Project Design Phase-II
Data Flow Diagram & User Stories

Date	27th june 2025
Team ID	LTVIP2025TMID42332
Project Name	*Enchanted Wings: Marvels of Butterfly Species*
Maximum Marks	4 Marks

User Stories Table

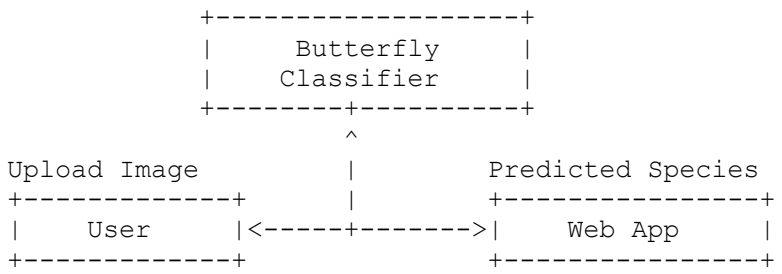
User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
Researcher / Web User	Image Upload	USN-1	As a user, I can upload butterfly images for prediction	I can browse and upload a valid image file	High	Sprint-1
Researcher / Web User	Image Classification	USN-2	As a user, I can receive predicted species and a confidence score	The species name and score are shown after upload	High	Sprint-1
Researcher / Web User	UI Interaction	USN-3	As a user, I see a visually pleasing result layout with image preview and prediction	The interface displays result, image, and butterfly fact	Medium	Sprint-2
Researcher / Web User	Offline Use	USN-4	As a user, I can use the system without internet access	The system works locally with all features active	High	Sprint-2
Admin	Model Management	USN-5	As an admin, I can load a trained model (MobileNet, ResNet) into the system	Model loads without crashing the app	Medium	Sprint-2
Admin	View Prediction Logs	USN-6	As an admin, I can view past user predictions with timestamp and accuracy	History displays stored records of predictions	Medium	Sprint-2
Educator / Enthusiast	Educational Output	USN-7	As a user, I can see butterfly fun facts and classification info alongside results	An interesting butterfly fact appears after prediction	Low	Sprint-2

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
Developer	Dataset Handling	USN-8	As a developer, I can collect and load butterfly images into training/testing folders	Images are organized into class-wise folders	High	Sprint-1
Developer	Data Cleaning	USN-9	As a developer, I can handle missing or corrupt data before training	No missing values exist before model training	High	Sprint-1
Developer	Model Training	USN-10	As a developer, I can build and train a CNN model with butterfly images	Training completes with good validation accuracy	High	Sprint-2

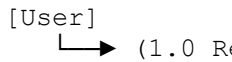
Data Flow Diagrams

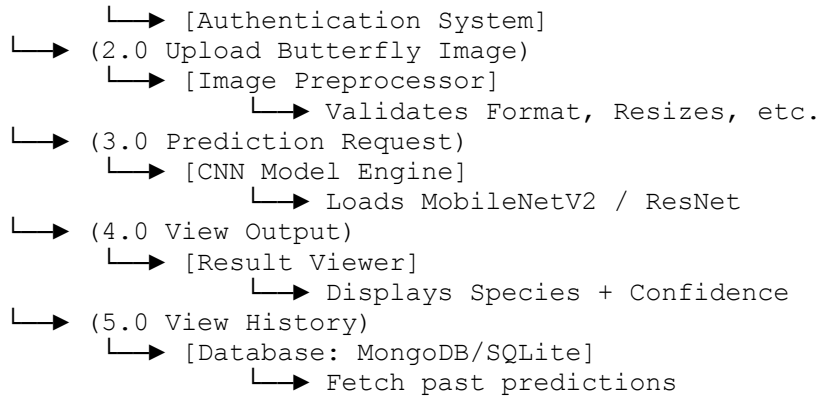
Level 0 DFD (Context Diagram)

A high-level view showing external interaction between the user and system.



Level 1 DFD (Detailed Functional Flow)





Entities Involved:

- **Web App (Flask/Streamlit)**: Takes input, routes it to backend.
- **Model Engine**: Trained deep learning model loaded via TensorFlow/Keras.
- **Database**: Logs predictions, timestamps, species name, accuracy.
- **User Interface**: Displays predictions, images, and butterfly facts.