



# Macros and Modules in SAS

## Computing Club

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## What we are going to cover today:

- ▶ String and empty matrices
- ▶ IML Modules
- ▶ "Do" loops
- ▶ Macro language and basic macros
- ▶ Macro loops

Macro variables are used to store and manipulate CHARACTER strings

- ▶ Module: a short program (set of statements) usually within Proc IML to help prevent unnecessary repetition of commands
- ▶ Macro: usually larger program using multiple (different) procedures used for looping/repeating

# Covered Commands

## Extended IML commands:

- ▶ Matrices: J(nrow,ncol,value), SHAPE(matrix,nrow,ncol), SHAPECOL(matrix,nrow,ncol)
- ▶ Modules: START name, RETURN(variable), FINISH name, CALL
- ▶ Working with datasets: CREATE, APPEND, USE, READ, CLOSE

## Common SAS macro language commands:

- ▶ DO index-variable = start TO stop [BY increment];  
statement-list  
END;
- ▶ %DO... %END
- ▶ %LET, %PUT, %CALL SYMPUT(macro-variable, value),  
%EVAL(macro function);
- ▶ %MACRO... %MEND