The complexity or effort for each story was estimated using **story points**, typically based on the Fibonacci sequence (1, 2, 3, 5), where 1 indicates a very easy task and 5 indicates a difficult task.

**🔹 Sprint 1 – Data Preparation (5 Days)**

The focus of Sprint 1 was **data collection and preprocessing**. This sprint began with collecting a relevant dataset of poultry images categorized into four classes: Coccidiosis, Salmonella, Newcastle Disease, and Healthy. This task was given a story point value of 2, considering the moderate effort required to find and organize quality images.

Loading the dataset into the training environment was a relatively easy task and was assigned 1 story point.

Next, the data underwent preprocessing. Handling missing values (such as corrupted or unreadable images) required significant logic and cleaning operations, so it was considered a moderately difficult task and assigned 3 story points. Encoding categorical variables (i.e., class labels for training the model) was easier and scored at 2 story points.

The total effort for Sprint 1 was estimated at **8 story points**.

**🔹 Sprint 2 – Model Development & Deployment (5 Days)**

Sprint 2 focused on **model development and deployment**. Building the classification model using transfer learning (e.g., ResNet50 or InceptionV3) was a core task and involved integrating the pre-trained model, modifying the top layers, and training it on the poultry dataset. This task was considered difficult and assigned 5 story points.

After the model was built, testing was performed to evaluate its accuracy and reliability. Model testing involved creating validation workflows, accuracy graphs, and confusion matrices, and was rated at 3 story points.

In parallel with model development, the front-end and deployment processes were carried out. HTML pages were created to support user interaction, including an image upload section and a results display area. This front-end task was rated 3 story points. The Flask-based deployment, which included model integration and backend routing, required more technical effort and was given 5 story points.

The total effort for Sprint 2 was estimated at **16 story points**.

**Velocity Calculation**

The total number of story points completed over both sprints was **24** (8 from Sprint 1 and 16 from Sprint 2). Since the team worked in **2 sprints**, the **velocity** was calculated as:

**Velocity = Total Story Points ÷ Number of Sprints = 24 ÷ 2 = 12**

Thus, the team’s velocity was **12 story points per sprint**. This metric helps in estimating the team’s capability and planning future iterations more accurately.