**1. Introduction**

* **Brief Overview:** This reflective journal focuses on gaining experience with image classification using the CIFAR-10 dataset and the Scikit-Learn library.
* **Purpose:** The purpose of this reflection is to document my learning process, analyze the challenges I faced, and identify areas for future improvement in image classification tasks.

**2. Description of Experience or Topic**

* **Background Information:** Image classification is a task in computer vision, it is used to assign a label to an image from a predefined set of categories. The CIFAR-10 and Scikit-Learn are both tools for image classification.
* **Specific Details:** The first step was to import necessary libraries to work with the images. We imported NumPy, Matplotlib, TensorFlow, and Scikit-Learn. Tensor flow was used to load CIFAR-10. This was used to flatten the image and change it to a grayscale. Then the Support Vector Machine was used from Scikit-Learn. This model can be trained through the machines own experience.

**3. Personal Reflection:**

* **Analysis:** Understanding image classification, data preprocessing, feature extraction. The concept of hyperplanes and support vectors in SVM. I became more familiar with the Scikit-Learn library and its functionalities for machine learning tasks.
* **Challenges:** Grasping the concept of installing and importing the libraries, datasets, and machine learning modules. Understanding how each library feeds into one another and the sensitivity of the codes.

**4. Discussions of Improvements and Learning:**

* **Personal Growth:** I was able to start to gain a better understanding of how running the codes work and what to expect when we write and run. Being able to work hands on and see things visually helps my progress a lot and has allowed me to feel more comfortable with the steps, as well as knowing that mistakes can happen, but I am expanding my knowledge on how to fix it when they do.
* **Future Application:** I feel that right now I am still exploring how to use this coding in the future as far as real-life context is concerned. However, with academics I am certain that I will be able to use these steppingstones to further my understanding and appreciation for machine learning.