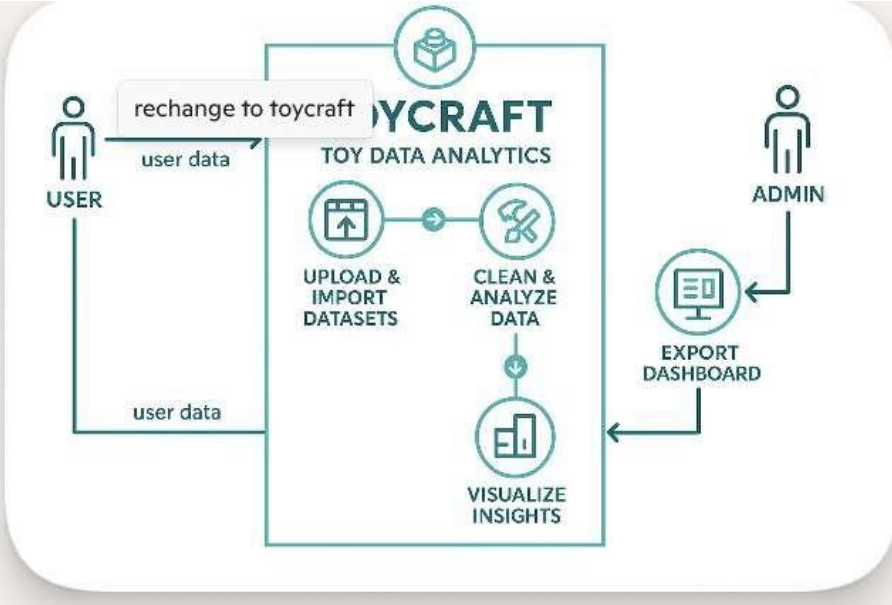
Project Design Phase-II
Technology Stack (Architecture & Stack)

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table2



Guidelines:

- Include all the processes (As an application logic / Technology Block)
- Provide infrastructural demarcation (Local / Cloud)
- Indicate external interfaces (third party API's etc.)
- Indicate Data Storage components / services Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Interface to visualize Toy data insights (dashboards, graphs)	Tableau Public, HTML, CSS
2.	Data Preparation Logic	Scripts used to clean, filter, and prepare data for analysis	Python (Pandas, NumPy)
3.	Data Analysis Logic	Logic to compute KPIs and summaries (e.g., avg speed, efficiency)	Tableau Calculated Fields, Excel
4.	Data Source	Datasets used for Toy analysis .	CSV Files, Excel Sheets
5.	Database (optional)	Store dataset backups or Tableau extracts.	MySQL / SQLite (optional)
6.	Cloud Storage (optional)	Local storage for dashboards, data files, screenshots	Google Drive, IBM Cloud Object Storage
7.	File Storage	Local storage for dashboards, data files, screenshots	Local Filesystem
8.	External API-1	Weather data for charging decision insights (optional)	OpenWeatherMap API / IBM Weather API
9.	External API-2	EV Station Location / Map data (optional)	Google Maps API / NREL API
10.	Infrastructure	Platform used for development and visualization	Local System, Tableau Public Cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frameworks and tools used for data cleaning and visualization	Python (Pandas, NumPy), Tableau Public, Jupyter Notebook
2.	Security Implementations	Dataset stored and shared securely; minimal exposure to sensitive data	File-level protection, Google Drive Access Control, No login data used
3.	Scalable Architecture	Project can scale by integrating more datasets, APIs, or deploying via cloud BI tools	Tableau Public (scalable dashboard), Cloud-based deployment (optional)
4.	Availability	Tableau Public Cloud,Google Drive download offline	Tableau Public Cloud, Google Drive, Local System
5.	Performance	Lightweight dashboards with optimized data sources; performs well on local/cloud	CSV Optimization, Filtered Data in Tableau, Extract Mode