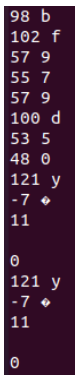
Lab6-Report

1. Implementation results

```
u@u:/media/sf_Code/CO/Lab6_release$ ./demo.sh
rm -f *.o
g++ -I./include main.cpp direct_mapped_cache.cpp set_associative_cache.cpp -o main.o
============================ Direct mapped result ============================

 0.0795226  0.0660363  0.0547202  0.0553402  0.0920787 | 4096
 0.0624709   0.042784   0.031623  0.0244923  0.0398388 | 16384
 0.0570454  0.0356534  0.0234072  0.0159665  0.0124012 | 65536
 0.0565804  0.0350333  0.0227872  0.0151914  0.0114711 | 262144
-------------------------------------------------------
        16         32         64        128        256

====================== N-way set associative result ======================

Bloack size: 64

  0.110681   0.083553  0.0778174  0.0782824 | 1024
 0.0827779  0.0517749   0.041854  0.0398388 | 2048
 0.0547202  0.0362734  0.0306929  0.0280577 | 4096
 0.0403038  0.0297628  0.0266625  0.0244923 | 8192
  0.031623  0.0237172  0.0234072  0.0229422 | 16384
 0.0254224  0.0232522  0.0227872  0.0227872 | 32768
-----------------------------------------
     1-way      2-way      4-way      8-way
```

2. Problems encountered

a、 The code sometimes reads in specials characters, causing the convert function raising exceptions.



i. Solve: I found I initialized the valid and tag bits in wrong number, and cause the program to overflow. After correcting the part, this problem is solved.

3. Experience

At the beginning of this class, I thought this class would be very

hard since I am not good at either Verilog, assembly, nor knowledge of processor. But I found this class interesting and very fun because of professor's teaching style and the assignments, labs, they all help me a lot in comprehending the materials and concepts in this class.

At the end, I want to say thank to professor and TAs, thank you for solving my problems about this class and helping us completing the labs.