Problem Statement

I will be investigating the energy access, energy production and energy footprint of developing countries in the last 30 years given the World Development Indicators dataset. I am particularly interested to see how developing nations are performing compared to developed nations and rank countries based on the parameters mentioned above.

1) What percentage of the population has access to electricity?
   Firstly, draw the charts to show the percentage of urban and rural population with access to electricity over years(with respect to time) and compare it with the charts of developed nations.

Equally important in understanding the country's energy use is to know where our energy is being sourced from. This section will look into the different sources of energy—fossil fuels (coal, natural gas, petroleum), hydroelectric, and renewable in order to gain insight to where most of our electricity is coming from

Moreover, a comparison with the top-performers in developed countries (in terms of providing electricity access) will be done in order to assess where the huge bulk of the electricity that they are sourcing effectively to the population—is coming from.

Lastly, it is also important to investigate the country's adoption to renewable energy, and compare this with our SEA neighbors. This can help identify trends, especially that using fossil fuels contributes much to our carbon footprint—given the devastating results of global warming and climate change.

2) What constitutes the energy mix of the countries?
   Plot charts for energy production of developing countries using non-renewable energy sources, using renewable energy sources and as a whole. They are plots with percentage of renewable or non-renewable energy constitution over the years (with respect to time).

With the knowledge of the country's energy sources, the next step is to understand how we consume that energy. This section will first look into the country's electric power consumption over time, then look at our consumption footprint—particularly that of carbon emissions and other greenhouse gases.

3) How are we consuming our energy?
   Plot the charts of carbon footprint ie, CO2 emission levels from renewable and non-renewable energy sources over the years (with respect to time).

Considering different parameters that would indicate how good the country is doing in terms of energy consumption or production, will do a clustering algorithm to cluster the countries into two clusters, Cluster1: countries with high developed energy industry and cluster2: countries with low developed energy industry.

From the above indicators and also the clusters obtained, it will give us a pattern which the underdeveloped countries are following in the last 30 years when compared to the developed countries. Linear regression algorithm may also be performed to predict the rise and fall of the energy production, consumption or access levels of the countries in the future.