Lab Report 1.C – Copy Program

Description:

We were asked to take pre-defined code from the project document and run it in the EASy 68K simulator. Out goal was to run the program, observe the changes in memory, and get familiar with the simulator.

Equipment Used:

- EASy 68K Simulator
- NimbleText

Procedure:

Before I could run the program, I had to reformat it so I could avoid getting errors in the simulator. I used an online tool called NimbleText to add the correct spacing to the code. Next, I needed to load characters A-Z, a-z, and 0-9 to memory locations $2000 to $2040. After that, I entered the program into the simulator and executed it. Once I had successfully executed the program, I ran it and observed the changes in the memory window.

Program Description:

This program stores alphanumerical characters starting at memory address $2000. Then it copies those characters to spell “Welcome to CSCI 320!!! “ starting at memory address $2200.

Results:

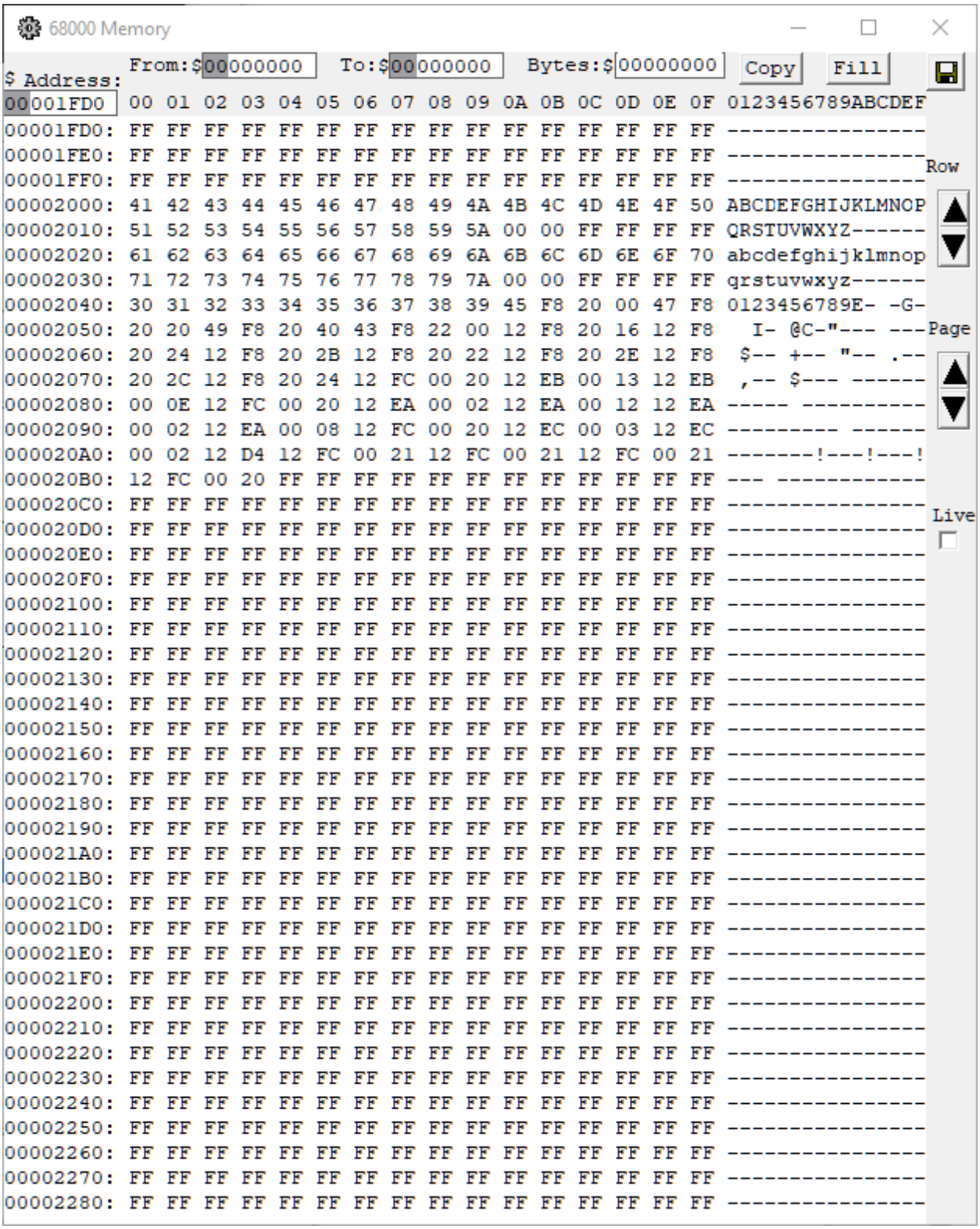

Figure 1 The memory window before running the program.

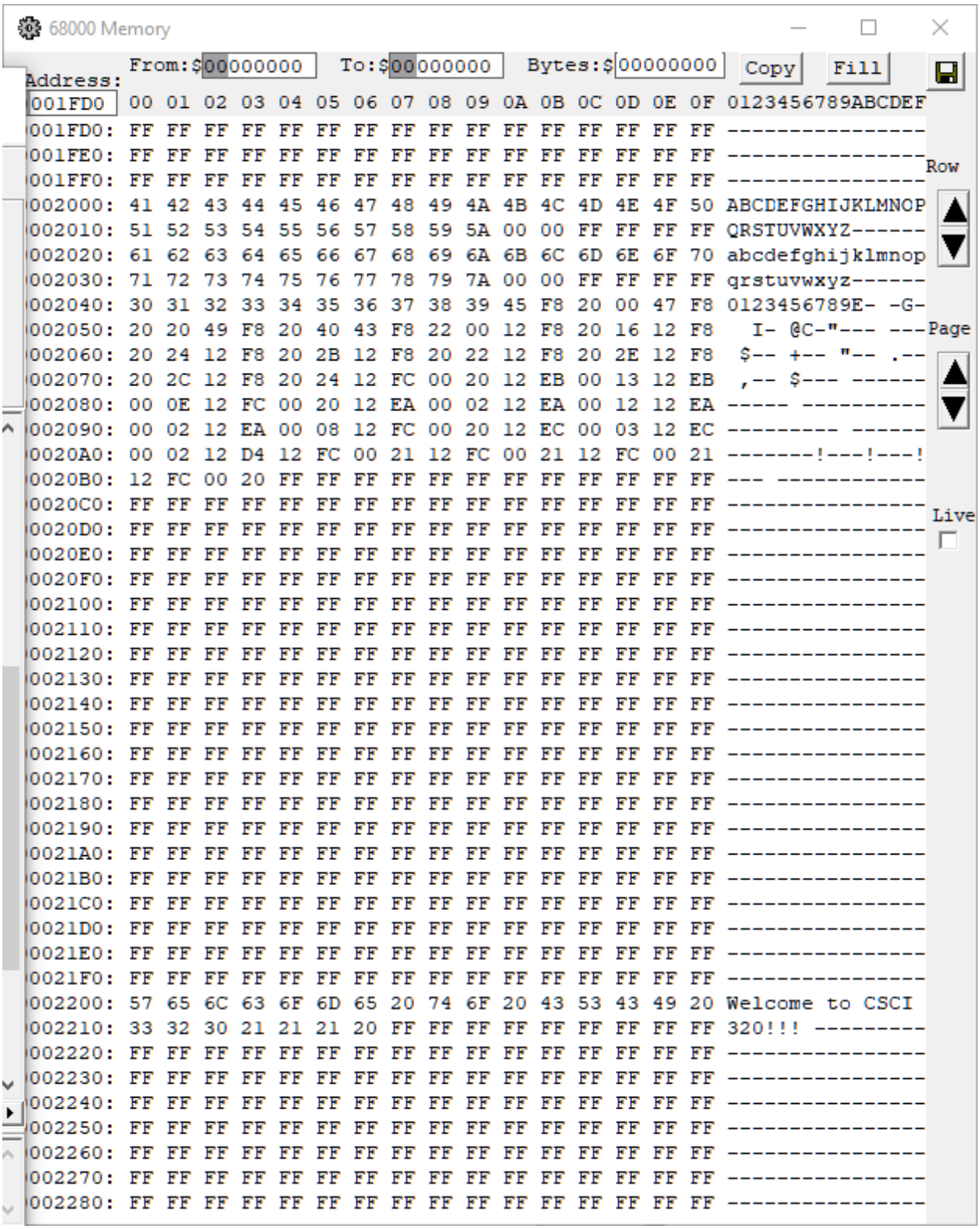

Figure 2 The memory window after running the program.

Conclusions:

This lab taught me the basics of 68K Assembly and using the EASy 68K simulator. I also better understand how this variation of Assembly differs from LEGv8, which I learned in CSCI 220 last spring. This knowledge will be useful in future labs, where I'll need to modify this program to spell my name.

Code Listing:

```
    ORG $2000
    DC.L 'ABCDEFGHIJKLMNOPQRSTUVWXYZ'
    ORG $2020
    DC.L 'abcdefghijklmnopqrstuvwxyz'
    ORG $2040
    DC.W '0123456789'

START:
    LEA.L $002000,A2
    LEA.L $002020,A3
    LEA.L $002040,A4
    LEA.L $002200,A1
    MOVE.B $002016,(A1)+
    MOVE.B $002024,(A1)+
    MOVE.B $00202B,(A1)+
    MOVE.B $002022,(A1)+
    MOVE.B $00202E,(A1)+
    MOVE.B $00202C,(A1)+
    MOVE.B $002024,(A1)+
    MOVE.B #32,(A1)+
    MOVE.B 19(A3) ,(A1)+
    MOVE.B 14(A3) ,(A1)+
    MOVE.B #32,(A1)+
    MOVE.B 2(A2) ,(A1)+
    MOVE.B 18(A2) ,(A1)+
    MOVE.B 2(A2) ,(A1)+
    MOVE.B 8(A2) ,(A1)+
    MOVE.B #32,(A1)+
    MOVE.B 3(A4) ,(A1)+
    MOVE.B 2(A4) ,(A1)+
    MOVE.B (A4) ,(A1)+
    MOVE.B #33,(A1)+
    MOVE.B #33,(A1)+
    MOVE.B #33,(A1)+
    MOVE.B #32,(A1)+
    SIMHALT ; halt simulator
    END START ; last line of source
```