Introduction

The project is intended to gather information about the quantity of precious metal wastage and the cost without proper e-wastage processing. I want to look into the profitability of the e-waste business. I'm also interested in which manufacturers use the most precious metals. I need to look into which category of devices (like fridges, laptops, etc) require more precious metals and have the lowest recycling scores.

Introduce the data

After reviewing several available data sets in Kaggle, I found this dataset to be interesting, and I wanted to learn more about the topic. This data provides the quantity of various precious metals extracted from all types of electronic devices. These electronic devices are split into categories with average amounts of precious metals. Some of the features in this dataset are the different precious metals: gold, aluminum, carbon, device age, device condition, device type, year of manufacture, market value, etc.

Preprocessing and Data Cleaning

Steps:
First, I have to import libraries- import pandas libraries
Import the data- import the downloaded CSV file for preprocessing
Check for missing values- remove the bad records
Check for incorrectly formatted data and duplicates
Arrange the data in a meaningful way for analysis and visualization

Storytelling

I was able to answer some of my questions. The data quality is really good: I couldn't find any missing values, duplicate records, etc. The data is formatted in a manner that is easy to understand. I could load the data, apply quality checks quickly, and analyze and visualize it. Some of the observations I've made are:

The brand with the highest amount of precious metals in their products is Panasonic.
Aluminum is the most used metal across all the brands (250,163 g). In comparison, rhodium is the least used metal (5044 g).

The total market value of all the metals in the recycling process is approximately $4.5 million.
The total cost of recovery is $275,653.10.

Impact

How it helps: This analysis helps us understand the recovery cost vs the total cost of the precious metals being used. It helps decide how beneficial it is to increase the amount of e-waste

processing. If the data is viewed differently, it could encourage consumers to discard their e-waste properly.

References:
https://www.kaggle.com/datasets/abhaynb/precious-metal-content-in-e-waste?select=updated_e_waste_dataset.csv