# **An image sharing Android application that implements image compression**

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**PROBLEM**

Android is the world’s most popular mobile operating system with 96 percent of the world’s smartphones run on this open-source operating system. In a world where media is the most important form of data, we aim to create a peer-to-peer image sharing application that implements image compression. We aim to reduce the time required to transfer files between smartphones. Instead of Bluetooth or other short-wave radio communication techniques, we aim to use Wi-Fi to transfer the files, which is proven to be 50x faster.

**SOLUTION**

Since most photographs taken on a smartphone are *natural,* we aim to use lossy image compression techniques. Before we zero in on a particular compression technique to use on our project, we aim to identify multiple combinations of the known compression techniques and evaluate them on the following parameters:

1. Compression ratio – the ratio of the size of the original image to the compressed image
2. Clarity – how well does the compressed image fare to the original? Are relevant details of the original image still kept intact in the compressed image?

Based on the results of our study, we would come to a conclusion about the best compression algorithm to use, be it the old Discrete Cosine Transform (DCT) techniques or the newer, wavelet transform or fractal compression techniques.

The next step would be to proceed towards the implementation of the program. Using Android Studio and existing Android SDKs, we would create a working prototype of the application and test the same with a few samples. Since the application uses a peer-to-peer network, permissions are to be added to the *manifest file* to be able to use Wi-Fi connectivity. Once completely tested, we would release the final version of our application.