# **PROJECT 1 – GROUP 6**

## **project proposal.**

### What is your data set, why did you choose it?

* Data set: Vehicle Emissions Data Set[[1]](#footnote-2).
* Reasons: Selecting the Vehicle Emissions Data Set for your project enables you to tackle significant environmental challenges, utilize comprehensive and varied data, employ interdisciplinary research methodologies, and generate practical outcomes. Furthermore, it offers a thorough educational experience and aligns with contemporary trends in sustainability and environmental conservation. This amalgamation of factors renders it an exemplary choice for a substantial and influential project.

### Inspiration

* <https://www.kaggle.com/code/raman209/vehicle-co2-emissions-prediction>
* <https://www.kaggle.com/code/drfrank/co2-emission-eda-visualization-machine-learnin>
* <https://www.kaggle.com/code/karankrishna/india-air-quality-analysis>
* <https://www.kaggle.com/code/ashikchandradas/co2-emission-regression-analysis-and-visualization>

### Possible Research Questions

|  |  |
| --- | --- |
| *Null Hypothesis* | Bigger engine size has no correlation to vehicle emissions |
| *Alternative Hypothesis* | Bigger engine size does affect the vehicle emissions. |

### Question 1.

What is the effect of fuel type on CO2 emissions (g/km)?

### Question 2

What is the effect of vehicle power (PS) on CO2 emissions (g/km)?

### Question 3.

Are CO2 emissions different depending on the type of vehicle transmission?

### Possible Visualizations

* 1. Scatter
  2. Violin plot
  3. Box plot
  4. Bar
  5. Histogram
  6. Linear regression (Linregress): Engine size vs vehicle emissions

### Color Theme

#### **Color Palette**



### Roles & Responsibilities

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Responsible | | When | What | Link to dataset | | | Why we choose this dataset? |
| **Prework** | | | | | | | |
| Everyone | | May-29 | prework about what and why is our dataset | <https://www.kaggle.com/datasets/reubenowenwilliams/vehicle-emissions-dataset> | | | We chose this dataset because we all drive cars and are concerned about pollution. |
| **Work** | | | | | | | |
| Everyone | | June -3 | Clean Dataset | | | | |
| Null Hypothesis | | Bigger engine size has no correlation to vehicle emissions | | | | | |
| Alternative Hypothesis | | Bigger engine size does affect the vehicle emissions | | | | | |
| Genie | | Question 1 | Fuel vs emission  Bar  scatter | | | | |
| Gunel | | Question 2 | power vs emission  scatter  bar | | | | |
| Isbelis | | Question 3 | Transmission type vs emission  Box plot or violin  Scatter  Mann-Whitney U test | | | | |
| William | | Linear regression | Engine size vs vehicle emissions  Linregress  histogram | | | | |
| Presentation & slides | | | | | | | |
| Responsible | When | | | | |  | |
| Isbelis | | May -31 | | | Proposal structure (power point and canva) | | |
| Everyone (according to assignment) | | Jun 7 | | | Work on presentation add information necessary according to responsibilities. | | |
| everyone | | Jun 10 | | | Review presentation and update comments and observations final | | |
| Writeup | |  | | |  | | |
| Name (1 person) | | Jun 8 | | | Proposal structure | | |
| Everyone | | Jun 15th | | | Work on writeup according to responsibilities. | | |
| Everyone | | Jun 17th | | | Review of writeup and update comments and observations final | | |
| Proposal | | **May-30** | | |  | | |
| Isbelis | | May 31 | | | Proposal structure | | |
| Everyone | | May 31 | | | Review and add or delete information according to instructions. | | |
| ReadMe/Executive Summary | |  | | |  | | |
| (name) 1 person | | xxxxx | | | Structure and lead. | | |
| Everyone | | xxxx | | | Review and give contribution depend on our opinion and instructions. | | |
| Github File/Folder Organization | | xxxx | | |  | | |
| (name) 1 person | | xxxx | | | Lead folders and files. | | |
| Everyone | | xxxx | | | Add according to instructions and group decision. Before deleting any file, inform the group. | | |

1. https://www.kaggle.com/datasets/reubenowenwilliams/vehicle-emissions-dataset [↑](#footnote-ref-2)