

CS-GY-6533 Interactive Computer Graphics

In-Class Exercise 1

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1 Gamma Correction

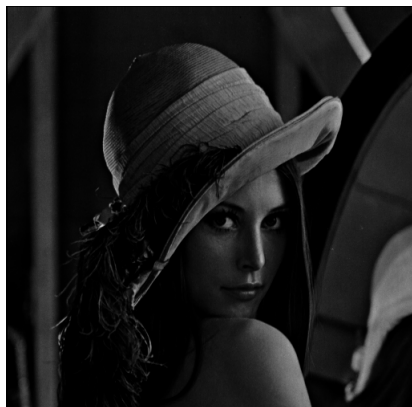
Codes for implementing gamma correction are below:

```
void gamma_corrected(const float gamma, PPM & ppmFile) {
    for (auto i = 0; i < ppmFile.size; ++i) {
        ppmFile.mPixels[i].rgb[0] = static_cast<unsigned char>(
            static_cast<float>(ppmFile.mMaxValue) *
            pow(((float)ppmFile.mPixels[i].rgb[0]/static_cast<float>(ppmFile.mMaxValue)), gamma) );
        ppmFile.mPixels[i].rgb[1] = static_cast<unsigned char>(
            static_cast<float>(ppmFile.mMaxValue) *
            pow(((float)ppmFile.mPixels[i].rgb[1]/static_cast<float>(ppmFile.mMaxValue)), gamma) );
        ppmFile.mPixels[i].rgb[2] = static_cast<unsigned char>(
            static_cast<float>(ppmFile.mMaxValue) *
            pow(((float)ppmFile.mPixels[i].rgb[2]/static_cast<float>(ppmFile.mMaxValue)), gamma) );
    }
}
```

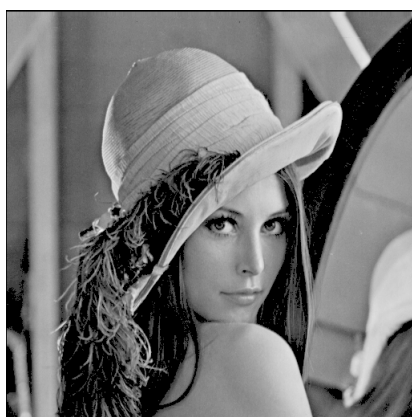
Original picture:



Gamma: 4



Gamma: 0.25 (Nonlinear inverse from last correction)



Gamma: 0.25 (correct with 0.25 for second time)

