The scaffold2 data

February 11, 2011

The data:

```
ecm1 2 70
ecm1 2 75
ecm1 2 65
ecm1 4 55
ecm1 4 70
ecm1 4 70
ecm1 8 60
ecm1 8 65
ecm1 8 65
ecm2 2 60
ecm2 2 65
ecm2 2 70
ecm2 4 60
ecm2 4 65
ecm2 4 65
ecm2 8 60
ecm2 8 70
ecm2 8 60
ecm3 2 80
ecm3 2 60
ecm3 2 75
ecm3 4 75
ecm3 4 70
ecm3 4 75
ecm3 8 70
ecm3 8 80
ecm3 8 70
```

The SAS code and output:

```
data scaffold;
  infile "scaffold2.dat";
  input material $ weeks gpi;
```

```
proc print;

proc glm;
  class material weeks;
  model gpi=weeks|material;

proc glm;
  class material weeks;
  model gpi=weeks material;
  lsmeans material weeks / adjust=tukey lines;

run;
```

Obs	material	weeks	gpi
1	ecm1	2	70
2	ecm1	2	75
3	ecm1	2	65
4	ecm1	4	55
5	ecm1	4	70
6	ecm1	4	70
7	ecm1	8	60
8	ecm1	8	65
9	ecm1	8	65
10	ecm2	2	60
11	ecm2	2	65
12	ecm2	2	70
13	ecm2	4	60
14	ecm2	4	65
15	ecm2	4	65
16	ecm2	8	60
17	ecm2	8	70
18	ecm2	8	60
19	ecm3	2	80
20	ecm3	2	60
21	ecm3	2	75
22	ecm3	4	75
23	ecm3	4	70
24	ecm3	4	75
25	ecm3	8	70
26	ecm3	8	80
27	ecm3	8	70

```
The GLM Procedure
        Class Level Information
Class         Levels    Values
material           3    ecm1 ecm2 ecm3
```

```
weeks              3    2 4 8

Number of Observations Read          27
Number of Observations Used          27

The GLM Procedure
Dependent Variable: gpi
                                    Sum of
Source                      DF         Squares     Mean Square    F Value    Pr > F
Model                        8      468.518519       58.564815       1.62    0.1874
Error                       18      650.000000       36.111111
Corrected Total             26     1118.518519

R-Square     Coeff Var      Root MSE      gpi Mean
0.418874      8.890400      6.009252      67.59259

Source                      DF       Type I SS     Mean Square    F Value    Pr > F
weeks                        2      24.0740741      12.0370370       0.33    0.7209
material                     2     385.1851852     192.5925926       5.33    0.0152
material*weeks               4      59.2592593      14.8148148       0.41    0.7989

Source                      DF     Type III SS     Mean Square    F Value    Pr > F
weeks                        2      24.0740741      12.0370370       0.33    0.7209
material                     2     385.1851852     192.5925926       5.33    0.0152
material*weeks               4      59.2592593      14.8148148       0.41    0.7989

The GLM Procedure
        Class Level Information
Class         Levels    Values
material           3    ecm1 ecm2 ecm3
weeks              3    2 4 8

Number of Observations Read          27
Number of Observations Used          27

The GLM Procedure
Dependent Variable: gpi
                                    Sum of
Source                      DF         Squares     Mean Square    F Value    Pr > F
Model                        4      409.259259      102.314815       3.17    0.0335
Error                       22      709.259259       32.239057
Corrected Total             26     1118.518519

R-Square     Coeff Var      Root MSE      gpi Mean
0.365894      8.400247      5.677945      67.59259
```

Source	DF	Type I SS	Mean Square	F Value	Pr > F
weeks	2	24.0740741	12.0370370	0.37	0.6927
material	2	385.1851852	192.5925926	5.97	0.0085

Source	DF	Type III SS	Mean Square	F Value	Pr > F
weeks	2	24.0740741	12.0370370	0.37	0.6927
material	2	385.1851852	192.5925926	5.97	0.0085

The GLM Procedure
Least Squares Means
Adjustment for Multiple Comparisons: Tukey

material	gpi LSMEAN	LSMEAN Number
ecm1	66.1111111	1
ecm2	63.8888889	2
ecm3	72.7777778	3

Least Squares Means for effect material
Pr > |t| for H0: LSMean(i)=LSMean(j)
Dependent Variable: gpi

i/j	1	2	3
1		0.6886	0.0523
2	0.6886		0.0084
3	0.0523	0.0084	

Tukey Comparison Lines for Least Squares Means of material
LS-means with the same letter are not significantly different.

		gpi LSMEAN	material	LSMEAN Number
	A	72.77778	ecm3	3
	A			
B	A	66.11111	ecm1	1
B				
B		63.88889	ecm2	2

The GLM Procedure
Least Squares Means
Adjustment for Multiple Comparisons: Tukey

weeks	gpi LSMEAN	LSMEAN Number
2	68.8888889	1
4	67.2222222	2
8	66.6666667	3

Least Squares Means for effect weeks
Pr > |t| for H0: LSMean(i)=LSMean(j)

Dependent Variable: gpi

i/j	1	2	3
1		0.8093	0.6886
2	0.8093		0.9766
3	0.6886	0.9766	

Tukey Comparison Lines for Least Squares Means of weeks
LS-means with the same letter are not significantly different.

	gpi LSMEAN	weeks	LSMEAN Number
A	68.88889	2	1
A			
A	67.22222	4	2
A			
A	66.66667	8	3