



Mu Sigma

MSU SAS Content

In-depth Informats and Formats

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SAS provides different ways to assign attributes to the values in variables

- ▶ Any SAS variable can be stored or displayed in different ways, which is done by defining Informats and Formats for the variable
- ▶ SAS typically has 3 types of variables:
 - Character
 - Numeric
 - Date (Dates can also be considered Numeric)
- ▶ We can use Informats or Formats to achieve the following:

S. no.	Informats	Formats
1.	Tells SAS how to read the data	Tells SAS how to display the data
2.	Impacts the way data is stored	No impact
3.	Changing the Informat can change the data size	No impact
4.	Used with <code>Input</code> function	Used with <code>Put</code> function
5.	Character Informats: <code>\$INFORMATw.</code> Numeric Informats: <code>INFORMATw.d</code> Date/Time Informats: <code>INFORMATw.</code>	Character Formats: <code>\$FORMATw.</code> Numeric Formats: <code>FORMATw.d</code> Date/Time Formats: <code>FORMATw.</code>
6.	<code>informat txn_id \$6. tran_txn_dt mmdyy10. amount 8.2;</code>	<code>format txn_id \$6. tran_txn_dt mmdyy10. amount 8.2;</code>

Informats and Formats are of utmost importance while new variables are created

▶ When to Use Informats and Formats

- While Importing the files
- When new variables are created
- To change the display of a variable
- To optimize the code and dataset

▶ How to Use Informat/format:

▶ Input and Put functions are used to convert Character to Numeric and vice versa respectively

▶ Syntax:

INPUT(Variable name, Informat)

- INPUT(Emp_ID,6.): will convert Emp_ID character to Numeric value

PUT(Variable name, format)

- PUT(accn_id,10.): will convert accn_id Numeric to character value

```

data txn_data;
    infile transact lrecl=1000 firstobs=2 dsd trunccover;
    /*Specify the informats of the input variables*/
    informat   txn_id $6. tran_txn_dt mmdyy10. amount 8.2;
    /*input the variable names with the exact starting location*/
    input      @1 txn_id  @10 txn_dt @25 amount ;
run;

proc print data=txn_data;
    format txn_dt date9.
           amount dollar10.2;
    /*Instructs SAS to output txn_dt in DDMMYYYY format and
    amount in dollar10.2 format */
run;

```

SAS is intelligent enough to convert the variables to the required data types automatically

- ▶ SAS converts the Character to Numeric or reverse as per the need
 - E.g. While doing a mathematical calculation on Emp_ID in the previous example even before the conversion is done will still work, since SAS will convert Emp_ID to numeric values and then do the calculation. In this case a Note will be issued to Log window and SAS will assign default Informat/ formats to it

Data type	Format	Informat
Character	\$w.	\$w.
Numeric	BESTw.d	w.d
Date	MMDDYYw.d	MMDDYYw.d
Time	TIMEw.d	TIMEw.d
Currency	DOLLARw.d	none

- ▶ INPUTN, INPUTC, PUTN,PUTC functions can also be used to play around
- ▶ Proc Format can also be used to define formats of variables
- ▶ Note: The PUT function always returns a character variable while the INPUT function returns a type (numeric or character) dependent on the informat used in the argument