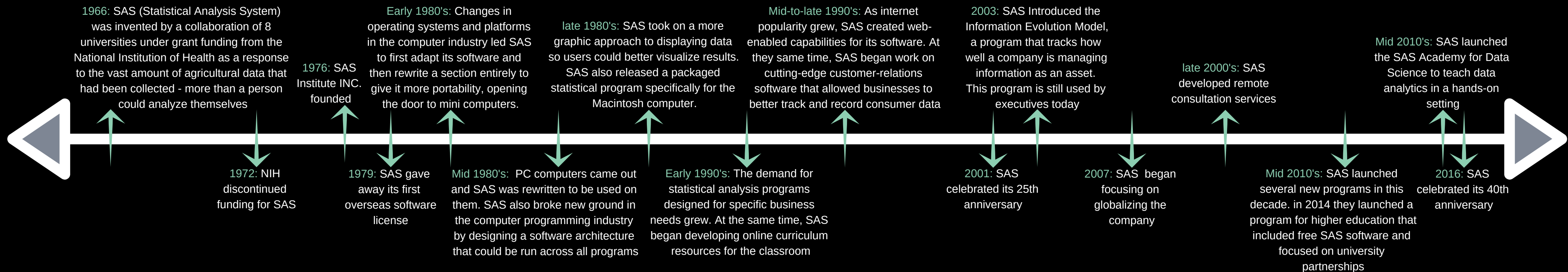# SAS
Computer Programming and the Power of Written Language

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The Invention of Writing
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Timeline

1966: SAS (Statistical Analysis System) was invented by a collaboration of 8 universities under grant funding from the National Institution of Health as a response to the vast amount of agricultural data that had been collected - more than a person could analyze themselves

1972: NIH discontinued funding for SAS

1976: SAS Institute INC. founded

1979: SAS gave away its first overseas software license

Early 1980's: Changes in operating systems and platforms in the computer industry led SAS to first adapt its software and then rewrite a section entirely to give it more portability, opening the door to mini computers.

Mid 1980's: PC computers came out and SAS was rewritten to be used on them. SAS also broke new ground in the computer programming industry by designing a software architecture that could be run across all programs

late 1980's: SAS took on a more graphic approach to displaying data so users could better visualize results. SAS also released a packaged statistical program specifically for the Macintosh computer.

Early 1990's: The demand for statistical analysis programs designed for specific business needs grew. At the same time, SAS began developing online curriculum resources for the classroom

Mid-to-late 1990's: As internet popularity grew, SAS created web-enabled capabilities for its software. At they same time, SAS began work on cutting-edge customer-relations software that allowed businesses to better track and record consumer data

2001: SAS celebrated its 25th anniversary

2003: SAS Introduced the Information Evolution Model, a program that tracks how well a company is managing information as an asset. This program is still used by executives today

2007: SAS began focusing on globalizing the company

late 2000's: SAS developed remote consultation services

Mid 2010's: SAS launched several new programs in this decade. in 2014 they launched a program for higher education that included free SAS software and focused on university partnerships

Mid 2010's: SAS launched the SAS Academy for Data Science to teach data analytics in a hands-on setting

2016: SAS celebrated its 40th anniversary

What is SAS

SAS, (the name of the company and the computer software) was founded in 1966 to solve a particular issue: there was too much data being collected for people to analyze by hand. The founders combined written script and computer technology and created the SAS language and SAS programs. Basically, the language is used to write a code that tells the program to run analyses on datasets, and then tells the programmer the results numerically and through graphs.

Today, SAS is a global company that offers many products (computer programs) depending on the consumer needs. They still offer basic programs to run data, but they also have specialized programs for industries such as consumer data tracking, something many businesses use in order to create personalized customer experiences.

SAS was the first program that allowed individuals to input collected data and write a program and then have the program read and analyze the data for them. Once it became easier to collect and analyze large amounts of information, people found they could record data they hadn't considered recording previously. This, combined with an increasingly technological world, where nearly everything a person does can be recorded, analyzed, and put into a database, resulted in extreme data tracking.

SAS, for instance, has created several kinds of analytical software, including models such as 'SAS Customer Intelligence 360' that are marketed for the purpose of consumer data tracking, creating a database that can be used to guide customer interactions and make personalized decisions. Today, computer storage is cheap, and computers work very quickly. Our daily activities are full of technology and software that can record and report everything we do. Companies collect data on individuals and create a data profile of the person, a "double" full of information the company believes it knows about the person that can be used to target advertisements, offer discounts, predict customer behavior, and discriminate based on past encounters.

Those with the ability to write in and understand computer languages are few in number. This means that those who are able to write in computer languages have power through the authority of skill. Those who do not understand computer programming and use computer technology and social media are constantly affected by algorithms, data tracking, and company interpretation, but do not understand how and often do not understand the extent to which it is happening. Many websites have a privacy policy that forces the user to agree to data tracking before the individual can access the site. Many people, however, do not read the policy and those who do often do not understand the terminology used in the policy.

Data tracking is also used in the case of politics. The government uses data profiles to calculate citizen risk. The government keeps track of people whose data profiles place them in categories of "terrorist" or "foreigner", paying close attention to the web activity of those individuals. Data profiles can also be used to target advertisements and sway citizens to a particular candidate or political party based on psychological profiling.

The first writing systems were invented to solve the issue of too much information – before writing, information only existed if a person could remember it. As societies became more complex, more information was needed in order to rule them. People in power needed to remember trade deals, questions asked of heaven, the history of kings that ruled large populations, etc. Writing was invented to solve this issue. After hundreds of years of writing, people had recorded a lot of information. So much, in some cases, that they could no longer analyze it by hand. Again, this issue found a solution in writing, only of a different kind; computer programming. Now, programs like SAS and other data tracking and analyzing programs allow people of power to create data profiles on individuals, largely without their consent and/or knowledge. Today, the issue we are approaching is one of autonomy and privacy. It is impossible to predict the future, but as of yet, problems regarding information and its retention have been solved with the invention of new writing systems. What humanity will do with the issue of data tracking as a result of computer technology remains to be seen.

Writing in SAS

To use SAS, you write statements in the SAS language to write a series of instructions called a SAS program. The language is written mostly using abbreviated words as well as symbols. There are two different kinds of steps: DATA steps, which begin with the word data and enact on a dataset by making numeric conversions, bringing the sets forward from a file, combining datasets, etc, and PROC sets, which begin with the word proc and run procedures on SAS datasets.

There are many other words and abbreviations used to write a SAS statement. For example, a basic set of PROC statements for a dataset named "practice" that would allow the user to examine the general distribution of the variable "example" would look like:

```
Proc univariate data = practice;
Var example;
run;
```

If the user wanted to see a visual graph of the procedure alongside the numerical results they would insert the SAS word "plot" and create the statement:

```
Proc univariate plot data = practice;
Var example;
Run;
```