

# Introduction to Longitudinal Data Analysis

Re-Introduction to Stata

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AQMEN

Which tool?



Which software  
(or data analysis package) should I learn?

*“This is like asking which five countries should I know about, given that I don’t have an interest in either geology or politics – the answer is it depends”*

Larry Wall (the creator of the programming language Pearl)

If you use a 'gui'  
then one day you will inevitably end up  
in a sticky mess

We advise against undertaking data analyses using  
software packages in interactive modes, for example  
through a graphical user interface (gui) such as drop-  
down menus



# Stata

- Popular in economics globally
- Popular with US social science (e.g. sociology)
- Commercial software
- Easy to learn
- Excellent development
- Outstanding help files and teaching resources
- [www.stata.com](http://www.stata.com)

# Stata

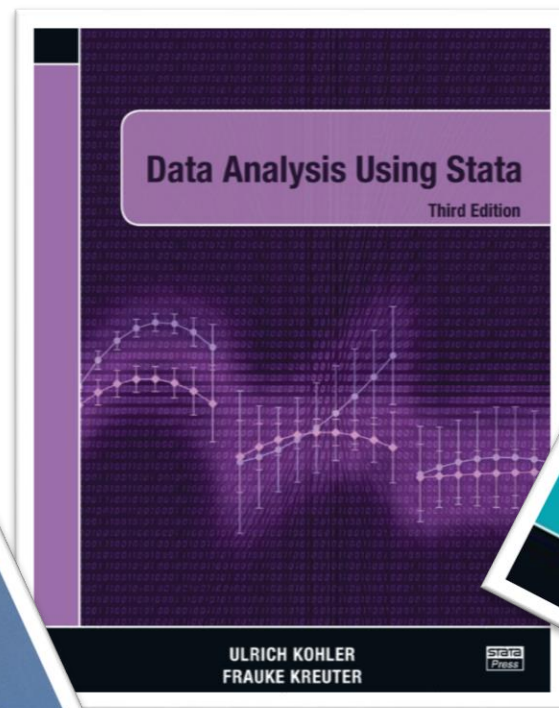
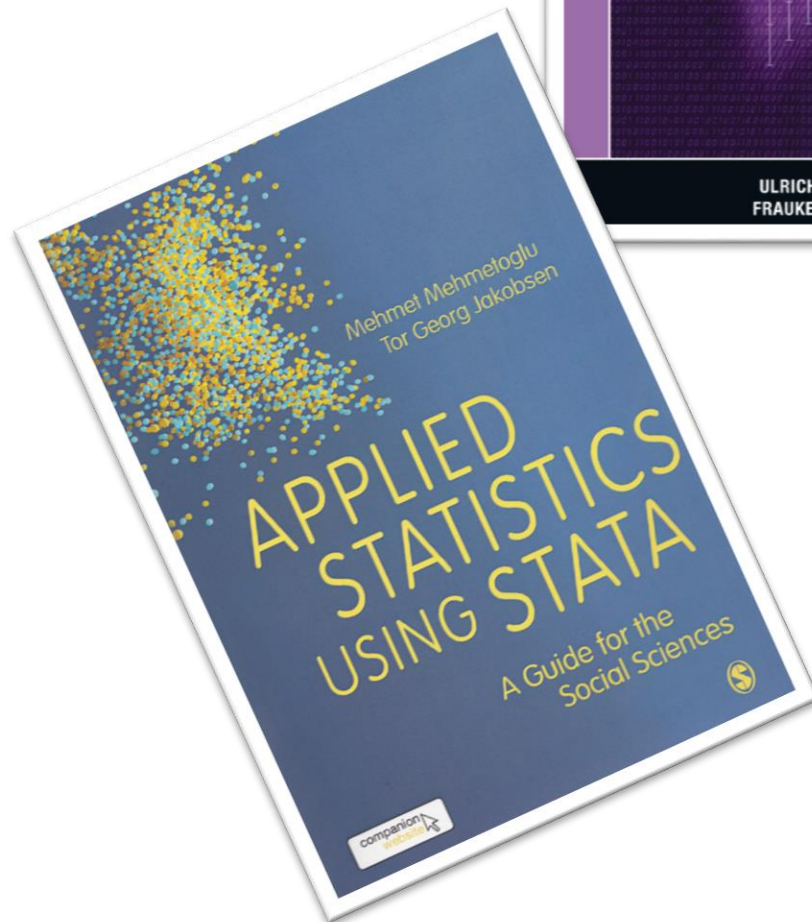
- Does all the routine stuff (SPSS, SAS & R)
- Fits many more models than standard software (esp. for selection, longitudinal)
- Specialist complex survey analysis functions (Svy) (useful for UKHLS, MCS etc)
- Human readable format
- Very strong documentation
- Worldwide user community (lists etc.)
- New features almost daily

*'...[Stata] has gotten better and better over time, so that by now it can happily be used as a general-purpose package. Stata is powerful and fast which makes it viable to carry out analysis on a PC...*

***Overall, Stata is a very good choice for our kind of work'***

(Treiman 2009 p.66)





Variables 








 Filter variables here

Name	Label
------	-------

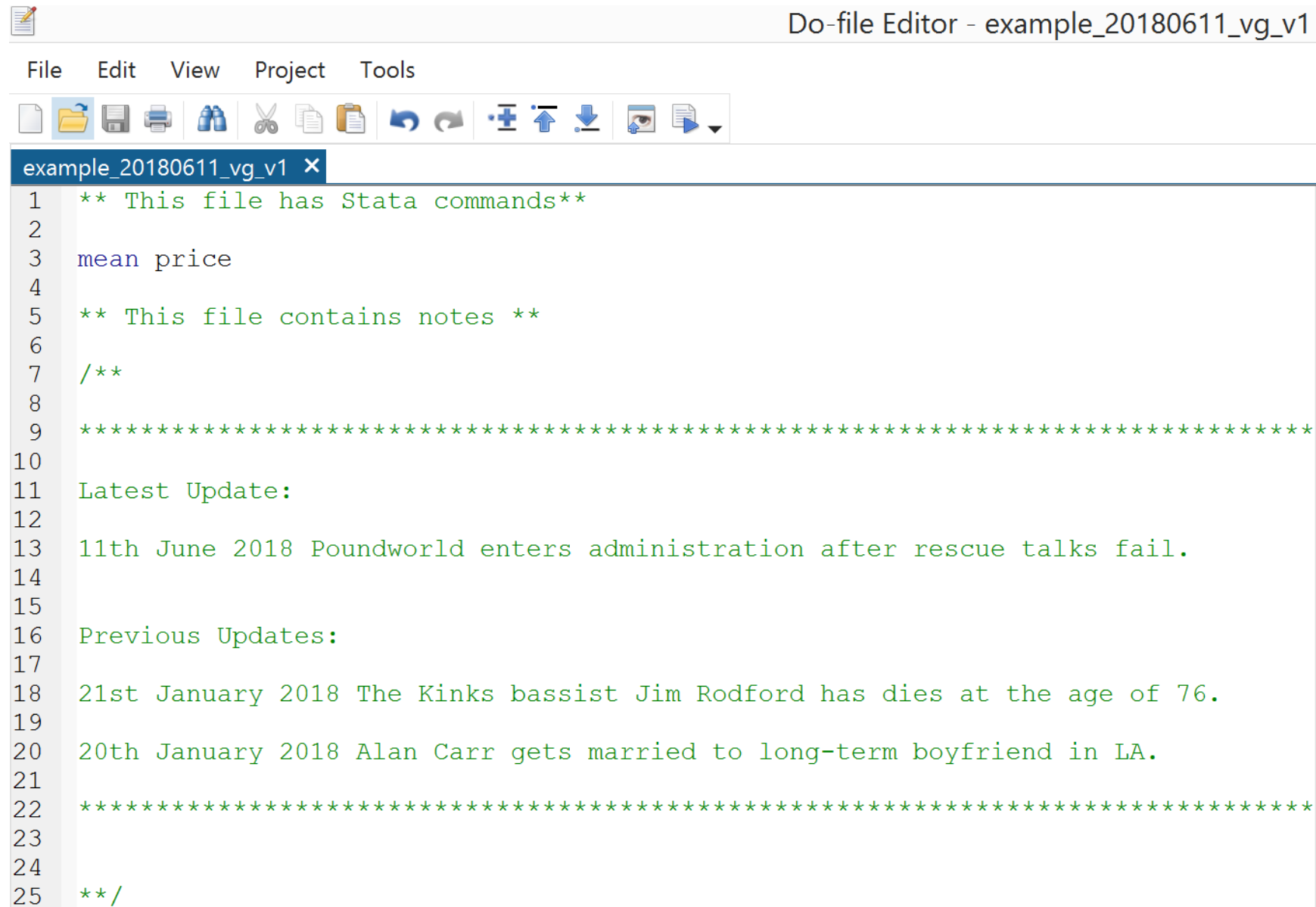
There are no items to show.

1

# Data Editor (familiar spread sheet)

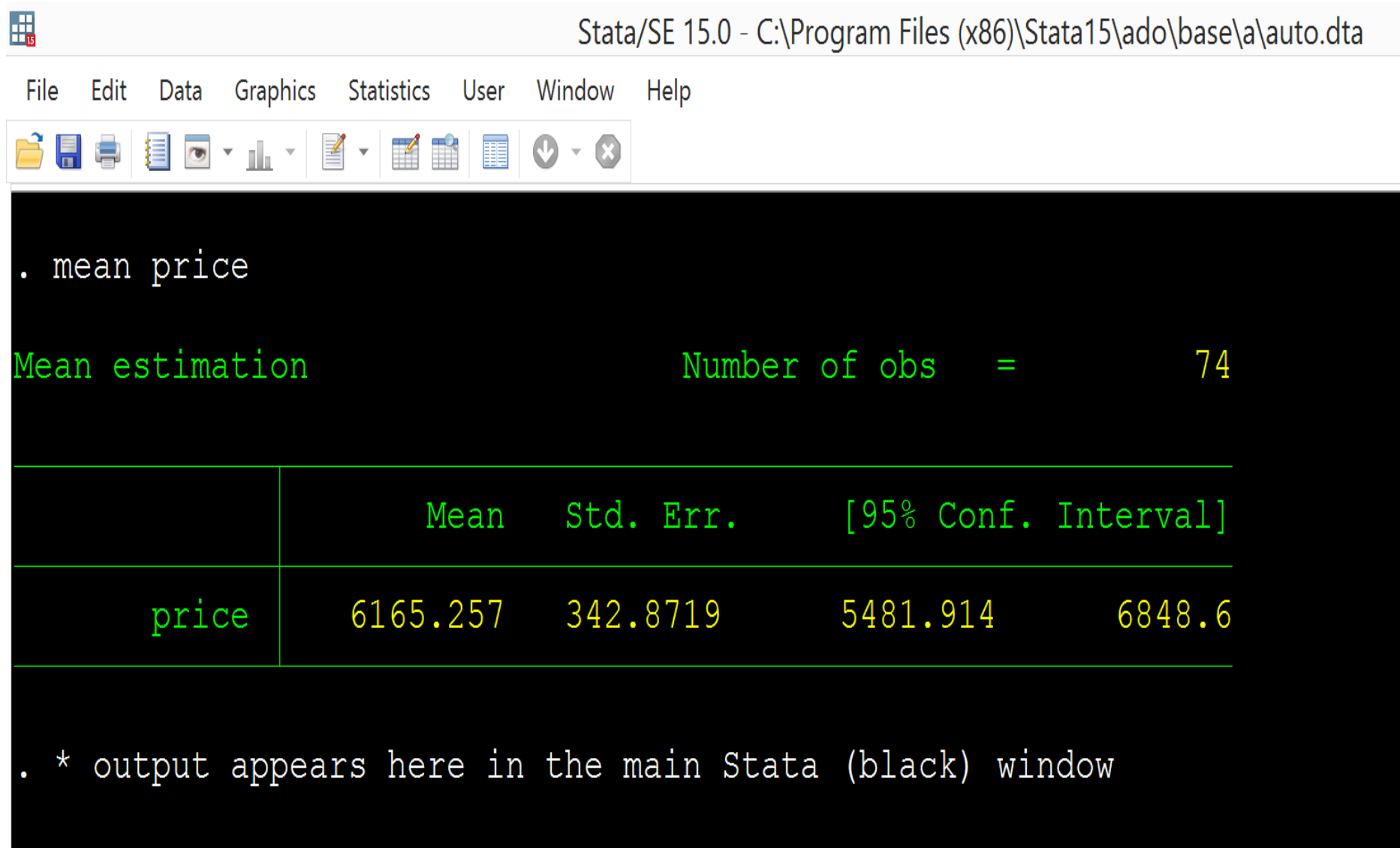
Data Editor (Browse) - [auto]												
File Edit View Data Tools												
      												
make[1]				AMC Concord								
	make	price	mpg	rep78	headroom	trunk	weight	length	turn	displacement	gear_ratio	foreign
1	AMC Concord	4,099	22	3	2.5	11	2,930	186	40	121	3.58	Domestic
2	AMC Pacer	4,749	17	3	3.0	11	3,350	173	40	258	2.53	Domestic
3	AMC Spirit	3,799	22	.	3.0	12	2,640	168	35	121	3.08	Domestic
4	Buick Century	4,816	20	3	4.5	16	3,250	196	40	196	2.93	Domestic
5	Buick Electra	7,827	15	4	4.0	20	4,080	222	43	350	2.41	Domestic
6	Buick LeSabre	5,788	18	3	4.0	21	3,670	218	43	231	2.73	Domestic
7	Buick Opel	4,453	26	.	3.0	10	2,230	170	34	304	2.87	Domestic
8	Buick Regal	5,189	20	3	2.0	16	3,280	200	42	196	2.93	Domestic
9	Buick Riviera	10,372	16	3	3.5	17	3,880	207	43	231	2.93	Domestic
10	Buick Skylark	4,082	19	3	3.5	13	3,400	200	42	231	3.08	Domestic
11	Cad. Deville	11,385	14	3	4.0	20	4,330	221	44	425	2.28	Domestic
12	Cad. Eldorado	14,500	14	2	3.5	16	3,900	204	43	350	2.19	Domestic
13	Cad. Seville	15,906	21	3	3.0	13	4,290	204	45	350	2.24	Domestic
14	Chev. Chevette	3,299	29	3	2.5	9	2,110	163	34	231	2.93	Domestic
15	Chev. Impala	5,705	16	4	4.0	20	3,690	212	43	250	2.56	Domestic
16	Chev. Malibu	4,504	22	3	3.5	17	3,180	193	31	200	2.73	Domestic
17	Chev. Monte Carlo	5,104	22	2	2.0	16	3,220	200	41	200	2.73	Domestic
18	Chev. Monza	3,667	24	2	2.0	7	2,750	179	40	151	2.73	Domestic
19	Chev. Nova	3,955	19	3	3.5	13	3,430	197	43	250	2.56	Domestic
20	Dodge Colt	3,984	30	5	2.0	8	2,120	163	35	98	3.54	Domestic
21	Dodge Diplomat	4,010	18	2	4.0	17	3,600	206	46	318	2.47	Domestic
22	Dodge Magnum	5,886	16	2	4.0	17	3,600	206	46	318	2.47	Domestic
23	Dodge St. Regis	6,342	17	2	4.5	21	3,740	220	46	225	2.94	Domestic
24	Ford Fiesta	4,389	28	4	1.5	9	1,800	147	33	98	3.15	Domestic

# Syntax File .do



```
1  ** This file has Stata commands**
2
3  mean price
4
5  ** This file contains notes **
6
7  /**
8
9  ****
10
11 Latest Update:
12
13 11th June 2018 Poundworld enters administration after rescue talks fail.
14
15
16 Previous Updates:
17
18 21st January 2018 The Kinks bassist Jim Rodford has dies at the age of 76.
19
20 20th January 2018 Alan Carr gets married to long-term boyfriend in LA.
21
22 ****
23
24
25 **/
```

# Stata Main Window (output)



```
Do-file Editor - example_20180611_vg_v1
File Edit View Project Tools
example_20180611_vg_v1 X
1 ** This file has Stata commands**
2
3 mean price
4
5 ** This file contains notes **
6
7 /**
8
9 *****
10
11 Latest Update:
12
13 11th June 2018 Poundworld enters administration after rescue talks fail.
14
15
16 Previous Updates:
17
18 21st January 2018 The Kinks bassist Jim Rodford has dies at the age of 76.
19
20 20th January 2018 Alan Carr gets married to long-term boyfriend in LA.
21
22 *****
23
24
25 **/
```



Data Editor (Browse) - [auto]

File Edit View Data Tools

make[1] AMC Concord

	make	price	mpg	rep78	headroom	trunk	weight	length	turn	displacement	gear_ratio	foreign
1	AMC Concord	4,099	22	3	2.5	11	2,930	186	40	121	3.58	Domestic
2	AMC Pacer	4,749	17	3	3.0	11	3,350	173	40	258	2.53	Domestic
3	AMC Spirit	3,799	22	.	3.0	12	2,640	168	35	121	3.08	Domestic
4	Buick Century	4,816	20	3	4.5	16	3,250	196	40	196	2.93	Domestic
5	Buick Electra	7,827	15	4	4.0	20	4,080	222	43	350	2.41	Domestic
6	Buick LeSabre	5,788	18	3	4.0	21	3,670	218	43	231	2.73	Domestic
7	Buick Opel	4,453	26	.	3.0	10	2,230	170	34	304	2.87	Domestic
8	Buick Regal	5,189	20	3	2.0	16	3,280	200	42	196	2.93	Domestic
9	Buick Riviera	10,372	16	3	3.5	17	3,880	207	43	231	2.93	Domestic
10	Buick Skylark	4,082	19	3	3.5	13	3,400	200	42	231	3.08	Domestic
11	Cad. Deville	11,385	14	3	4.0	20	4,330	221	44	425	2.28	Domestic
12	Cad. Eldorado	14,500	14	2	3.5	16	3,900	204	43	350	2.19	Domestic
13	Cad. Seville	15,906	21	3	3.0	13	4,290	204	45	350	2.24	Domestic
14	Chev. Chevette	3,299	29	3	2.5	9	2,110	163	34	231	2.93	Domestic
15	Chev. Impala	5,705	16	4	4.0	20	3,690	212	43	250	2.56	Domestic
16	Chev. Malibu	4,504	22	3	3.5	17	3,180	193	31	200	2.73	Domestic
17	Chev. Monte Carlo	5,104	22	2	2.0	16	3,220	200	41	200	2.73	Domestic
18	Chev. Monza	3,667	24	2	2.0	7	2,750	179	40	151	2.73	Domestic
19	Chev. Nova	3,955	19	3	.	13	3,430	197	43	250	2.56	Domestic
20	Dodge Colt	3,984	30	5	.	8	2,120	163	35	98	3.54	Domestic
21	Dodge Diplomat	4,010	18	2	.	17	3,600	206	46	318	2.47	Domestic
22	Dodge Magnum	5,886	16	2	.	17	3,600	206	46	318	2.47	Domestic
23	Dodge St. Regis	6,342	17	2	.	21	3,740	220	46	225	2.94	Domestic
24	Ford Fiesta	4,389	28	4	.	9	1,800	147	33	98	3.15	Domestic



```
Stata/SE 15.0 - C:\Program Files (x86)\Stata15\ado\base\auto.dta
File Edit Data Graphics Statistics User Window Help
. mean price

Mean estimation      Number of obs   =      74

_____
|               |      Mean   |      Std. Err.   |      [95% Conf. Interval]
|_____+-----|
| price         |      6165.257   |      342.8719    |      5481.914      6848.6
|_____+-----|

. * output appears here in the main Stata (black) window
```

# Log File (plain text)

```
. mean price
```

```
Mean estimation              Number of obs   =           74
```

```
-----+-----  
              |      Mean   Std. Err.   [95% Conf. Interval]  
-----+-----  
      price |    6165.257   342.8719    5481.914    6848.6  
-----+-----
```

```
.  
.** Output appears is copied to the log file  
.
```

```
Do-file Editor - example_20180611_vg_v1
File Edit View Project Tools
example_20180611_vg_v1 X
1 ** This file has Stata commands**
2
3 mean price
4
5 ** This file contains notes **
6
7 /**
8
9 *****
10
11 Latest Update:
12
13 11th June 2018 Poundworld enters administration after rescue talks fail.
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19
20 20th January 2018 Alan Carr gets married to long-term boyfriend in LA.
21
22 *****
23
24
25 **/
```

Data Editor (Browse) - [auto]

make[1]

	make	price	mpg	reg78	headroom	trunk	weight	length	turn	displacement	gear_ratio	foreign
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2	AMC Pacer	4,749	17	3	3.0	11	3,350	173	40	258	2.53	Domestic
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16	Chev. Malibu	4,504	22	3	3.5	17	3,180	193	31	200	2.73	Domestic
17	Chev. Monte Carlo	5,104	22	2	2.0	16	3,220	200	41	200	2.73	Domestic
18	Chev. Monza	3,667	24	2	2.0	7	2,750	179	40	151	2.73	Domestic
19	Chev. Nova	3,955	19	3	3.5	13	3,430	197	43	250	2.56	Domestic
20	Dodge Colt	3,984	30	5	2.0	8	2,120	163	35	98	3.54	Domestic
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24	Ford Fiesta	4,389	28	.	1.5	9	1,800	147	33	98	3.15	Domestic

```
. mean price
```

```
Mean estimation          Number of obs   =          74
```

	Mean	Std. Err.	[95% Conf. Interval]	
price	6165.257	342.8719	5481.914	6848.6

```
.
. ** Output appears is copied to the log file
.
```

```
Stata/SE 15.0 - C:\Program Files (x86)\Stata15\ado\base\auto.dta
File Edit Data Graphics Statistics User Window Help
. mean price
Mean estimation          Number of obs   =          74

```

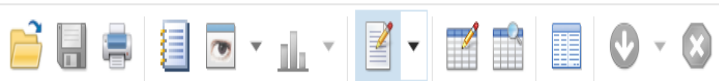
	Mean	Std. Err.	[95% Conf. Interval]	
price	6165.257	342.8719	5481.914	6848.6

```
.
. * output appears here in the main Stata (black) window
.
```



Opening a .do file...

File Edit Data Graphics Statistics User Window Help



New Do-file Editor



Stata/SE 15.0  
Statistics/Data Analysis  
Special Edition

Copyright 1985-2017 StataCorp LLC

StataCorp

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800-STATA-PC

<http://www.stata.com>

979-696-4600

[stata@stata.com](mailto:stata@stata.com)

979-696-4601 (fax)

Unlimited-user Stata network license expires 14 Sep 2018:

Serial number: 401509006065

Licensed to: Vernon Gayle

University of Edinburgh

Notes:



Do-file Editor - Untitled2.do

File Edit View Project Tools

New ▶

Open ▶

Close

Close project



Save Ctrl+S

Save as... Ctrl+Shift+S

Save all

Save project



Print Ctrl+P

Print preview

Print setup...

Recent files ▶

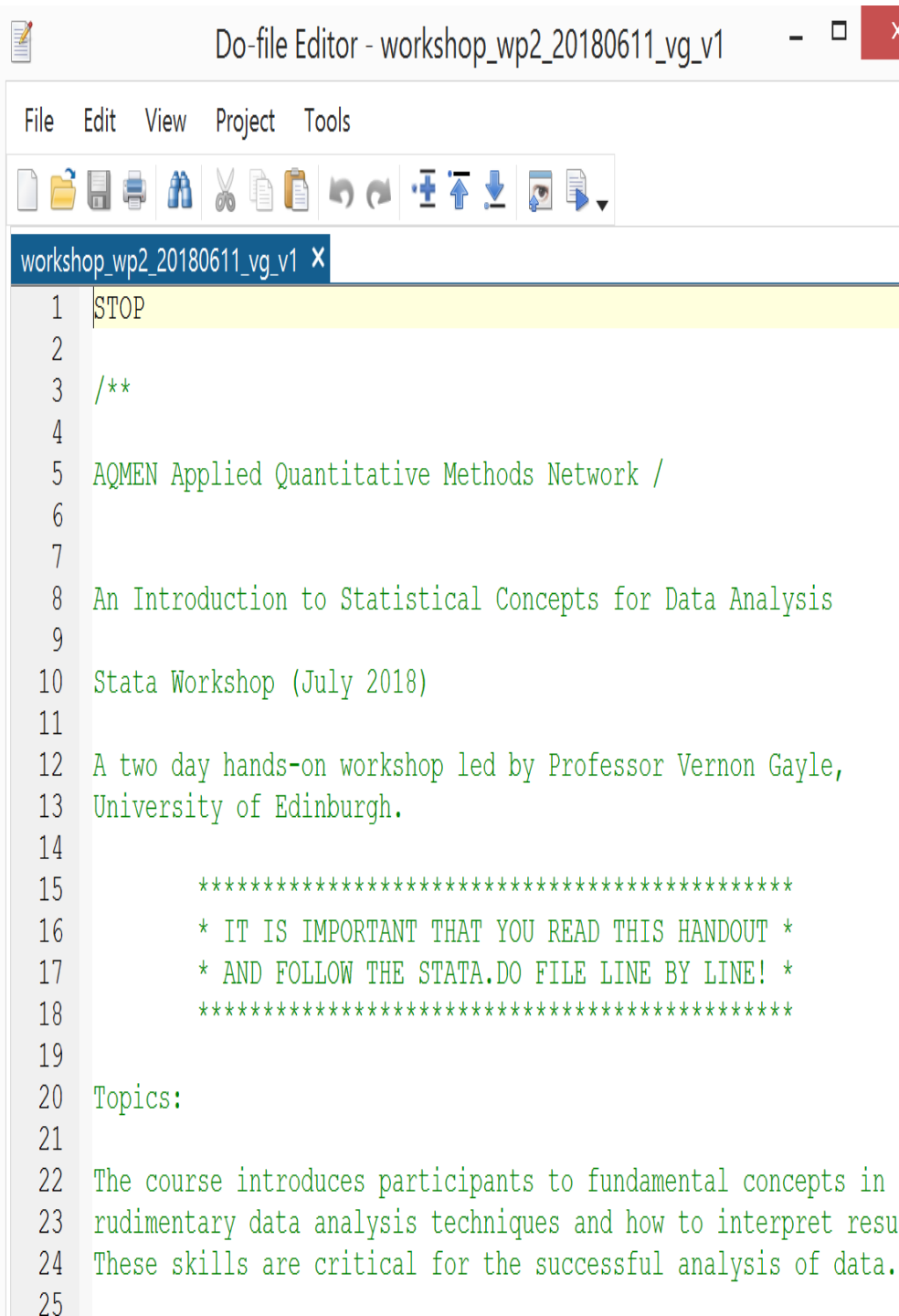
Recent projects ▶

Exit



Open Ctrl+O

Project...





File Edit View Project Tools



Execute selection (do)

workshop\_wp2\_20180611\_vg\_v1 x

```
187
188
189 *****
190 *
191 *           Setting Up Stata
192 *
193 *****
194
195 * This section is about organising preliminary settings in Stata *
196
197 * clear the computer memory *
198 clear
199
200
201 /** More causes Stata to display --more-- and pause until any key is pressed.
202     It is usually more convenient to have this function switched off **/
203
204 set more off
205
206 * keep a log file containing your output *
207
208 * close any log files that might already be running *
209
210 capture log close
211
```

File Edit View Project Tools



Execute selection (do)

workshop\_wp2\_20180611\_vg\_v1 x

```
187
188
189 *****
190 *
191 *           Setting Up Stata
192 *
193 *****
194
195 * This section is about organising preliminary settings in Stata *
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204 set more off
205
206 * keep a log file containing your output *
207
208 * close any log files that might already be running *
209
210 capture log close
211
```

**Techies might like to use ctrl d**

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**2018**

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