

The rm1 data

February 22, 2011

The data:

```
a 10 10 9 10
a 11 9 10 11
a 10 11 10 9
b 9 10 12 10
b 11 10 10 8
b 11 10 8 9
```

The SAS code and output:

```
options linesize=75;

data rm;
  infile "rm1.dat";
  input trt $ y1 y2 y3 y4;

proc glm;
  class trt;
  model y1 y2 y3 y4 = trt / nouni;
  repeated time;
```

The GLM Procedure

Class Level Information

Class	Levels	Values
trt	2	a b

Number of Observations Read	6
Number of Observations Used	6

The GLM Procedure

Repeated Measures Analysis of Variance

Repeated Measures Level Information

Dependent Variable	y1	y2	y3	y4
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Level of time	1	2	3	4
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MANOVA Test Criteria and Exact F Statistics
for the Hypothesis of no time Effect

H = Type III SSCP Matrix for time

E = Error SSCP Matrix

S=1 M=0.5 N=0

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.60922541	0.43	3	2	0.7557
Pillai's Trace	0.39077459	0.43	3	2	0.7557
Hotelling-Lawley Trace	0.64142857	0.43	3	2	0.7557
Roy's Greatest Root	0.64142857	0.43	3	2	0.7557

MANOVA Test Criteria and Exact F Statistics
for the Hypothesis of no time*trt Effect

H = Type III SSCP Matrix for time*trt

E = Error SSCP Matrix

S=1 M=0.5 N=0

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.64279155	0.37	3	2	0.7865
Pillai's Trace	0.35720845	0.37	3	2	0.7865
Hotelling-Lawley Trace	0.55571429	0.37	3	2	0.7865
Roy's Greatest Root	0.55571429	0.37	3	2	0.7865

The GLM Procedure

Repeated Measures Analysis of Variance

Tests of Hypotheses for Between Subjects Effects

Source	DF	Type III SS	Mean Square	F Value	Pr > F
trt	1	0.16666667	0.16666667	0.40	0.5614
Error	4	1.66666667	0.41666667		

The GLM Procedure

Repeated Measures Analysis of Variance

Univariate Tests of Hypotheses for Within Subject Effects

Source	DF	Type III SS	Mean Square	F Value	Pr > F
time	3	2.16666667	0.72222222	0.53	0.6698
time*trt	3	1.50000000	0.50000000	0.37	0.7779
Error(time)	12	16.33333333	1.36111111		

Adj Pr > F

Source	G - G	H-F-L
time	0.6190	0.6698
time*trt	0.7177	0.7779
Error(time)		

Greenhouse-Geisser Epsilon	0.7191
Huynh-Feldt-Lecoutre Epsilon	1.5893