

Project Design Phase-II

Data Flow Diagram & User Stories

Date: 31 January 2025

Team ID: [Your Team ID]

Project Name: GrainPalette - A Deep Learning Odyssey In Rice Type Classification Through Transfer Learning

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.

Level 0 DFD (Context Diagram):

[User] → Upload Rice Image → [GrainPalette System] → Classification Result → [User]

[Admin] → Model Management → [GrainPalette System] → Performance Reports → [Admin]

[GrainPalette System] ↔ [Rice Database] ↔ [ML Model Repository]

Level 1 DFD (System Overview):

[User] → Image Upload → [1.0 Image Processing] → Processed Image → [2.0 Classification Engine]

[2.0 Classification Engine] → Classification Request → [ML Model] → Prediction Result → [2.0 Classification Engine]

[2.0 Classification Engine] → Result Data → [3.0 Result Processing] → Formatted Result → [User]

[3.0 Result Processing] → Store Result → [Classification History DB]

[Rice Variety DB] → Rice Info → [3.0 Result Processing]

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
End User (Mobile/Web)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account/dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Medium	Sprint-2
	Login	USN-4	As a user, I can register for the application through Gmail	I can register & access the dashboard with Gmail Login	Medium	Sprint-1
		USN-5	As a user, I can log into the application by entering email & password	I can successfully authenticate and access dashboard	High	Sprint-1
		USN-6	As a user, I can reset my password if I forget it	I can receive password reset email and create new password	Medium	Sprint-2
		USN-7	As a user, I can upload a rice image for classification	I can successfully upload JPG/PNG images up to 10MB	High	Sprint-2
		USN-8	As a user, I can upload multiple rice images at once	I can batch upload up to 10 images simultaneously	Medium	Sprint-3
		USN-9	As a user, I can capture rice images	I can take photos directly within the app	Medium	Sprint-3

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
			using my device camera			
	Classification	USN-10	As a user, I can get rice type classification results	I can see rice variety name with confidence score	High	Sprint-2
		USN-11	As a user, I can view detailed information about classified rice type	I can see nutritional info, origin, and characteristics	Medium	Sprint-3
		USN-12	As a user, I can save classification results to my profile	I can access my classification history anytime	Medium	Sprint-3
	Dashboard	USN-13	As a user, I can view my classification history	I can see all my previous classifications with timestamps	Medium	Sprint-3
		USN-14	As a user, I can export my classification results	I can download results in PDF/CSV format	Low	Sprint-4
		USN-15	As a user, I can search through my classification history	I can filter by date, rice type, or confidence score	Low	Sprint-4
Rice Expert	Content Management	USN-16	As a rice expert, I can add new rice variety information	I can contribute rice data to improve the system	Medium	Sprint-4
		USN-17	As a rice expert, I can review and validate classification results	I can provide feedback on model accuracy	Medium	Sprint-4
		USN-18	As a rice expert, I can suggest improvements to rice descriptions	I can enhance the quality of rice information	Low	Sprint-5
Administrator	User Management	USN-19	As an admin, I can manage user accounts	I can activate/deactivate users and view user statistics	High	Sprint-1

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
		USN-20	As an admin, I can view system analytics	I can see usage statistics and performance metrics	Medium	Sprint-3
		USN-21	As an admin, I can monitor model performance	I can track accuracy metrics and error rates	High	Sprint-2
	Model Management	USN-22	As an admin, I can update the classification model	I can deploy new model versions safely	High	Sprint-2
		USN-23	As an admin, I can configure model parameters	I can adjust confidence thresholds and settings	Medium	Sprint-3
		USN-24	As an admin, I can schedule model retraining	I can set up automated model improvement cycles	Low	Sprint-4
API User	API Integration	USN-25	As a developer, I can access classification API	I can integrate rice classification into my application	Medium	Sprint-4
		USN-26	As a developer, I can authenticate API requests	I can secure my API usage with proper authentication	Medium	Sprint-4
		USN-27	As a developer, I can monitor my API usage	I can track my API calls and quotas	Low	Sprint-5
System	Performance	USN-28	As a system, I can process images within 3 seconds	Classification results are delivered quickly	High	Sprint-2
		USN-29	As a system, I can handle concurrent user requests	I can serve multiple users simultaneously	High	Sprint-3
		USN-30	As a system, I can maintain 99.9% uptime	I can provide reliable service with minimal downtime	High	Sprint-1