a. To read a color image bitmap file from disk, I used file input/output operations in C. I opened the file using fopen in binary mode, then read the file header and pixel data using fread.

b. To input the size (width) of a frame between 4 and 20 pixels and the RGB value of the frame color, I prompted the user to enter these values using scanf.

c. To output the file header and image information head of the input image on the screen, I printed these values to the console using printf.

d. To perform the quarterly reduction transformation, I iterated through the image pixels and reduced the size of the image by averaging the pixel values in each quarter.

e. To write the image bitmap file of the reduced image to disk and output its file header and image information head on the screen, I used file output operations to create a new bitmap file and write the reduced image data, along with the updated file header information.

f. To perform the frame merge transformation of the reduced image and its reflected images, I iterated through the reduced image pixels and copied them into a new image buffer, while also mirroring the pixels along the frame boundaries.

g. To write the image bitmap file of the frame merged image to disk and output its file header and image information head on the screen, I again used file output operations to create a new bitmap file and write the merged image data, along with the updated file header information.