1. Statistics: “engineering” mathematics of what is considered “good enough” proof.
   1. “Insight” into data
      1. Used instead of an infinite sample
      2. **MCM Algorithm**: developed in Monte Carlo casino for sampling distributions.
   2. 3 kinds of lies
      1. Innocent/justifiable
      2. Common/unjustifiable
      3. Statistics
         1. Misleading
         2. Misinterpreted statistics
   3. Driving force of computation
2. SAS
   1. History
      1. 1966: developed in NCSU by statisticians for statisticians.
         1. 3 years before C.
      2. Conventions
         1. Pearl PHP symbols
      3. Used by banks, industries, and government
   2. Steps
      1. DATA steps: What is nature of data?
         1. Data entry
            1. infile “input.data”;: names external file.
            2. datalines; or cards;: read from inline data written manually or in cards.
         2. Reorganize data
         3. Display data
      2. PROCEDURE steps: What is inferential statistical model?
      3. OUTPUT steps: How do we present the data?
   3. Other tools
      1. R
      2. SPSS
      3. C/C++
      4. Python
   4. Code examples
      1. Data skeleton

procedure DATA STEP SKELETON

data newdata;

set mydata;

–more statements-

run;

end procedure;

* + 1. Print out *N*, *M*, Std. Dev, Min. and Max

proc MEANS DATA = TEMP;