Project Plan

Structure:

* Research Phase 1
* Research Phase 2
* Code

1: Research Phase 1:

* Research for sustainability fair, Roosevelt High School.

2: Introduction:

* Basic introduction to carbon footprints.

2: Greenhouse Gases:

* Radiative Forcing
* Global Warming Potential (GWP)
* Carbon Dioxide Equivalent (CO2e)

2: “How Bad are Bananas”:

* Read and take notes.
* Short report summarizing contents.
* Database of the carbon footprints of various items and processes in a Jupyter notebook.

2: Measuring Methodology:

* Research on current prominent methods that attempt to measure the carbon footprints.
* Identify flaws of methods researched on.
* Write a report summarizing and concluding research.

2: City Analysis:

* Identify and Assess the main causes of carbon footprints in prominent regions such as cities.

2: Conclusion:

* Write a conclusion summarizing the project.

1: Research Phase 2:

* Research needed for creating program to calculate carbon footprint of a city.

2: Process Analysis:

3: Standards for Carbon Footprint Calculation of Cities:

* Find out about the biggest standards used by city officials to measure the carbon footprint of cities.
* Write a report summarizing these methods.

3: GCP:

* Study the *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories* in detail.
* Write a report summarizing in detail the extensive procedure of the GCP.

2: Economic Input-Output:

3: Underlying Methodology:

* Understand the mathematical details behind the methodology of the input-output method.
* Write a report explaining the findings.

3: Process Used to Calculate Carbon Footprints:

* Find out complete process which the economic input-output method is used to calculate the carbon footprints of specific items or processes.
* Narrow down the process and find out how the economic input-output method can be used to calculate the carbon footprint of a city.
* Write a paper detailing the process which the economic input-output method is used to calculate the carbon footprints of various items and processes and more specifically, cities.

2: Other Carbon Calculators:

* Study different available carbon calculators on the internet and also try to find out whether this project has already been completed.
* Write a paper summarizing findings.

1: Code:

2: Carbon Footprint Database:

* Create a small database that prints and graphs the carbon footprint and carbon path of several items. (Ideally, the database would be able to search for the input data online.)

2: Carbon Footprint of a City:

* Create a program that calculates the carbon footprint of a city using both the process analysis and input-output approach.
* Include code both in a Jupyter Notebook and typical Python script.

3: Process Analysis:

* Structure code based on the GCP

3: Economic Input-Output:

* Using the economic data of a city, calculate its carbon footprint using the mathematics behind the economic input-output method.