Planning phase

Date	21-November-2023
Team ID	Team-592288
Project Name:	Weather Classification using Deep Web
Maximum Marks	8

Product Backlog:

User Story Number	User Story / Task	Story Points	Priority	Team Members
USN-1	Collect Weather Dataset	3	High	Data Engineer, ML Engineer
USN-2	Pre-process Weather Data	2	Medium	Data Engineer
USN-3	Select Deep Learning Model (e.g., VGG19)	2	High	ML Engineer
USN-4	Design Model Architecture	3	High	ML Engineer
USN-5	Train Deep Learning Model	4	High	ML Engineer
USN-6	Evaluate Model Performance	3	High	ML Engineer
USN-7	Develop User Interface for Classification	3	Medium	UI/UX Engineer
USN-8	Integrate Real-time Weather Data	2	Medium	Data Engineer, ML Engineer
USN-9	Documentation and Reporting	2	Low	Technical Writer

Sprint Schedule:

Sprint	Phase	Tasks	Start Date	End Date
1.	Project Initiation Phase	Define Project Goals and Objectives	August 1, 2023	August 7, 2023
		Assessment of Scope and Requirements		
		Identify Key Stakeholders and Expectations		
2.	Data Collection and Preparation	Data Collection	August 8, 2023	August 29, 2023
		Model-specific Data Requirements		
		Ethical Considerations		
3.	Team Formation and Resource Allocation	Assemble the Project Team and Assign Responsibilities	August 30, 2023	September 6, 2023
		Identify Necessary Resources, Including Hardware, Software, and External Tools/APIs		
4.	Task Breakdown and Timeline Planning	Task Breakdown	September 7, 2023	September 13, 2023
		Detailed Timeline		
		Set Milestones		
5.	Model Selection and Architecture Design	Research and Model Selection	September 14, 2023	September 28, 2023
		Architecture Design		
6.	Data Pre-processing Plan	Data Pre-processing Steps	September 29, 2023	October 6, 2023
		Address Potential Challenges		
7.	Training and Evaluation Strategy	Dataset Splitting and Training Strategy	October 7, 2023	October 21, 2023
		Hyperparameter Tuning and Model Training		
		Evaluation Metrics and Criteria		
8.	User Interface Design and Real-time Integration	UI Design	October 22, 2023	November 5, 2023
		Real-time Integration		
		Features and Functionalities		
9.	Documentation and Reporting Structure	Code Documentation	November 6, 2023	November 13, 2023
		Project Report		
		Metrics and KPIs		
10.	Testing and Deployment Plan	Testing Strategy	November 14, 2023	November 28, 2023
		Deployment Plan		
		Configuration Considerations		
11.	Continuous Improvement and Iteration	Regular Reviews and Iterations	November 29, 2023	Ongoing

Velocity:

Total story points: 24

Number of sprints: 11

Average velocity (AV) = 24/11 = 2.182

Table-1: Tech Stack

Serial No	Component	Technology/Service Used
1.	User Interface	Tkinter (Python GUI toolkit)
2.	Application Logic-1	TensorFlow (Python)
3.	Application Logic-2	IBM Watson Speech to Text (STT) service
4.	Application Logic-3	IBM Watson Assistant
5.	Cloud Database	IBM Cloudant (Assumed based on Watson services)
6.	Machine Learning Model	VGG19 model (pre-trained)
7.	Infrastructure (Server / Cloud)	Local Server Configuration: N/A (Code not designed for local server) Cloud Server Configuration: IBM Cloud Foundry or Kubernetes (assumed based on IBM Watson services)

Table-2: Application Characteristics

Serial No	Characteristics	Description	Technology
1.	Open-Source Frameworks	TensorFlow (open-source machine learning framework)	TensorFlow
2.	Scalable Architecture	Limited scalability due to the frozen VGG19 architecture	VGG19 (pre-trained and frozen layers)
3.	Availability	Dataset availability is crucial for training and evaluation	N/A (Dependent on dataset availability)
4.	Performance	Data augmentation, GPU utilization, and batch size considerations	TensorFlow (Data augmentation, GPU support, batch processing)