

# DATA Step

## How can I stop certain functions setting the length of the result to 200?

In the Language of SAS there are essentially three lengths which character manipulation functions will return:

- 8 bytes
- 200 bytes
- Inherited from the source

Where the system can make a definitive decision of the length of the result at Compile Time it will do so, however there are some oddities - some functions provide additional information, others do not.

Consider the code:

```
data test ;  
  nums = repeat('1234567890', 25) ;  
run ;
```

In this example the system is unable to identify the length, and therefore sets the length of the variable to 200, causing a truncation of the result. No notification is provided. Where a result will be greater than 200, ensure an explicit length is set.

```
data test ;  
  length nums $ 256 ;  
  nums = repeat('1234567890', 25) ;  
run ;
```

Using this variable as a basis consider the following character manipulations:

```
proc sql ;  
  create table trunc as  
  select  trim(nums)                as trim  
         ,strip(nums)              as strip  
         ,right(nums)              as right  
         ,substr(nums,2,20)        as substr  
         ,translate(nums,'~#','50') as translate  
         ,tranwrd(nums,'0','#-#')  as tranwrd  
         ,scan(nums,1,'0')         as scan  
         ,cats(nums,'###')         as cats  
         ,prxchange('s/0/@/',-1,nums) as prxchange  
         ,case when ranuni(0) > 0
```

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```
        then cats(nums, '###')
      end
    from test
  ;
quit;
```

TRIM, STRIP, RIGHT, SUBSTR, and TRANSLATE all inherit their length from the source. (Although the length of the SUBSTR variable might be derived from the third argument, this is optional and is not always present.)

TRANWRD, SCAN, CATS, and PRXCHANGE if not previously set will take a default length of 200. They act differently however: TRANWRD, SCAN and PRXCHANGE still perform the character manipulation, then (potentially) truncate the result. CATS generates a WARNING that the result, "may either be truncated to 200 character(s) or be completely blank".

WARNING: In a call to the CATS function, the buffer allocated for the result was not long enough to contain the concatenation of all the arguments. The correct result would contain 259 characters, but the actual result may either be truncated to 200 character(s) or be completely blank, depending on the calling environment. The following note indicates the left-most argument that caused truncation.

To resolve the issue an explicit length can be set:

```
proc sql ;
  create table no_trunc as
  select  trim(nums)           as trim           length = 280
        ,strip(nums)          as strip          length = 280
        ,right(nums)          as right          length = 280
        ,substr(nums,2,20)     as substr         length = 280
        ,translate(nums,'~#','50') as translate length = 280
        ,tranwrd(nums,'0','#-#') as tranwrd      length = 280
        ,scan(nums,1,'0')      as scan          length = 280
        ,cats(nums,'###')      as cats          length = 280
        ,prxchange('s/0/@/',-1,nums) as prxchange length = 280
        ,case when ranuni(0) > 0
              then cats(nums,'###')
            end
        as case          length = 280
  from test
  ;
```

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```
quit;
```

While this works for most of these scenarios, the WARNING is still generated for the CATS function within the CASE expression.

Looking at the metadata for the dataset the length appears to have been set, but the character manipulation is not performed.

## Alphabetic List of Variables and Attributes

#	Variable	Type	Len
10	case	Char	280
8	cats	Char	280
9	prxchange	Char	280
3	right	Char	280
7	scan	Char	280
2	strip	Char	280
4	substr	Char	280
5	translate	Char	280
6	tranwrd	Char	280
1	trim	Char	280

Care should be taken that the lengths of character variables are correctly set at Compile Time to avoid either incorrect truncation, or indeed excess 'padding' of character variables.

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