```
/* two-stage nested design */

data purity;
input supp batch resp@@;
datalines;
1 1 1 1 1 -1 1 1 0
1 2 -2 1 2 -3 1 2 -4
1 3 -2 1 3 0 1 3 1
1 4 1 1 4 4 1 4 0
2 1 1 2 1 -2 2 1 -3
2 2 0 2 2 4 2 2 2
2 3 -1 2 3 0 2 3 -2
2 4 0 2 4 3 2 4 2
3 1 2 3 1 4 3 1 0
3 2 -2 3 2 0 3 2 2
3 3 1 3 3 -1 3 3 2
3 4 3 3 4 2 3 4 1
;
/* if both supp and batch are random*/
proc mixed data=purity method=type1 CL covtest;  /* you may change the method to "REML" */
class supp batch;
model resp=;
random supp batch(supp);
run;


/* if only batch is random*/
proc mixed data=purity method=type1 CL covtest;
class supp batch;
model resp=supp;
random batch(supp);
lsmeans supp / alpha=.05 cl diff adjust=tukey;
run;


/* if both supp and batch are fixed*/
proc mixed data=purity method=type1 CL covtest;
class supp batch;
model resp=supp batch(supp);
lsmeans supp / alpha=.05 cl diff adjust=tukey;
run;
```