```
                                              __  ___  ___  ___  ___(R)
                                             /__  /  __/  /  __/
                                            ___/  /  /__/  /  /__/
                                              Statistics/Data analysis
```

```
      4. }
  1 .
  2 . clear

  3 . set more off

  4 . cd "C:\Users\wonja\Documents\GitHub\14.320\PS3"
    C:\Users\wonja\Documents\GitHub\14.320\PS3

  5 . use STAR_public_use

  6 .
  7 . * Problem 2.(a) i.
  8 .
  9 . local all_treatments = "ssp sfp sfsp"

 10 . foreach treatment in `all_treatments' {
      2.     ttest grade_20059_fall if control == 1 | `treatment' == 1, by(`treatme
    > nt')
      3.         eststo: quietly estpost ttest grade_20059_fall if control == 1 | `
    > treatment' == 1, by(`treatment')
      4. }
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	854	63.85714	.4120091	12.04026	63.04847	64.66581
1	212	64.13365	.8680953	12.63966	62.4224	65.8449
combined	1,066	63.91213	.3723244	12.15626	63.18156	64.64271
diff		-.276505	.9331853		-2.107597	1.554587

```
    diff = mean(0) - mean(1)                              t =  -0.2963
Ho: diff = 0                            degrees of freedom =     1064

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.3835       Pr(|T| > |t|) = 0.7671        Pr(T > t) = 0.6165
(est1 stored)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	854	63.85714	.4120091	12.04026	63.04847	64.66581
1	219	65.83067	.7538433	11.15586	64.34492	67.31642
combined	1,073	64.25994	.3628792	11.88672	63.54791	64.97198
diff		-1.973527	.8987481		-3.737034	-.2100199

```
    diff = mean(0) - mean(1)                              t =  -2.1959
Ho: diff = 0                            degrees of freedom =     1071

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0142       Pr(|T| > |t|) = 0.0283        Pr(T > t) = 0.9858
(est2 stored)
```

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	854	63.85714	.4120091	12.04026	63.04847	64.66581
1	119	66.0979	.9801826	10.69253	64.15687	68.03893
combined	973	64.13119	.3815353	11.90121	63.38246	64.87992
diff		-2.240756	1.162893		-4.52283	.0413174

```
    diff = mean(0) - mean(1)                              t =  -1.9269
Ho: diff = 0                            degrees of freedom =      971
```

```
      Ha: diff < 0                  Ha: diff != 0                  Ha: diff > 0
   Pr(T < t) = 0.0271        Pr(|T| > |t|) = 0.0543        Pr(T > t) = 0.9729
   (est3 stored)

11 . esttab using PS3-2ai.tex, replace compress cells("b(label(diff) fmt(a3) star)
   > t(fmt(a3))" se(par fmt(a3))) label nonumber mtitles(`all_treatments') stats(
   > N, fmt(%9.0gc) label(Observations)) addnote("standard errors in parentheses"
   > "@starlegend")
   (output written to PS3-2ai.tex)

12 . eststo clear

13 .
14 . * Problem 2.(a) ii.
15 .
16 . gen treat = 1 - control

17 . foreach treatment in `all_treatments' {
   2.       eststo: reg grade_20059_fall treat if treat == 0 | `treatment' == 1
   3. }
```

Source	SS	df	MS			
Model	12.9850142	1	12.9850142			
Residual	157367.082	1,064	147.901393			
Total	157380.067	1,065	147.774711			

		Number of obs	=	1,066
		F(1, 1064)	=	0.09
		Prob > F	=	0.7671
		R-squared	=	0.0001
		Adj R-squared	=	-0.0009
		Root MSE	=	12.161

grade_2005~l	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
treat	.276505	.9331853	0.30	0.767	-1.554587	2.107597
_cons	63.85714	.416157	153.44	0.000	63.04056	64.67372

(est1 stored)

Source	SS	df	MS
Model	678.872694	1	678.872694
Residual	150788.333	1,071	140.792094
Total	151467.205	1,072	141.294035

		Number of obs	=	1,073
		F(1, 1071)	=	4.82
		Prob > F	=	0.0283
		R-squared	=	0.0045
		Adj R-squared	=	0.0036
		Root MSE	=	11.866

grade_2005~l	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
treat	1.973527	.8987481	2.20	0.028	.2100199	3.737034
_cons	63.85714	.4060319	157.27	0.000	63.06043	64.65385

(est2 stored)

Source	SS	df	MS
Model	524.422422	1	524.422422
Residual	137148.484	971	141.244577
Total	137672.907	972	141.638793

		Number of obs	=	973
		F(1, 971)	=	3.71
		Prob > F	=	0.0543
		R-squared	=	0.0038
		Adj R-squared	=	0.0028
		Root MSE	=	11.885

grade_2005~l	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
treat	2.240756	1.162893	1.93	0.054	-.0413174	4.52283
_cons	63.85714	.4066839	157.02	0.000	63.05906	64.65522

(est3 stored)

```
18 . esttab using PS3-2aii.tex, replace compress cells("b(label(coef) fmt(a3) star
   > ) t(fmt(a3)))" se(par fmt(a3))) label nonumber varlabels(treat "Fall grade" _c
   > ons "Constant") mtitles(`all_treatments') stats(N, fmt(%9.0gc) label(Observat
   > ions)) addnote("standard errors in parentheses" "@starlegend")
   (output written to PS3-2aii.tex)

19 . eststo clear

20 .
21 . * Problem 2.(b) i.
22 .
23 . eststo: reg grade_20059_fall `all_treatments'
```

Source	SS	df	MS			
				Number of obs	=	1,404
				F(3, 1400)	=	2.49
Model	1058.00605	3	352.668683	Prob > F	=	0.0585
Residual	197988.856	1,400	141.420611	R-squared	=	0.0053
				Adj R-squared	=	0.0032
Total	199046.862	1,403	141.872318	Root MSE	=	11.892

grade_2005~l	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
ssp	.276505	.912511	0.30	0.762	-1.513531	2.066541
sfp	1.973527	.900752	2.19	0.029	.2065578	3.740496
sfsp	2.240756	1.163618	1.93	0.054	-.0418661	4.523379
_cons	63.85714	.4069372	156.92	0.000	63.05887	64.65542

   (**est1** stored)

```
24 . esttab using PS3-2bi.tex, replace compress label nonumber stats(N, fmt(%9.0gc
   > ) label(Observations))
   (output written to PS3-2bi.tex)

25 . eststo clear

26 .
27 . * Problem 2.(c)
28 .
29 . gen sfp_sfsp = 0

30 . replace sfp_sfsp = 1 if sfp == 1 | sfsp == 1
   (400 real changes made)

31 . eststo: reg grade_20059_fall ssp sfp_sfsp
```

Source	SS	df	MS			
				Number of obs	=	1,404
				F(2, 1401)	=	3.72
Model	1052.49996	2	526.24998	Prob > F	=	0.0244
Residual	197994.362	1,401	141.323599	R-squared	=	0.0053
				Adj R-squared	=	0.0039
Total	199046.862	1,403	141.872318	Root MSE	=	11.888

grade_2005~l	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
ssp	.276505	.9121979	0.30	0.762	-1.512916	2.065926
sfp_sfsp	2.067611	.7639381	2.71	0.007	.5690247	3.566196
_cons	63.85714	.4067976	156.98	0.000	63.05914	64.65514

   (**est1** stored)

32 . esttab using PS3-2c.tex, replace compress label nonumber varlabels(sfp_sfsp "
   > Offered sfp or sfsp" _cons "Constant") stats(N, fmt(%9.0gc) label(Observation
   > s))
   (output written to PS3-2c.tex)

33 . eststo clear

34 .
35 . * Problem 2.(d)
36 .
37 . eststo: reg grade_20059_fall ssp sfp_sfsp female gpa0 dad1 dad2 mom1 mom2

Source	SS	df	MS			
				Number of obs	=	1,278
				F(8, 1269)	=	16.08
Model	16486.126	8	2060.76575	Prob > F	=	0.0000
Residual	162622.714	1,269	128.150287	R-squared	=	0.0920
				Adj R-squared	=	0.0863
Total	179108.84	1,277	140.25751	Root MSE	=	11.32

grade_2005~l	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
ssp	.1908673	.9151563	0.21	0.835	-1.604518	1.986253
sfp_sfsp	2.136966	.7672738	2.79	0.005	.6317011	3.642231
female	-2.106634	.645847	-3.26	0.001	-3.373679	-.8395882
gpa0	.7800754	.074752	10.44	0.000	.6334242	.9267266
dad1	-.5087557	1.057853	-0.48	0.631	-2.584089	1.566577
dad2	.8765685	.7553562	1.16	0.246	-.6053158	2.358453
mom1	.2396727	1.065061	0.23	0.822	-1.849801	2.329146
mom2	-.7278602	.7571471	-0.96	0.337	-2.213258	.7575376
_cons	3.808933	5.924037	0.64	0.520	-7.813052	15.43092

   (est1 stored)

38 . esttab using PS3-2d.tex, replace compress label nonumber varlabels(sfp_sfsp "
   > Offered sfp or sfsp" female "Female" _cons "Constant") stats(N, fmt(%9.0gc) l
   > abel(Observations))
   (output written to PS3-2d.tex)

39 . eststo clear

40 .
41 . log close
        name: <unnamed>
         log: C:\Users\wonja\Documents\GitHub\14.320\PS3\PS3-2.smcl
    log type: smcl
   closed on: 28 Mar 2021, 18:48:55