



1. Monthly Report - 2010_03_MAR.sa

Server List

- January 2010 OLD
- March 2010
- Test
- 1. PULMONARY REHAB descriptives.sas

Server List | Process Flow | Project | Binder List

Task Status | 1. Monthly Report - 2010_03_MAR.sas | WORK.FLU (read-only) | 1. Monthly Report - 2010_03_MAR.sas (Log)

```
7956 2206      data copd.practice;
7957 2207      retain rha rha_name report report_name;
7958 2208      set copd.report_practice_2010_JAN copd.report_practice_2010_FEB copd.report_practice_2010_MAR;
7959 ERROR: Variable report has been defined as both character and numeric.
7960 2209          if practice_id = 999 then hqc_practice_id = "ALL SASK";
7961 2210          format rate 4.1 num den 5.;
7962 2211      run;
7963 |
7964 NOTE: The SAS System stopped processing this step because of errors.
7965 WARNING: The data set COPD.PRACTICE may be incomplete. When this step was stopped there were 0 observations and
7966 WARNING: Data set COPD.PRACTICE was not replaced because this step was stopped.
7967 NOTE: DATA statement used (Total process time):
7968      real time          0.00 seconds
7969      cpu time           0.00 seconds
```





ERROR:

ERROR: Variable report has been defined as both character and numeric.

Server List

- January 2010 OLD
- March 2010
- ...
- PU...ONAP...REHA...descrip...es.s

ERROR:

```
7956 2206 de...cor...r...ice...
7958 2208 se...opt...report...pract...
7959 ERROR: Variable report has been defined as both character and numeric.
7960 2209 id...then...id...
7961 2210 ...4...5.;
7962 2211 run;
7963
```

ERROR:

ERROR:

ERROR: Variable report

Formatting Variables:

Back and forth between character and numeric

SASKATCHEWAN
**HEALTH
QUALITY**
COUNCIL



MEASURING AND
REPORTING FOR
LEARNING AND
IMPROVEMENT



Why should you care?

NOTE: Character values have been converted to numeric values at the places given by:
(Line) : (Column) .



Why should you care?

```
DATA name1;
```

```
SET name;
```

```
  if var = 'Three' then delete;
```

```
  if var = '3' then delete;
```

```
  if var = 3 then delete;
```

```
RUN;
```

NOTE: Character values have been converted to numeric values at the places given by:
(Line) : (Column) .



Why should you care?

```
DATA name1;  
SET name;  
    if var = 'Three' then delete;  
  
    if var = 3 then delete;  
RUN;
```

NOTE: Character values have been converted to numeric values at the places given by:
(Line) : (Column) .



Why should you care?

```
DATA name1;
```

```
SET name;
```

```
    if var = '3' then delete;
```

```
    if var = 3 then delete;
```

```
RUN;
```

NOTE: Character values have been converted to numeric values at the places given by:
(Line) : (Column) .



Why should you care?

```
DATA name1;
```

```
SET name;
```

```
  if var = 'Three' then delete;
```

```
  if var = '3' then delete;
```

```
RUN;
```

OK



Why should you care?

```
DATA name1;
```

```
SET name;
```

```
  if var = 'Three' then delete;
```

```
  if var = '3' then delete;
```

```
  if var = 3 then delete;
```

```
RUN;
```

OK

PROBLEM: Identify the same variable as character and numeric

SAS attempts to make them comparable

- Character \leftrightarrow Numeric

“Implicit” coding

Should avoid

- SAS is making the decisions – not you
- Opportunity to introduce errors
- FRUSTRATION!



Know the current format of your data.

PROC CONTENTS ; RUN ;



Alphabetic List of Variables and Attributes

#	Variable	Type	Len	Format	Informat	Label
94	ADL_DIF	Num	8			
91	ADL_MET	Num	8			
88	ADL_UN	Num	8			
99	ADL_need	Num	8			
47	ALFI	Num	8	11.	11.	ALFI
48	CDS	Num	8			
43	CSconfidence	Num	8			
27	CSfilial	Num	8			
42	CSindependence	Num	8			
3	DATEINTERVIEW	Num	8	DATE9.		
20	Education	Num	8			
93	IADL_DIF	Num	8			
90	IADL_MET	Num	8			
87	IADL_UN	Num	8			
98	IADL_need	Num	8			
2	INTERVIEW	Num	8	11.	11.	Interview
21	IncomeSatisfiesdich	Num	8			
92	PADL_DIF	Num	8			
89	PADL_MET	Num	8			
86	PADL_UN	Num	8			
97	PADL_need	Num	8			
14	S12Q36_1	Num	8	11.	11.	cane
15	S12Q36_2	Num	8	11.	11.	walker
16	S12Q36_3	Num	8	11.	11.	mech WC
17	S12Q36_4	Num	8	11.	11.	electric WC
18	S12Q36_5	Num	8	11.	11.	other
4	S1Q4	Num	8	11.	11.	civil status
5	S1Q8	Num	8	11.	11.	Co-habitants
1	SUBJECTID	Num	8	11.	11.	SubjectID
23	SocialContactSatisfies	Num	8	11.	11.	social contact satisfaction
41	SocialContactSatisfiesDich	Num	8			
40	SocialSupportSatisfies	Num	8			
116	_0	Num	8	DATE9.		
117	_12	Num	8	DATE9.		
141	aa_BL12	Num	8			
129	aa_cur	Num	8			
147	aa_cur12	Num	8			
123	aa_ever	Num	8			

SAS Enterprise Guide

	🔥 rha	🔥 rha_name	🔵 ind	🔥 ind_type	🔥 ind_desc
1	.			3 primary	Appropriate prescription of LABAs
2	1	Sun Country		3 primary	Appropriate prescription of LABAs
3	2	Five Hills		3 primary	Appropriate prescription of LABAs
4	3	Cypress		3 primary	Appropriate prescription of LABAs
5	4	Regina Qu'Appell		3 primary	Appropriate prescription of LABAs
6	5	Sunrise		3 primary	Appropriate prescription of LABAs
7	6	Saskatoon		3 primary	Appropriate prescription of LABAs
8	7	Heartland		3 primary	Appropriate prescription of LABAs
9	8	Kelsey Trail		3 primary	Appropriate prescription of LABAs
10	9	Prince Albert Park		3 primary	Appropriate prescription of LABAs
11	10	Prarie North		3 primary	Appropriate prescription of LABAs
12	15	North Saskatchewan		3 primary	Appropriate prescription of LABAs
13	999	ALL SASK		3 primary	Appropriate prescription of LABAs

Regular SAS

	CHAR	CHAR	NUM	CHAR	CHAR	
1	.			3	primary	Appropriate prescription of LABAs
2	1	Sun Country		3	primary	Appropriate prescription of LABAs
3	2	Five Hills		3	primary	Appropriate prescription of LABAs
4	3	Cypress		3	primary	Appropriate prescription of LABAs
5	4	Regina Qu'Appell		3	primary	Appropriate prescription of LABAs
6	5	Sunrise		3	primary	Appropriate prescription of LABAs
7	6	Saskatoon		3	primary	Appropriate prescription of LABAs
8	7	Heartland		3	primary	Appropriate prescription of LABAs
9	8	Kelsey Trail		3	primary	Appropriate prescription of LABAs
10	9	Prince Albert Park		3	primary	Appropriate prescription of LABAs
11	10	Prarie North		3	primary	Appropriate prescription of LABAs
12	15	North Saskatchewan		3	primary	Appropriate prescription of LABAs
13	999	ALL SASK		3	primary	Appropriate prescription of LABAs

**How do I decide what format
my variable should be?**



Selecting the best format

Obvious choices

- if a variable contains non-numeric information → character
- If a variable contains numeric data → numeric

Not so obvious choices

- Integer data that won't be used in any calculations
 - ID Number = 1757638
- Nominal variables
 - Sex: 1 = Male, 2 = Female

Use numeric variables whenever possible

- Eliminates leading and trailing blanks



Now that I know what format I want, how do make it happen?

INFORMATS

FORMATS

INPUT & PUT statements



Changes how the variable is presented but does not change the variable itself

Tells SAS how to read data from external files into SAS variables

Instructions for outputting data

INFORMAT

FORMAT

Non-SAS input file

SAS dataset

Output

INPUT statement
PUT statement



INFORMAT

```
DATA name;
```

```
Infile 'C:/My Files/Jacq' ;
```

```
informat VAR1 $8.;
```

```
informat VAR2 4.1;
```

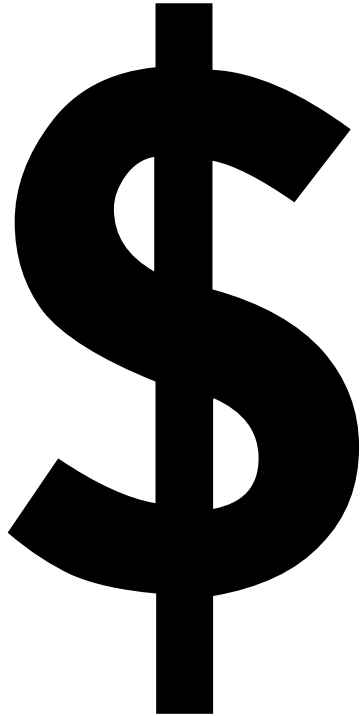
```
input VAR1 $
```

```
VAR2
```

```
;
```

```
RUN;
```





Numeric examples

- 4.1
- COMMA10.
- HEX4.

Character examples

- \$CHAR10.
- \$10.
- \$HEX4.



FORMAT

```
PROC FORMAT;  
value gender      1 = 'Male'  
                  2 = 'Female';
```

```
RUN;
```

```
PROC PRINT;  
VAR var_name;  
FORMAT var_name gender.;  
RUN;
```

FORMAT

```
PROC FORMAT;  
value gender      1 = 'Male'  
                  2 = 'Female';
```

```
RUN;
```

```
PROC PRINT;  
VAR var_name;  
FORMAT var_name gender. ;  
RUN;
```



FORMAT

```
PROC FORMAT;  
value gender 'M' = 'Male'  
            'F' = 'Female';  
RUN;
```



FORMAT

```
PROC FORMAT;  
value $gender    'M' = 'Male'  
                 'F' = 'Female';
```

```
RUN;
```

```
PROC PRINT;  
VAR var_name;  
FORMAT var_name $gender.;  
RUN;
```



INPUT & PUT Statements

INPUT - converts character to numeric

PUT - converts numeric to character

Not possible to directly change the type of variable

- Must create new variable
 - Rename
 - Drop



```
DATA data1;
```

```
SET data;
```

```
/*Character to numeric */
```

```
new_num=INPUT(char_var,$4);
```

```
/* Numeric to character */
```

```
new_char=PUT(num_var,4.0);
```

```
RUN;
```

In sum....

SASKATCHEWAN
**HEALTH
QUALITY**
COUNCIL



MEASURING AND
REPORTING FOR
LEARNING AND
IMPROVEMENT



What format should you use when the choice is not obvious?

NUMERIC

Why?

Don't have to worry about leading or trailing blanks



Know the current format of your data.

1. PROC CONTENTS

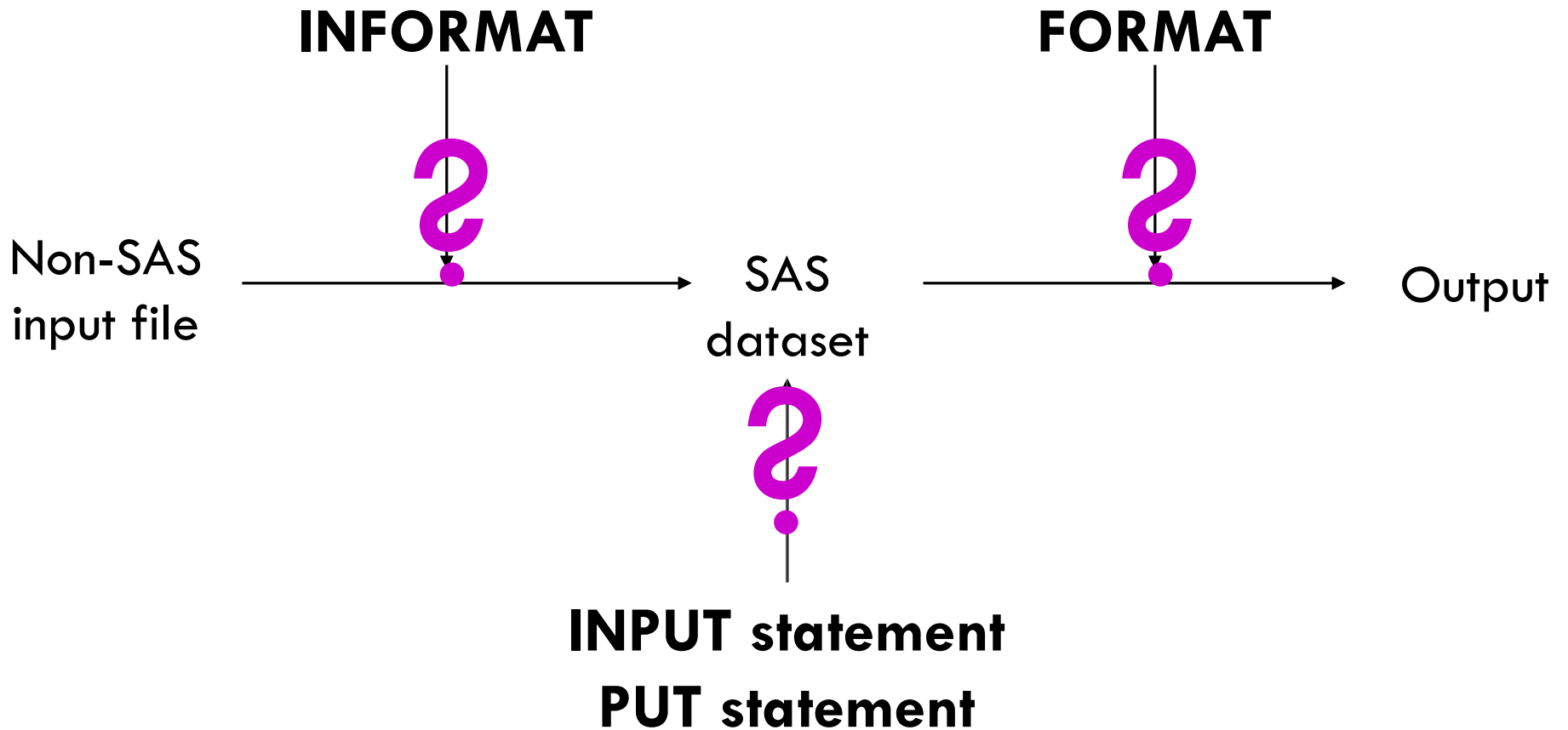
2. Enterprise Guide SAS

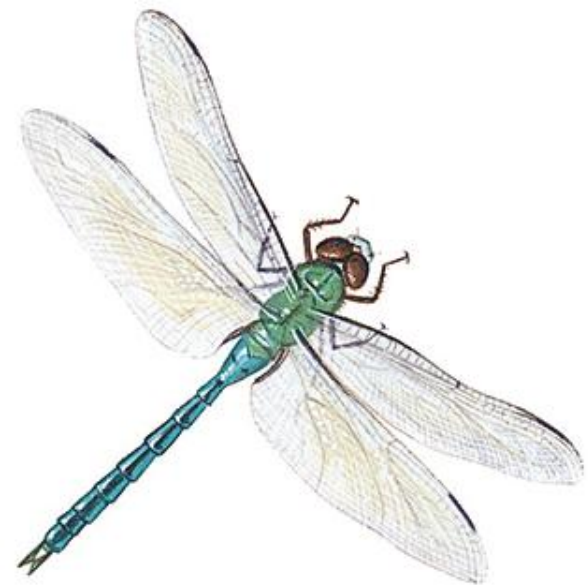
- Numeric - blue circles
- Character - red triangles

3. REGULAR SAS

- Numeric – right justified
- Character – left justified







NOTE: The data set
COPD.MASTER has
14,295 observations
and 23 variables

