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/*
Merging tables in SAS is a fundamental operation in statistical programming for combining data
from multiple sources. Here are some short notes on merging tables in SAS:

Purpose:
Merging tables allows you to combine data based on common variables, enabling comprehensive
analysis by consolidating information from different sources into a single dataset.

Types of merges:
 SAS offers several types of merges, including the basic merge (one-to-one),
one-to-many merge, many-to-one merge, and many-to-many merge. The type of merge depends on the
relationship between the common variables in the datasets being merged.

Merge statement:
The MERGE statement is used in SAS to merge datasets. It specifies the datasets to be merged,
the common variable(s) to match on, and the type of merge to perform.

Key variables:
 Common variables (also called key variables) are essential for merging tables.
hey act as a link between the datasets, allowing SAS to match observations based on their values.

Resulting dataset:
 The merge operation creates a new dataset that contains all the variables from both datasets involved in the merge
 The resulting dataset can be further manipulated and analyzed.

Data integrity:
It's crucial to ensure data integrity during the merge process.
Checking for duplicates, missing values, and sorting the datasets can help avoid issues and produce accurate results

Merging options:
 SAS provides additional options to customize the merge process,
such as IN= and OUT= options to control which datasets are used and where the result is stored, respectively.

Performance considerations:
When merging large datasets, optimizing performance is essential.
 Properly indexing the datasets, using appropriate merge types, and reducing unnecessary variables can improve effic

DATA Student;
input Id First_Name$ Last_Name$ DOB;
informat DOB ddmmyy10.;
format DOB ddmmyy10.;
datalines;
2109 Pradip Fulpagare 09/07/2000
2119 Kanchan Mahajan 30/07/2000
2131 Nikita Patil 12/07/2000
2144 Chetan Salunke 03/05/2000
;
proc print data=Student;

data score;
input percentage CGPA;
datalines;
71 8.6
70 8.4
65 7.8
72 8.7
;

/*-----------------------------------------------------------------------------------------------------------*/
data combine;
set Student;
set score;
run;
proc print data=combine;

/*-----------------------------------------------------------------------------------------------------------*/
data domain;
input  Id First_Name$ Last_Name$ domain$30.;
datalines;
2109 Pradip Fulpagare Statistician
2119 Kanchan Mahajan Statistical_Programmer
2131 Nikita Patil Statistician
2144 Chetan Salunke Machine_Learning_Engineer
;


DATA Student2;
input Id First_Name$ Last_Name$ DOB;
informat DOB ddmmyy10.;
format DOB ddmmyy10.;
datalines;
```

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2111 Sachine Ghogare  09/07/2000
2125 Komal Borse 30/07/2000

;
proc print data=Student2;

/*-------------------------------------------------------------------------------------------------------------*/
data combine2;
set Student domain;
proc print data=combine2;
/*-------------------------------------------------------------------------------------------------------------*/

data combine3;
set Student2;
set Domain;
proc print data=combine3;
/*-------------------------------------------------------------------------------------------------------------*/
data score2;
input ID percentage CGPA;
datalines;
2109 71 8.6
2119 70 8.4
2131 65 7.8
2144 72 8.7
;

/*-------------------------------------------------------------------------------------------------------------*/

proc sort data=Student;by Id;
proc sort data=Score2;by Id;
data combine4;
merge Student Score2;
by Id;
proc print data=combine4;

data combine5;
set  Student Score2;
proc print data=combine5;


data combine6;
set Student;
set Score2;
proc print data=combine6;


data combine7;
set Student Student2;
proc print data=combine7;


data cust1;
input  ContactName$ Transaction_Amount;
datalines;
 Chetan 500
 Pradip 400
 Nikita 300
 Kanchan 400
;

data cust2;
input ContactName$ City$ Country$;
datalines;
 Sachin Nagar  PAK
 Komal Vadaji  UK
 Chetan Chopda India
 Pradip Vele USA
;

proc sort data=cust1;by ContactName ;
proc sort data=cust2;by ContactName;
data com_;
merge cust1 cust2;
by ContactName;

proc print data=com_;

/*-------------------------------------------------------------------------------------------------------------*/

proc sort data=cust1;by ContactName ;
proc sort data=cust2;by ContactName;
data com_condition;
```

```
merge cust1(in=a)
 cust2(in=b);
by ContactName;
if a;

proc print data=com_condition;
/*-----------------------------------------------------------------------------------------------------------*/

proc sort data=cust1;by ContactName ;
proc sort data=cust2;by ContactName;
data com_condition2;
merge cust1(in=a)
 cust2(in=b);
by ContactName;
if a and b;

proc print data=com_condition2;
/*-----------------------------------------------------------------------------------------------------------*/
DATA Student;
input Id First_Name$ Last_Name$ DOB;
informat DOB ddmmyy10.;
format DOB ddmmyy10.;
datalines;
2109 Pradip Fulpagare 09/07/2000
2119 Kanchan Mahajan 30/07/2000
2131 Nikita Patil 12/07/2000
2144 Chetan Salunke 03/05/2000
;
DATA Student2;
input Id First_Name$ Last_Name$ DOB;
informat DOB ddmmyy10.;
format DOB ddmmyy10.;
datalines;
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;

proc append base=Student data=Student2;
proc print data=Student;  /* Original Data get change*/
```