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1.8.1

1. Identify whether each of the following is a constant or a variable:
 - a) Party identification of delegates at a political convention:
Variable because this can change over time and across different conventions. Also, individuals may switch their party affiliation or be selected as delegates from different parties.
 - b) War participation of the Great Powers.
It could be both:
Constant: if we speak about a specific historical period where the Great Powers' participation in wars remains relatively stable and if the Great Powers we are talking about are the same.

Variable if we have information of different and more broad historical periods where the composition of Great Powers or their involvement in wars changes, so that from one period to another there are different "Great Powers"
 - c) Voting record of members of Congress relative to the stated position of the president.
Variable. Members of Congress can vary their voting from one issue to another and more importantly from one legislative session to another, depending on many variables such as political climate, electoral momentum, or evolving policy positions.
 - d) Revolutions in France, Russia, China, Iran, and Nicaragua.
Constant. As these revolutions took place in history, then are not subject to change. They took place at specific times.
 - e) An individual voter's vote choice in the 1992 presidential election.
Constant. The vote of a person in any election that already took place, like the one in 1992, is fixed and cannot be changed because it only happened in one single time (1992)
 - f) An individual voter's vote choice in the 1960-1992 presidential elections.
Variable. In contrast with the previous one, here we have a range of votes throughout different years. An individual voter's vote choice can change from one election to another within this time frame.
 - g) Vote choice in the 1992 presidential election.
Constant. As in "e" but in a more aggregated way, the vote choice in the 1992 presidential election (the result for that year) is fixed and cannot be changed since the election has already taken place.
2. Identify whether each of the following is a variable or a value of a variable.
 - a) The Tonkin Gulf Crisis:

Value of a variable. It has is a specific historical event or incident that occurred at a particular time.
 - b) Party identification:
Variable: Political affiliation or allegiance of individuals can vary from person to person.
 - c) Middle income:
Value of a variable. "Middle income" is a category or range of income levels. Therefore, it represents one of the possible values within the variable of income.
 - d) Exports as a percentage of GDP:

Variable. Exports as a percentage of GDP can vary either by country or by time period.

- e) Republican:
Value of a variable. "Republican" refers to a specific political party or ideology, and it is one of the possible values within the variable of political affiliation.
 - f) Female:
Value of a variable. "Female" refers to a specific gender, and it is one of the possible values within the variable of gender.
 - g) Veto
Value of a variable. It refers to a specific action or decision made within a voting process of a political body. Therefore, it is one of the possible outcomes within the variable of decision-making.
 - h) Ethnic fractionalization:
Variable. Ethnic fractionalization refers to degrees of ethnic heterogeneity within a population, and it can vary from one region or country to another.
 - i) International crisis:
Variable. An international crisis can vary according to a varied context, depending on factors like scale (for instance how many countries are part of such event) and time.
3. Identify whether each of the following indicators is measured at a nominal, ordinal, interval, or ratio level. Note also whether each is a discrete or a continuous measure:
- a) Highest level of education as (1) some high school, (2) high school graduate, (3) some college, (4) college graduate, (5) postgraduate.

Ordinal because it expresses an order between categories, and discrete because categories are distinct and not in a continuous scale.
 - b) Annual income.
Ratio and continuous: Annual income can reach the point of "no income" (equal to zero) and different by column annual income values can also be divided.
Continuous, because it can take any value within a continuous range, including decimal values.
 - c) State welfare expenditures, measured in millions of dollars.
Ratio and continuous because state welfare expenditures can reach zero point (no expenditure) and it can take any value within a continuous range, including decimal values.
 - d) Vote choice among Bush, Clinton, and Perot.
Nominal because there is not an inherent order in choosing any of those candidates.
And it is discrete because voters choose one candidate from a set list. They cannot choose a fraction of a candidate.
 - e) Absence or presence of a militarized interstate dispute.
Nominal, this is a binary classification with no inherent order or ranking. It is also discrete because it has only two categories: absence or presence.
 - f) Military personnel, measured in 1,000s of persons.
Interval, because the military personnel is organized in intervals of 1,000 persons, so the differences between the number of military personnel at different points in time or between different groups can be mathematically operated using such intervals. Also, it is Continuous because the number of personnel can take any non-negative real value, including decimal values.

g) The number of wars in which countries have participated.

The number of wars is measured at an ordinal level because it represents categories of discrete events (wars). and while it has a zero point ('no wars'), countries can be ranked by the number of wars.