First, go through the tutorial presentation.

https://docs.google.com/presenta…

Next, compile Caffe and run a few of the tutorials listed here:

http://caffe.berkeleyvision.org/…

Having a good intuition of what the program does and does not do is a good first step to being able to understand the source code, rather than figuring out what the executable is supposed to do just given the code.

Caffe is written mostly in C++, with python/MATLAB as scripting interfaces and some GPU kernels written in CUDA C/C++. For the most part you only need to worry about the C++ parts.

1) Understand what the Makefiles are doing. Running “make” actually builds several executables - caffe being one of them, but each of the cpp files in “caffe/tools” contains it’s own “main” function.
2) These main() functions are the sole entry points into the programs.

Stepping it through it line by line. You can do this with lldb/gdb, but I personally prefer to compile it using QT Creator or Eclipse (both support importing Makefile projects). This takes a little bit of work though.

3) As a sort of high-level overview, Caffe basically does one of two things:

```
function train()
for i=1:num_iterations
forward(net)
backward(net)
end
end
```

```
function test()
forward(net)
end
```

Notice that they are very similar. All training is is repeated computation of forward passes, followed by some variant of back-propagation of errors.