

# %xuseq - Sequence Number Generation Utility

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## Overview

The `%xuseq` macro creates sequence numbers for observations within a dataset, typically used in clinical data standards to generate `--SEQ` variables. It assigns sequential numbers based on specified sorting criteria, with options for customizing the sequence variable name prefix.

## Version Information

- **Version:** 1.0
- **Last Updated:** 14JUL2022
- **Author(s):** Atorus Research

## Dependencies

- SAS version: SAS 9.4 V9
- Optional global variable:
  - `domain`: Default prefix for sequence variable if prefix parameter not specified

## Parameters

Parameter	Required	Default	Description
inds	Yes	-	Name of the input dataset
sortvars	Yes	-	Space-separated list of variables to sort by
prefix	No	&domain	Prefix for the sequence variable name
debug	No	N	Whether to retain temporary variables (Y/N)

## Return Values/Output

Modifies input dataset to include:

- New sequence variable named `[prefix]SEQ`
- Sequential numbers starting at 1 for each unique combination of sort variables
- Original dataset structure preserved
- Temporary variables removed unless `debug=Y`

## Processing Details

### 1. Input Validation:

- Verifies required parameters
- Checks prefix resolution:
  - Uses specified prefix if provided
  - Uses `&domain` value if available and prefix not specified

- Errors if neither available

2. Data Processing:

- Sorts dataset by specified variables
- Creates temporary counter variable
- Generates sequence numbers
- Assigns values to final sequence variable

3. Cleanup:

- Removes temporary variables unless in debug mode
- Maintains original dataset structure

# Examples

## Basic Usage with Domain Variable

```
%let domain = AE;  
%xuseq(ae, usubjid);
```

## Custom Prefix

```
%xuseq(  
  inds=adlb,  
  sortvars=usubjid paramcd adt,  
  prefix=a  
);
```

## Debug Mode

```
%xuseq(  
  inds=vs,  
  sortvars=usubjid visitnum,  
  prefix=vs,  
  debug=Y  
);
```

## Common Issues and Solutions

Issue	Solution
Missing prefix	Set domain variable or specify prefix parameter
Sort variable not found	Verify all sort variables exist in dataset

Issue	Solution
Duplicate sequences	Review sort criteria for uniqueness

## Notes and Limitations

- Sequence numbers restart at 1 for each unique USUBJID
- Sort order must include USUBJID
- Prefix must follow naming conventions
- Debug mode retains \_\_tmp\_n variable
- Modifies input dataset in place
- Sort variables determine sequence grouping
- Assumes USUBJID is present in dataset

## See Also

- `%xuvist`: Visit sequence number generation
- `%xuload`: Dataset loading utility
- `%xusave`: Dataset saving utility

## Change Log

Version	Date	Author	Changes
1.0	14JUL2022	Atorus Research	Initial version