use a dashed yellow regression line.
  - Is the relationship statistically significant?
  - Bonus: label the points with the car model
  - Bonus: add confidence intervals

# Some links

- <http://data.princeton.edu/stata/graphics.html>
- <http://www.ssc.wisc.edu/sscc/pubs/sfr-data.htm>