Ideation Phase
Brainstorm & Idea Prioritization Template

Date	28 January 2026
Team ID	LTVIP2026TMIDS56565
Project Name	Rising Waters: A Machine Learning Approach to Flood Prediction
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Step-1: Team Gathering, Collaboration and Select the Problem Statement

Team Discussion Summary

Our team conducted a collaborative brainstorming session to identify real-world problems that can be solved using Data Science and Machine Learning. We discussed several domains including healthcare, agriculture, traffic management, and disaster prediction.

After evaluating the social impact, feasibility, and availability of datasets, we selected flood prediction as our problem domain.

Identified Problems

- Inaccurate flood warning systems
- Heavy dependence on manual monitoring
- Delayed disaster alerts
- Lack of intelligent data-driven prediction models
- Insufficient integration of ML in disaster management

Selected Problem Statement

“To design and develop a Machine Learning-based Flood Risk Prediction System that can analyze environmental and hydrological parameters to classify flood risk accurately.”

Reason for Selecting This Problem

- Floods cause major damage to life and property
- Early prediction can reduce disaster impact
- Suitable datasets available (Kaggle)
- Strong relevance to Machine Learning
- High social and practical value

Step-2: Brainstorm, Idea Listing and Grouping

Generated Ideas

During brainstorming, the team proposed the following ideas:

1. Flood prediction using rainfall data
2. River water level monitoring system
3. Disaster alert mobile app
4. ML-based flood risk classification
5. Weather forecasting dashboard
6. IoT-based flood detection
7. Flood risk visualization using GIS
8. ML web app for flood prediction

Idea Grouping

Category 1 – Data-Driven ML Solutions

- ML-based flood risk classification
- Flood prediction using rainfall & discharge
- Weather analysis dashboard

Category 2 – Hardware / IoT Solutions

- IoT-based flood detection
- River water level sensors

Category 3 – Application Solutions

- Disaster alert mobile app
- ML web app

Discussion Outcome

The team decided to focus on a Machine Learning-based solution due to:

- Better alignment with Data Science specialization
- Feasibility within project timeline
- No hardware dependency
- Strong academic relevance

Step-3: Idea Prioritization

Evaluation Criteria

Ideas were prioritized based on:

- Innovation
- Feasibility
- Dataset availability
- Technical complexity
- Real-world usefulness