Problem4

September 30, 2016

In [19]:
```
using DataFrames
#download("http://www.cs.purdue.edu/homes/dgleich/cs314-2016/homeworks/smallicon.csv","smallic
X = readcsv("smallicon.csv");
sum(diag(X))
```

Out[19]: 24.36862745098039

In [6]:
```
using Images
grayim(X)
```

Out[6]:

In [10]:
```
using Images
using FileIO
using ImageMagick
grayim(X')
save("problem4partA.png", grayim(X'))
```

In [26]:
```
N = reshape(1:(4*4), 4, 4)'
```

Out[26]:
```
4x4 Array{Int64,2}:
  1   2   3   4
  5   6   7   8
  9  10  11  12
 13  14  15  16
```

In [24]:
```
N = reshape(1:(4*4), 4, 4)
```

Out[24]:
```
4x4 Array{Int64,2}:
 1  5   9  13
 2  6  10  14
 3  7  11  15
 4  8  12  16
```

In [18]:
```
MY = Dict(1 => [1 2 33 34])
k = 1;
for i=2:(16*16)
    if MY[i-1][2] == k*32
        MY[i] = MY[i-1] +  34
        k+=2
    else
        MY[i] = MY[i-1] + 2
    end
end

A = zeros(16*16,32*32)

for j=1:(16*16)
    ind = MY[j]
    A[j, ind] = 1/4
end
x = reshape(X',32*32,1)
y = A*x
Y = reshape(y,16,16)'

using Images
grayim(Y')
```

Out[18]:

In [20]:
```
using Images
using FileIO
using ImageMagick
save("problem4partD.png", grayim(Y'))
```

In [ ]: