The profile data

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The data:

```
bellydancer 7 10 6 5
bellydancer 8 9 5 7
bellydancer 5 10 5 8
bellydancer 6 10 6 8
bellydancer 7 8 7 9
politician  4 4 4 4
politician 6 4 5 3
politician 5 5 5 6
politician 6 6 6 7
politician 4 5 6 5
admin 3 1 1 2
admin 5 3 1 5
admin 4 2 2 5
admin 7 1 2 4
admin 6 3 3 3
```

The SAS code and output:

```
options linesize=80;

data profile;
  infile "profile.dat";
  input group $ read dance tv ski;

proc means;

proc glm;
  class group;
  model read dance tv ski = group / nouni;
  repeated activity 4 profile;
  lsmeans group;

run;
```

The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
read	15	5.5333333	1.4074631	3.0000000	8.0000000
dance	15	5.4000000	3.2689011	1.0000000	10.0000000
tv	15	4.2666667	1.9808608	1.0000000	7.0000000
ski	15	5.4000000	2.0632845	2.0000000	9.0000000

The GLM Procedure

Class Level Information

Class	Levels	Values
group	3	admin bellydan politici

Number of Observations Read	15
Number of Observations Used	15

The GLM Procedure
Repeated Measures Analysis of Variance

Repeated Measures Level Information

Dependent Variable	read	dance	tv	ski
Level of activity	1	2	3	4

MANOVA Test Criteria and Exact F Statistics
for the Hypothesis of no activity Effect
H = Type III SSCP Matrix for activity
E = Error SSCP Matrix
S=1 M=0.5 N=4

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.27913735	8.61	3	10	0.0040
Pillai's Trace	0.72086265	8.61	3	10	0.0040
Hotelling-Lawley Trace	2.58246571	8.61	3	10	0.0040
Roy's Greatest Root	2.58246571	8.61	3	10	0.0040

MANOVA Test Criteria and F Approximations for
the Hypothesis of no activity*group Effect
H = Type III SSCP Matrix for activity*group
E = Error SSCP Matrix
S=2 M=0 N=4

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.07627855	8.74	6	20	<.0001
Pillai's Trace	1.43341443	9.28	6	22	<.0001
Hotelling-Lawley Trace	5.42784967	8.73	6	11.714	0.0009
Roy's Greatest Root	3.54059987	12.98	3	11	0.0006

NOTE: F Statistic for Roy's Greatest Root is an upper bound.
NOTE: F Statistic for Wilks' Lambda is exact.

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
group	2	172.9000000	86.4500000	44.14	<.0001
Error	12	23.5000000	1.9583333		

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
activity	3	15.78333333	5.26111111	4.72	0.0070
activity*group	6	55.36666667	9.22777778	8.28	<.0001
Error(activity)	36	40.10000000	1.11388889		

	Adj Pr > F	
Source	G - G	H-F-L
activity	0.0126	0.0070
activity*group	<.0001	<.0001
Error(activity)		

Greenhouse-Geisser Epsilon	0.7986
Huynh-Feldt-Lecoutre Epsilon	1.0115

The GLM Procedure
Least Squares Means

group	read LSMEAN	dance LSMEAN	tv LSMEAN	ski LSMEAN
admin	5.00000000	2.00000000	1.80000000	3.80000000
bellydan	6.60000000	9.40000000	5.80000000	7.40000000
politici	5.00000000	4.80000000	5.20000000	5.00000000