Part 1: Linear Interpolation

The reconstructed test image (`hope.jpg`) is shown as figure 1.

Figure 1: Test image reconstructed by linear interpolation.

The template asked for *map of squared differences*, I interpreted this as mean squared error (MSE):

$$\text{MSE} = \frac{1}{N}\sum_{i,j}(Y_{ij}^c - \hat{Y}_{ij}^c)^2$$

where Y_{ij}^c is the reconstructed pixel value of color c, $\hat{Y}$ denotes the original image, and N is the total number of pixels. MSE and maximum pixel error is listed in table 1.

Table 1: Errors of provided images.

Image	MSE	max pixel error
Crayons		
Tony		
Iceberg		

Part 2: Freeman Method

Next section.

Part 3: Images of my choice

Some image choices.

Part 4: Bonus

Bonus!