* **Nominal:** categories, states, or “names of things”
  + *Hair color =* {*auburn, black, blond, brown, grey, red, white*}
  + marital status, occupation, ID numbers, zip codes
* **Binary**
  + Nominal attribute with only 2 states (0 and 1)
  + Symmetric binary: both outcomes equally important
    - e.g., gender
  + Asymmetric binary: outcomes not equally important.
    - e.g., medical test (positive vs. negative)
    - Convention: assign 1 to most important outcome (e.g., HIV positive)
* **Ordinal**
  + meaningful order (ranking)
  + *Size =* {*small, medium, large*}*,* grades, army rankings
* **Quantity** (integer or real-valued)
* **Interval**
  + - Measured on a scale of **equal-sized units**
    - Values have order
      * E.g., *temperature in C˚or F˚, calendar dates*
    - No true zero-point
* **Ratio**
  + - Inherent **zero-point**
    - We can speak of values as being an order of magnitude larger than the unit of measurement (10 K˚ is twice as high as 5 K˚).
      * e.g., *temperature in Kelvin, length, counts, monetary quantities*
* **Discrete Attribute**
  + Has only a finite or countably infinite set of values
    - E.g., zip codes, profession, or the set of words in a collection of documents
  + Sometimes, represented as integer variables
  + Note: Binary attributes are a special case of discrete attributes
* **Continuous Attribute**
  + Has real numbers as attribute values(floating-point variables)
    - E.g., temperature, height, or weight