

# Introduction to SAS<sup>1</sup>

The last of the great mainframe stats packages

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<sup>1</sup>This slide show is an open-source document. See last slide for copyright information.

It almost seemed like there was one for every major university

- **DATATEXT**: Harvard
- **SPSS**: University of Chicago
- **BMDP**: University of California at Los Angeles
- **SAS**: University of North Carolina at Chapel Hill
- **OMNITAB**: Pennsylvania State University
- **S**: AT&T Bell labs

# SAS *versus* R

- R is like a motorcycle.
- SAS is like a military Humvee.
- Except it doesn't break down.

# SAS File Types

Not a complete list

- Raw data file
- Program file
- Log file
- Results file
  
- Data Set (Also called Data Table)
- Library

## We work with these files

- **Raw Data File:** A file consisting of rows and columns of numbers; or maybe some of the columns have letters (character data) instead of numbers. The rows represent observations and the columns represent variables. Can be plain text or in a spreadsheet.
- **Program File:** A file consisting of commands that the SAS software tries to follow. You create this file with a text editor. The program file contains a reference to the raw data file, so SAS knows where to find the data. Program files have names like `reading1.sas`.
- **Log File:** This file is produced by every SAS run, whether it is successful or unsuccessful. It contains a listing of the program file, as well any error messages or warnings. It will have a name like `reading1.log` or `reading1-log.html`.
- **Results File:** The list file contains the output of the statistical procedures requested by the program file. Output files have names like `reading1-Results.pdf`, `reading1-Results.rtf`, or `reading1-Results.html`.

## Work flow

We will run SAS online using a web browser.

- Download data file from course website. Edit as needed.
- Upload data file to SAS website.
- Type SAS program into online editor. The program will contain a reference to the data file.
- Run SAS.
- Look at the log file. If there are errors or warnings, fix the program or the data file. You may need to edit the data file on your computer and upload it again.
- Run SAS again, repeating until you are satisfied.
- Download copies of the log file and the results file. Print for the quiz.
- It would be smart to download a copy of your program too, as backup.

# SAS OnDemand

- This is fairly new.
- It seems to be the full version.
- It's free of charge to anybody with a university email address.

<https://welcome.oda.sas.com/>

- Create an account.
- They will send email with your user id. This might take a few hours.
- Go to <https://welcome.oda.sas.com> and log in.
- Specific instructions are available at

[http://www.utstat.toronto.edu/brunner/help/SAS\\_OnDemand.html](http://www.utstat.toronto.edu/brunner/help/SAS_OnDemand.html)  
and elsewhere.

## Important Rule

- You may not use a classmate's SAS OnDemand account to do your work for this course.
- It's too easy to see each other's program code.
- You must have your own account.
- If two people use the same account, they will both get zero for the assignment even if there is no academic offence.



## Copyright Information

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<http://www.utstat.toronto.edu/brunner/oldclass/441s24>