Progress Report – Week 1

# Work Completed

This week, the focus was on generating a synthetic dataset for tracking devices like Apple AirTags and Jio Tags. The dataset was created with details on sales, total users, total revenue, and profit across various countries and states. Key tasks included:

1. Defining product details including price, value for money, and best-in-tech features.  
2. Generating synthetic data with realistic calculations for sales, total users, revenue, and profit.  
3. Implementing a more accurate method for estimating total users based on a user conversion rate rather than a simple multiplier.  
4. Successfully created a dataset with over 629 records, ensuring diversity across different regions.

# Challenges Faced

One of the primary challenges faced during the week was determining a realistic method for estimating the number of users from sales figures. The initial approach of using a random multiplier did not reflect a real-world scenario. After researching potential methods, a user conversion rate based on a percentage of sales was implemented, which provided a more accurate and realistic estimation.  
Additionally, there was a challenge in handling deprecated methods in the code, which required adjustments to the approach.

# Plans for the Upcoming Week

For the upcoming week, the focus will shift towards analyzing the synthetic dataset through data visualization and predictive modeling.

Key tasks will include:  
1. Preparing various visualization charts to explore patterns and insights within the dataset.  
2. Utilizing available machine learning models to predict the percentage of success if the same product was made using raw materials from India at a cheaper price.  
3. Predicting the accuracy of the model on the dataset to assess its reliability.  
These tasks will help in understanding the potential market impact and success of the product if manufactured under different conditions.