Problem Statement

There are numerous objects and asteroids in the vastness of space, some of which are closer to Earth than we may think. Even while 70,000 km may not seem like much in our day-to-day lives, on an astronomical scale, it is a modest distance that has the ability to interfere with a number of natural occurrences. Some of these heavenly bodies, particularly asteroids, might be dangerous to Earth. It is crucial to locate and catalog these near-Earth objects (NEOs) that have been confirmed by NASA as being in close proximity to our planet in order to protect our security and get a better knowledge of our cosmic surroundings.

We are better able to evaluate the hazards these NEOs may pose and create mitigation plans for any possible harm they could cause by locating and tracking them. Using this dataset, we can better understand the celestial bodies surrounding Earth and can make informed decisions to safeguard our planet from the potential cosmic threats we may face by these NROs.

Source of Dataset

NASA - Nearest Earth Objects:

https://www.kaggle.com/datasets/sameepvani/nasa-nearest-earth-objects

Description

This dataset provides information about asteroids, including their characteristics and potential risks. The dataset contains information about asteroids, each uniquely identified by an "id" and named by NASA. There are 90,836 records in this dataset by NASA. Each record holds information about a different NRO. The dataset has a total of 10 columns. It includes various attributes for each asteroid

Attributes

1. id:
   - Data Type: Numeric
   - Description: A unique identifier assigned to each asteroid in the dataset.

2. name:
   - Data Type: Text
   - Description: The name given to each asteroid by NASA, which may include alphanumeric characters and other symbols.

3. est_diameter_min:
   - Data Type: Numeric (Decimal)
   - Description: The minimum estimated diameter of the asteroid in kilometers. This represents the smallest size estimate for each asteroid.

4. est_diameter_max:
   - Data Type: Numeric (Decimal)
   - Description: The maximum estimated diameter of the asteroid in kilometers. This represents the largest size estimate for each asteroid.

5. relative_velocity:
   - Data Type: Numeric (Speed)
   - Description: The relative velocity of the asteroid in comparison to Earth. This may indicate how fast the asteroid is moving concerning our planet.

6. miss_distance:
   - Data Type: Numeric (Distance)
   - Description: The closest distance at which the asteroid passed by Earth, measured in kilometers. This column provides information about how close the asteroid came to Earth.

7. orbiting_body:
   - Data Type: Text
   - Description: The name of the planet that the asteroid orbits. This column provides information about the celestial body around which the asteroid revolves. In this particular dataset, Earth was the orbiting body.

8. sentry_object:
   - Data Type: Boolean (True/False)

- Description: A binary feature indicating whether the asteroid is included in the Sentry system, which is an automated collision monitoring system. True may mean that the asteroid is monitored, while False may indicate it's not.

9. absolute_magnitude:
   - Data Type: Numeric
   - Description: A measure of the intrinsic luminosity of the asteroid. This value provides information about how bright the asteroid appears from Earth and can also give insights into its size and reflectivity.

10. hazardous:
    - Data Type: Boolean (True/False)
    - Description: A binary feature indicating whether the asteroid is classified as hazardous. True may indicate that the asteroid is potentially harmful or dangerous in terms of its potential impact on Earth, while False may indicate it's not considered a significant threat.