Project Design Phase-II
Data Flow Diagram & User Stories

Date	27 June 2025
Team ID	LTVIP2025TMID59407
Project Name	Enchanted Wings: Marvels Of Butterfly Species
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.
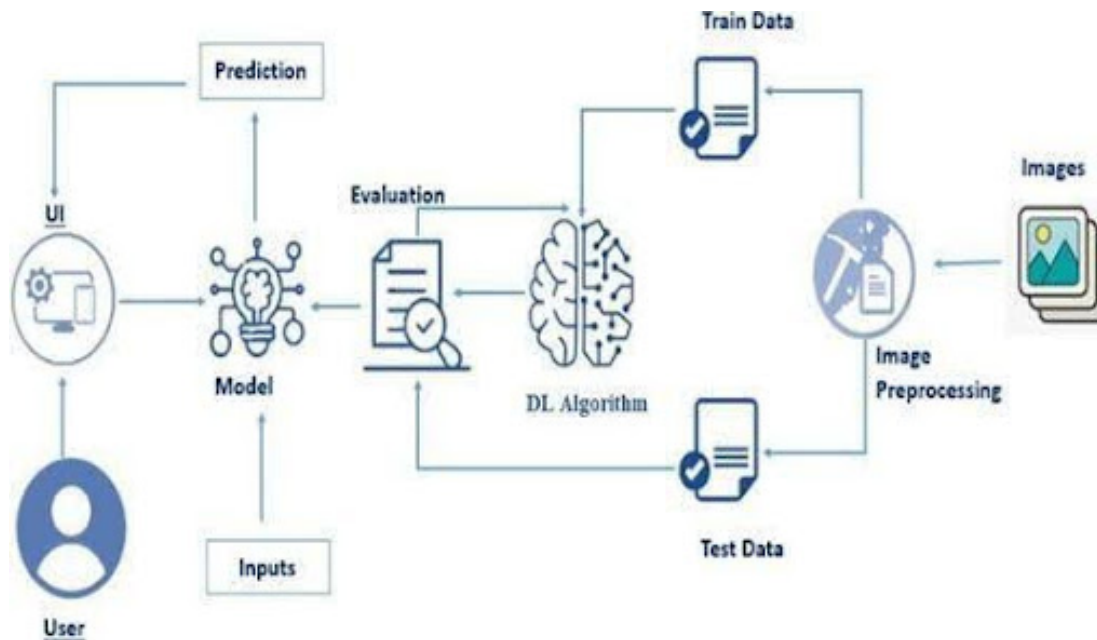
User Stories

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

User Type	Functional Requirement (Epic)	User Story #	User Story	Task	Acceptance Criteria	Priority	Release
Student/ Nature Lover	Upload & Predict	US-001	As a user, I want to upload a butterfly image and get the predicted species.	Implement upload UI, image preprocessing, prediction output	When a valid image is uploaded, the species name and confidence are displayed.	High	v1.0
Student	Education & Insight	US-002	As a student, I want to view additional info about the predicted species.	Link species name to Wikipedia, create info panel	Clicking on the species name opens a new tab or section with species info.	Medium	v1.1
Enthusiast	Confidence Display	US-003	As a user, I want to see how confident the model is in its prediction.	Display top-3 predictions with probabilities	At least top-1 confidence percentage is shown beside the result.	High	v1.0
Researcher	Explainable AI	US-004	As a researcher, I want to understand how the model arrived at its prediction.	Integrate Grad-CAM for heatmap visualization	When enabled, a heatmap overlay is shown on the predicted butterfly region.	Medium	v1.2
Enthusiast	Mobile Use	US-005	As a user, I want to use the app on mobile with minimal load time.	Optimize frontend, test on mobile viewports	App loads and functions properly on both Android and iOS browsers.	Medium	v1.1
Developer	Model Integration	US-006	As a developer, I want to integrate a trained model into the web app.	Load `.h5` model, connect to backend inference route	Image uploads trigger model inference and return correct JSON output.	High	v1.0
Maintainer	Dataset Management	US-007	As a maintainer, I want to update the dataset and retrain the model easily.	Script dataset updates, automate training pipeline	New images can be added and retraining can be triggered with minimal changes.	Low	v1.3
Researcher	Data Export	US-008	As a researcher, I want to export results for later analysis.	Add CSV/JSON export of image + prediction + time	After running predictions, user can download results in a structured CSV.	Low	v1.3