**Capstone Project Logbook/Journal**

**Week 1 (20/04/2023 - 26/04/2023):**

Day 1 (20/04/2023):

Discussed project requirements with the instructor and selected the dataset from Kaggle.

Explored the dataset to understand the features and variables.

Day 3 (22/04/2023):

Prepared the project plan and timeline.

Developed the initial code for data loading and pre-processing using Pandas and NumPy.

Day 5 (24/04/2023):

Performed EDA on the dataset using Matplotlib and Seaborn.

Created basic visualizations of the dataset, such as histograms, and secondary data sets.

**Week 2 (27/04/2023 - 03/05/2023):**

Day 8 (27/04/2023):

Continued performing EDA on the dataset.

Cleaned the data by removing duplicate images and metadata if there were any.

Dealt with missing values in the dataset using imputation techniques.

Day 10 (29/04/2023):

Created more complex visualizations of the dataset using matplotlib.

Day 12 (01/05/2023):

Prepared the dataset for classification by splitting it into training, validation, and test sets.

Created data generators to load and augment the images for training.

**Week 3 (04/05/2023 - 10/05/2023):**

Day 15 (04/05/2023):

Started performing classification on the dataset using Scikit-learn.

Trained several classification models, such as logistic regression, decision trees, and random forests.

Evaluated the performance of the models using cross-validation.

Day 17 (06/05/2023):

Selected the best performing model based on the evaluation results (random forest classifier).

Tuned the hyperparameters of the selected model using grid search and cross-validation.

Day 19 (08/05/2023):

Deployed the application as a desktop GUI app using tkinter.

Created a simple interface for users to upload images and classify bird species with ease.

**Week 4 (11/05/2023 - 12/05/2023):**

Day 23 (12/05/2023):

Tested the application and made necessary modifications.

Completed my project presentation and interview (went well).

Prepared the final report and logbook/journal.