**Project Design Phase-II**
**Data Flow Diagram & User Stories**

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| Date | 22 November 2023 |
| Team ID | PNT2022TMID-592056 |
| Project Name | Project - Machine Learning Approach For Predictng The Rainfall |
| Maximum Marks | 4 Marks |

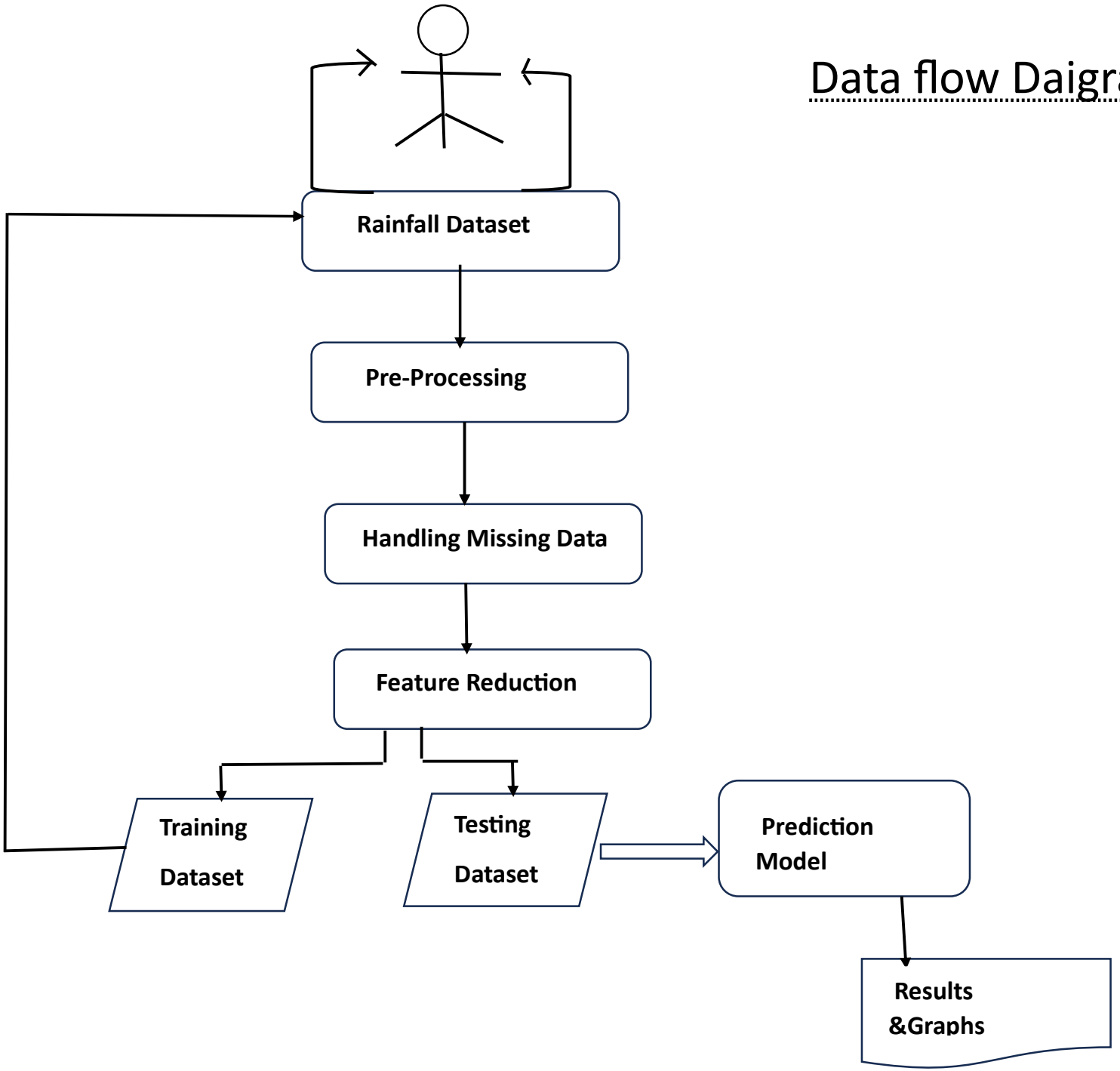
**Data Flow Diagrams:**

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

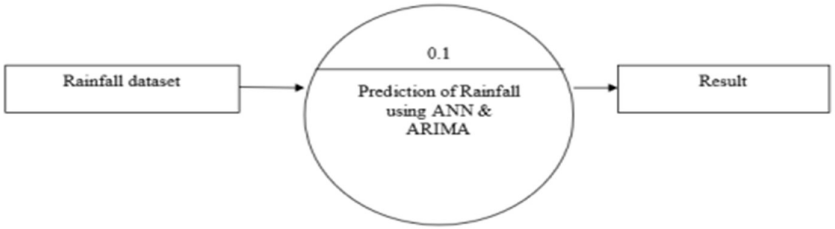
**Machine learning Approach for Predicting Rainfall :**

The data flow diagram for the Dynamic Rainfall Prediction System depicts the journey of meteorological data from diverse sources. It begins with the ingestion layer, where real-time satellite data, local weather stations, and additional databases are processed. The information then undergoes preprocessing, real-time integration, and machine learning modeling before being presented to users through the user-friendly mobile application. Continuous improvement mechanisms, explainable AI, and community weather stations contribute to the system's adaptability and accuracy, creating a comprehensive flow that enhances the prediction of rainfall patterns.

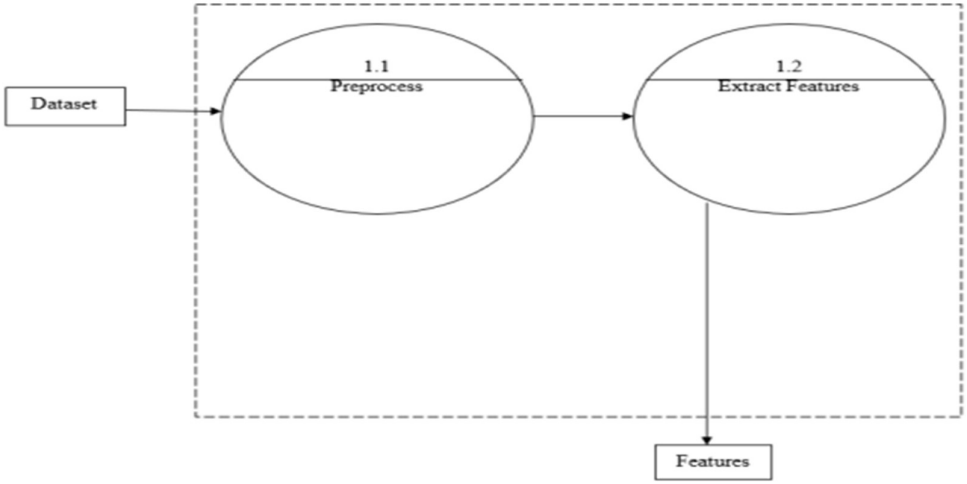
# Data flow Daigram



**Level 0 :**




**Level 1 :**



**User Stories**

Use the below template to list all the user stories for the product.

| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance criteria | Priority | Release |
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| **Farmer** | Accessible Forecasting | USN-1 | As a farmer, I want to receive accurate and timely rainfall forecasts through a user-friendly mobile application. | The mobile app should provide daily rainfall predictions, display information in a visually intuitive manner, and allow users to set personalized notifications. | High | Data Licensing Feature Version 1.0 |
| **Agricultural Organization** | Data Integration | USN-2 | As an agricultural organization, I want to integrate the Dynamic Rainfall Prediction System into our existing platform to enhance our decision-making processes. | The system should provide API access, support seamless data integration, and offer customizable analytics for our specific needs. | Low | Community Engagement Feature Version 1.0 |
| **Government Agency** | Early Warning System | USN-3 | As a government agency, I want to receive real-time alerts and early warnings for potential weather-related disasters. | The system should send immediate alerts for extreme weather events, integrate risk assessment algorithms, and enable quick response coordination. | High | Early Warning Module Version 1.0 |

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| **Researcher** | Data Licensing | USN-4 | As a researcher, I want access to the high-resolution meteorological data generated by the system for climate studies. | The system should provide a licensing mechanism for researchers, ensuring data integrity and adherence to privacy standards. | Medium | Data Licensing Feature Version 1.0 |
| **Community Member** | Community Engagement | USN-5 | As a community member, I want to actively participate in weather data collection and engage with educational resources. | The system should offer an online platform with educational content, workshops, and a feedback mechanism, fostering community collaboration. | Low | Community Engagement Feature Version 1.0 |
| **System Administrator** | Security and Compliance | USN-6 | As a system administrator, I want to ensure robust security measures and compliance with privacy regulations. | The system should implement encryption, access controls, and regular compliance audits to safeguard user data. | High | Security Update Version 1.1 |
| **Mobile App Developer** | API Documentation | USN-7 | As a mobile app developer, I want comprehensive and well-documented APIs for seamless integration with the Dynamic Rainfall Prediction System. | The system should provide clear and accessible API documentation, including endpoints, data formats, and authentication methods. | Medium | API Documentation Update Version 1.0 |
| **Climate Research Institution** | Research Collaboration | USN-8 | As a climate research institution, I want to collaborate with the system | The system should establish a collaboration | Medium | Research Collaboration |

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| | | | developers to enhance climate models and contribute to ongoing research. | framework, including data-sharing agreements and periodic research workshops. | | Feature Version 1.0 |