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Multiplication of tables in SAS SOLVED

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Osebeyo

Occasional Contributor

Multiplication of tables in SAS

09-19-2012 05:06 AM



Posts: 13

Hi,

I am trying to get the product of two dataset, is there an easier way of doing this in SAS or if there is a macro, that will be appreciated

The data is in this form;

dataset A (1X3 MATRIX)

COL1 COL2 COL3

4 7 9

Dataset B

COL1 COL2 COL3

5 10 12

9 12 8

16 1 7

The output should be in the form of multiplying all the rows in COL1 in dataset B by COL1 in dataset B ...

OUTPUT TABLE

COL1 COL2 COL3

20 70 108

36 84 72

64 7 63

Amos

Message 1 of 10 (1,607

Views)

0 Likes

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Accepted Solutions



SOLUTION

09-19-2012 06:08 AM



DanielSantos

Super Contributor



Posts: 373

Re: Multiplication of tables in SAS

09-19-2012 06:08 AM

```
data RESULT;
set A (rename = (COL1-COL3=COLA1-COLA3));
drop COLA: COLB:; * drop original columns;
do until (_EOF); * iterate through B for each obs in A;
set B (rename = (COL1-COL3=COLB1-COLB3)) end=_EOF;
COL1=COLA1*COLB1;
COL2=COLA2*COLB2;
```

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09-19-2012 05:06 AM

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```
COL3=COLA3*COLB3;
output; * output result;
end;
run;
```

Cheers from Portugal.
Daniel Santos @ www.cgd.pt

[View solution in original post](#)

Message 2 of 10 (1,792 Views)

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SOLUTION

09-19-2012 06:08 AM

 **DanielSantos**
Super Contributor



Posts: 373

Re: Multiplication of tables in SAS

09-19-2012 06:08 AM


```
data RESULT;
set A (rename = (COL1-COL3=COLA1-COLA3));
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set B (rename = (COL1-COL3=COLB1-COLB3)) end=_EOF;
COL1=COLA1*COLB1;
COL2=COLA2*COLB2;
COL3=COLA3*COLB3;
output; * output result;
end;
run;
```

Cheers from Portugal.
Daniel Santos @ www.cgd.pt

Message 2 of 10 (1,793 Views)

1 Like

Reply

 **Osebeyo**
Occasional Contributor



Posts: 13

Re: Multiplication of tables in SAS

09-19-2012 07:26 AM

Thanks, it worked

Message 3 of 10 (934 Views)

0 Likes

Reply

 **Keith**
Regular Contributor



Posts: 151

Re: Multiplication of tables in SAS

09-19-2012 07:28 AM

@Daniel, you can simplify your code slightly to the following.

```
data RESULT;
if _n_=1 then set A (rename = (COL1-COL3=COLA1-COLA3));
set B (rename = (COL1-COL3=COLB1-COLB3));
COL1=COLA1*COLB1;
COL2=COLA2*COLB2;
COL3=COLA3*COLB3;
drop COLA: COLB:; * drop original columns;
run;
```

Message 4 of 10 (934 Views)

3 Likes

Reply

 **DanielSantos**
Super Contributor



Posts: 373

Re: Multiplication of tables in SAS

09-19-2012 09:45 AM

Thanks Keith for the contribution.

It's a good variation, should be noted though that it will only run as expected with a one row only table (A), as was actually Amos's example.

Performance wise I don't really know which is better, for the proposed scenario (1 row only table), both solutions would perform a unique complete read of both tables. The do/until condition gets evaluated before each iteration, but I believe, from my understanding the same happens for the if _N_=1.

Cheers from Portugal.

Daniel Santos @ www.cgd.pt

Message 5 of 10 (934 Views)

0 Likes

Reply

 **Patrick**
Respected Advisor



Posts: 3,236

Re: Multiplication of tables in SAS


09-19-2012 07:14 AM

```
data TableA;
  input COL1 COL2 COL3;
datalines;
4 7 9
;
run;
data TableB;
  input COL1 COL2 COL3;
datalines;
5 10 12
9 12 8
16 1 7
;
run;
proc sql;
  create table want as
  select
    a.col1*b.col1 as col1
    , a.col2*b.col2 as col2
    , a.col3*b.col3 as col3
  from TableA a, TableB b
  ;
quit;
```

Message 6 of 10 (934 Views)

5 Likes

Reply

 **Haikuo**
Respected Advisor



Posts: 3,085

Re: Multiplication of tables in SAS

09-19-2012 10:38 AM

Nice, Patrick. Isn't this what SQL does the best: Cartesian Products?
Haikuo

Message 7 of 10 (934 Views)

0 Likes

Reply

 **Haikuo**
Respected Advisor



Posts: 3,085

Re: Multiplication of tables in SAS

09-19-2012 10:20 AM

Care some hash()ing ?

```
data A;
input COL1 COL2 COL3
;
cards;
4          7          9
;
```

```


Data B;
input COL1 COL2 COL3
;
cards;
5          10      12
9          12      8
16         1       7
;
data product;
if _n_=1 then do;
  if 0 then set b;
  dcl hash b(dataset:'b', multidata:'y');
  b.definekey(all:'y');
  b.definedata(all:'y');
  b.definedone();
  dcl hiter hb('b');
end;
set a (rename=(col1=_col1 col2=_col2 col3=_col3));
rc=hb.first();
do rc=0 by 0 while (rc=0);
  col1=col1*_col1; col2=col2*_col2; col3=col3*_col3;
output;
  rc=hb.next();
end;
keep col;;
run;
Haikuo

```

Message 8 of 10 (934 Views)

0 Likes

Reply

 **data_null_**
Super User



Posts: 3,651

Re: Multiplication of tables in SAS

09-19-2012 10:33 AM

SAS/Stat has a tool for this, PROC SCORE. You have to rearrange the scoring data (your data A) slightly and PROC SCORE will only create new variables.

```

data a;
input col1-col3;
cards;
4 7 9
run;
proc transpose data=a out=a2 prefix=P;
var col1-col3;
run;
proc transpose data=a2 out=a3;
by _name_;
id _name_;
var p1;

```

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```


set a3;
_name_=cats('P',_name_);
run;
data b;
input col1-col3;
cards4;
5      10      12
9      12      8
16     1       7
;;;;
run;
proc score score=a3 data=b;
var col1-col3;
run;

```

Message 9 of 10 (934 Views)

0 Likes

Reply



data_null_
Super User



Posts: 3,651

Re: matching column field name to a row value and pulling in a different value from the same row

09-21-2012 11:29 AM

Is this reply associated with the correct subject? No it should be associated with "How to multiply data sets thread".

Message was edited by: data _null_

Message 10 of 10 (934 Views)

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