ABSTRACT

We are attempting to make a software that will take a bitmap format picture and hide the main object of the image in the background of the image. The real image can be obtained using an encryption key which will be known, only by the sender and receiver.

The idea for this project is based on the paintings of Abbott Handerson Thayer. **Abbott Handerson Thayer** (August 12, 1849 – May 29, 1921) was an American artist, [naturalist](https://en.wikipedia.org/wiki/Naturalist) and teacher. As a [painter](https://en.wikipedia.org/wiki/Painting) of [portraits](https://en.wikipedia.org/wiki/Portrait), figures, animals and [landscapes](https://en.wikipedia.org/wiki/Landscape_art), he enjoyed a certain prominence during his lifetime, and his paintings are represented in the major American art collections. He is perhaps best known for his 'angel' paintings, some of which use his children as models.

We are using counter shading technique to match the intensities of the pixels in the image. An image will be disintegrated into a large number of pixels. Each pixel has 4 bytes containing the CMYK values (Cyan, Magenta, Yellow and Key). We are interested in the value of K, for all the pixels. We will run an iteration operation to find the Key values of all the pixels, find the average value and then change the Key values of all the pixels to this average value. By doing so, the intensities of all the pixels will be the same and hence the object of the image will be hidden in the image itself.

The main functionality is to hide the content of the image in the image itself. This is the main feature of the software. However, it will also have different levels of encryption depending on the user’s requirement. This additional feature makes it safer as it becomes harder to decrypt.