**IMAGE COMPRESSION USING LZW METHOD**

Team members:

21PD19 - Krithika L

21PD31 – Sanjana R

**ABSTRACT**

Image compression is a critical aspect of managing and transmitting visual data efficiently. This project explores the realm of image compression with a specific focus on the Lempel-Ziv-Welch (LZW) method. LZW is a renowned lossless compression technique that aims to reduce the size of image files while preserving image quality. It is a dictionary-based algorithm that excels at retaining the integrity of every pixel in the original image. In this project, we delve into the intricacies of LZW image compression and its relevance in applications where uncompromised image fidelity is essential.

Our project centres on the implementation of LZW image compression, emphasizing both encoding and decoding processes by dividing the image into RGB channels. Through the creation and utilization of an adaptive dictionary, we effectively identify and encode recurring patterns and sequences within the image data, reducing redundancies without losing any image detail. This unique approach exemplifies a powerful means of achieving lossless image compression, particularly in scenarios where image integrity is important. Our project not only explores the theoretical underpinnings of the LZW method but also provides practical insights into its application, showcasing the capabilities and advantages of this technique for image compression without requiring block segmentation.