Assignment 2

Posted: October 16, 2009
Due: October 23, 2009 (2pm, i.e. in class)

Task: Become familiar with the JPEG encoder application

Instructions:

The purpose of this first assignment is for you to become familiar with the JPEG application source code. A C reference implementation of the core JPEG encoder, which we will use as a starting point for our design, is available at
        `/home/doemer/EECS222A_F09/jpegencoder.tar.gz`

Install the JPEG encoder example:
```
mkdir hw1
cd hw1
gtar xvzf /home/doemer/EECS222A_F09/jpegencoder.tar.gz
cd jpegencoder
```

Now you can compile and run the example using the provided Makefile:
```
make
make test
```
The latter command runs the example on a `ccd.bmp` sample input and validates the generated `test.jpg` file against an expected `golden.jpg` reference output.

Finally, browse the sources and analyze the source code structure:

(a) Draw a block diagram of the file and function hierarchy and their communication dependencies (critical variables).
(b) Modify the example for a fixed input image sensor size of 116×96 pixel. Simplify the code as much as possible, remove any unnecessary communication/dependencies, and convert all dynamic memory allocation (i.e. the malloc calls) into appropriate static data structures (static array variables). Briefly report on the code changes that you have performed.

Deliverables:

One page with (a) your diagram and (b) your list of applied code changes.
(Note: you don't need to turn in your code, but you will need it for the following assignment!)

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Rainer Doemer (EH3217, x4-9007, doemer@uci.edu)