

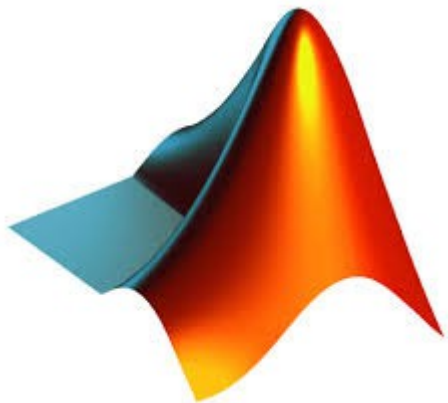
# **Introduction to SAS Programming**

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# Introduction

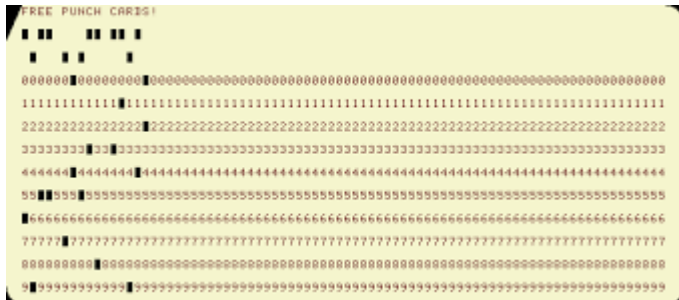
SAS (Statistical Analysis Software) is a *programming language* for doing statistics



Mathematica Version 7 Spikey

# Cons and Pros

- Old
- Closed-source
- Steep learning curve
- Clunky
- Expensive!



- Old
- Closed-source
- Steep learning curve
- Excellent support
- Legal guarantees



# SAS Programs

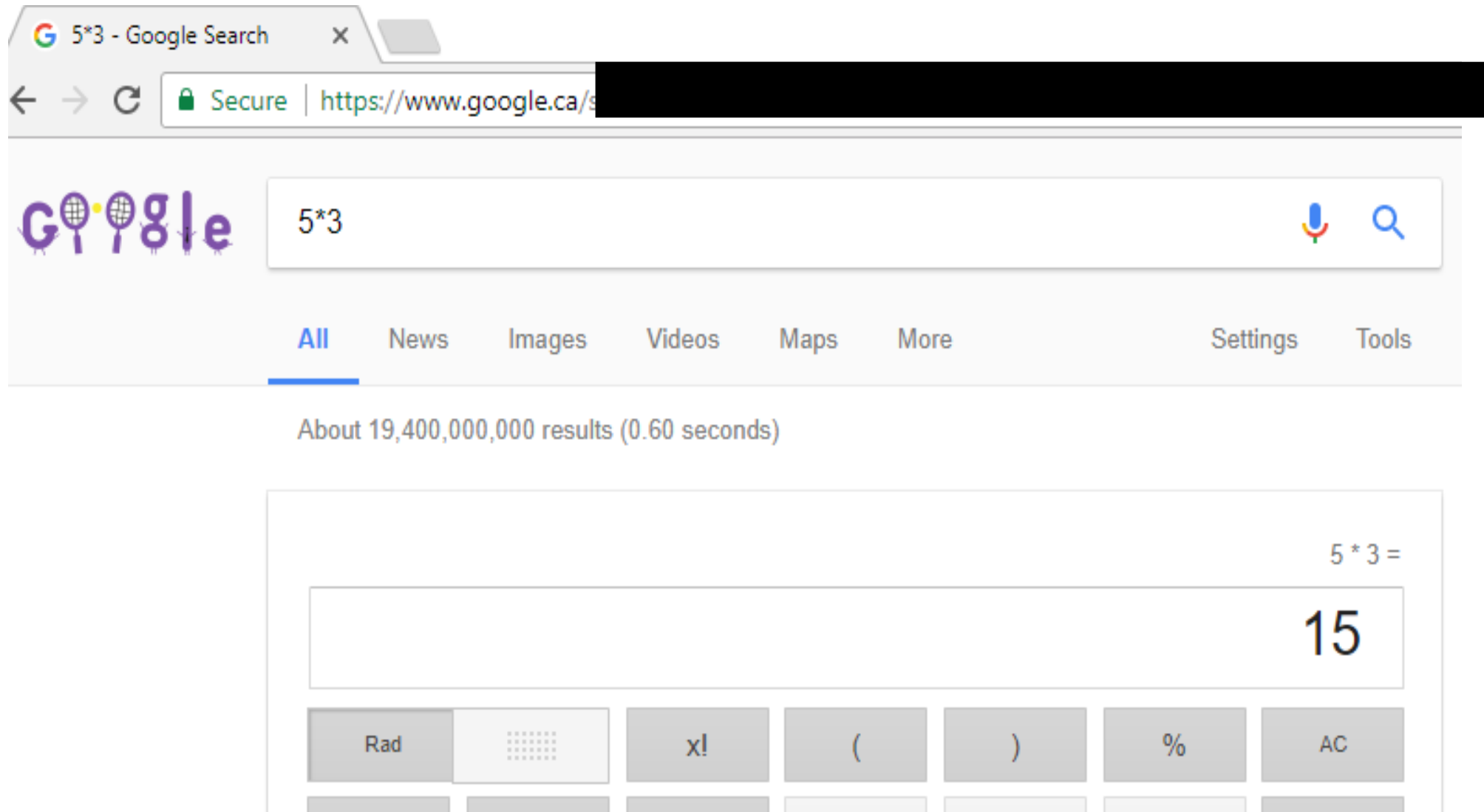
A SAS Program consists of three kinds of things called **steps**

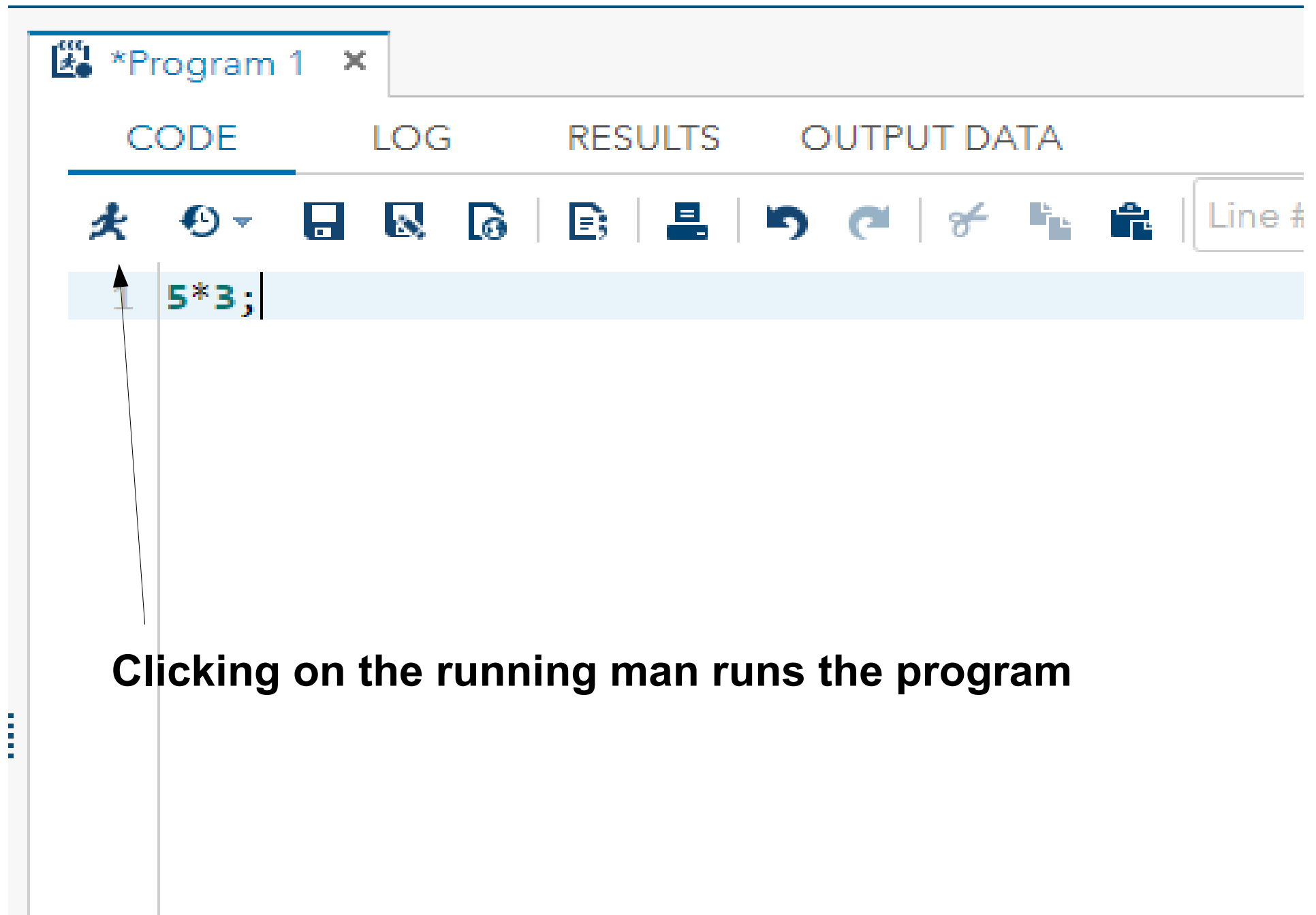
- **Options steps** (set options)
- **Data steps** (read in some data)
- **Proc steps** (do things with the data, including printing the results)

“PROC” is short for “procedure”

|

# You can't do anything in SAS without data!





**Clicking on the running man runs the program**

\*Program 1

CODE

LOG

RESULTS



▼ Errors, Warnings, Notes

▷ ❌ Errors (1)

▷ ⚠️ Warnings

▷ ⓘ Notes

```
1          OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
61
62          5*3;

          -
          180
```

ERROR 180-322: Statement is not valid or it is used out of pr

```
63
64          OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
77
```

 \*Program 1 x

CODE

LOG

RESULTS

OUTPUT DATA



Line 1

1 **data** calculation;

2 **x** = 5\*3;

3 **run**;



\*Program 1

CODE LOG RESULTS OUTPUT DATA

Table: WORK.CALCULATION View: Column names

Columns Total rows: 1 Total columns: 1

|                                     |            |
|-------------------------------------|------------|
| <input checked="" type="checkbox"/> | Select all |
| <input checked="" type="checkbox"/> | 123 x      |

|   |    |
|---|----|
|   | x  |
| 1 | 15 |

| Property | Value |
|----------|-------|
|          |       |

This program doesn't actually output anything, but SAS showed me a LOG file, which shows we have really calculated that 5 times 3 equals 15.

# Conclusion

1. Every SAS program that does something needs a data step. This creates or loads some data for it to work on.
2. Every line of a SAS program needs to end with a semicolon character, like this;