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DSP Assignment #1

### Environment:

MacOS El Capitan 10.11.6

Darwin Kernel Version 15.6.0

```
GW-MacBookPro:hw1_b02902122 GW$ uname -a
Darwin GW-MacBookPro.local 15.6.0 Darwin Kernel Version 15.6.0: Mon Aug 29 20:21:34 PDT 2016; root:xnu-3248.60.11~1/RELEASE_X86_64 x86_64
GW-MacBookPro:hw1_b02902122 GW$
```

### Execution:

Using Makefile and the 'make' command to compile .c files into executable files.

```
GW-MacBookPro:hw1_b02902122 GW$ cat Makefile
all:
    gcc train.c -o train
    gcc test.c -o test
clean:
    rm -f train
    rm -f test
GW-MacBookPro:hw1_b02902122 GW$ make
gcc train.c -o train
gcc test.c -o test
GW-MacBookPro:hw1_b02902122 GW$
```

Running the program (following the parameters on dsp\_hw1 slides):

For 'train.c'

```
GW-MacBookPro:hw1_b02902122 GW$ ./train 800 model_init.txt seq_model_01.txt model_01.txt
```

(\* repeat: seq\_model\_01.txt ~ seq\_model\_05.txt, model\_01.txt ~ model\_05.txt)

For 'test.c'

```
GW-MacBookPro:hw1_b02902122 GW$ ./test modelist.txt testing_data1.txt result1.txt
GW-MacBookPro:hw1_b02902122 GW$
```

(\* repeat: testing\_data1.txt ~ testing\_data2.txt, result1.txt ~ result2.txt)

### Summary of results:

Iterations	Accuracy
200	0.851800
400	0.854000
800	0.868800

As seen by the results, 800 (quadruple and twice as many) iterations only slightly improve the accuracy. Thus, suggesting that 200 iterations are already good enough. It may also indicate that the expected value was already reached at around 200 iterations.