Summary of Projects

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C++ Meta Assembler

Brief description: This program takes in 2 text files, one which lets the user define their own Assembly language commands with corresponding machine code, and another which lets them write Assembly programs in their assembler. When the program is executed it produces a third text file, in cedar logic format, containing machine code.

It was designed with a specific virtual CPU in mind, one I made in CEDAR logic, so that I could write working assembly programs for it. It makes use of directives such as EQU, ORG and has working labels and offsets.

Skills learned:

-Object oriented programming

-File handling

-Debugging

-Source control

-Assembly

C++ Meta Assembler

Definitions.txt

```
JMP E
ADDI D
MOVEI C
MOVE B
STORE A
LDA 9
BZ FE
BNZ FD
(STA) FFFF
(STA)+ FFFE
```

ProgramIn.txt - Notepad

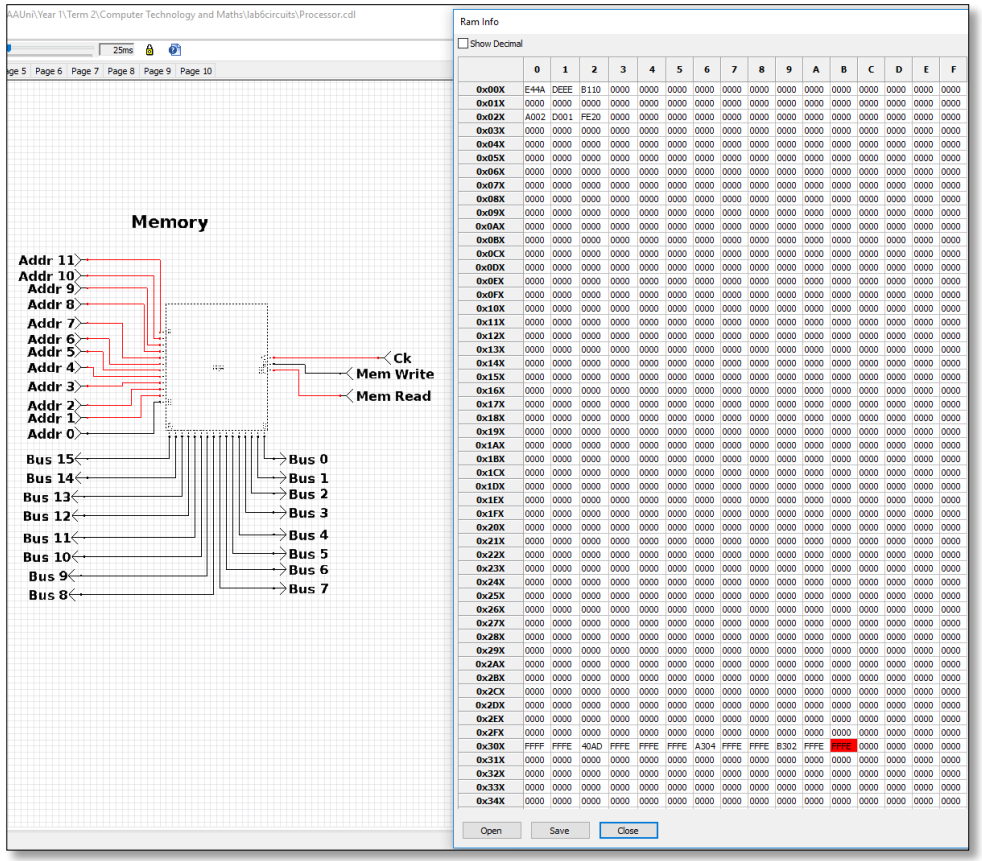
File Edit Format View Help

```
thing:  JMP     44A
num1:   ADDI    EEE
num2:   MOVE    var1
        ORG     var2
        STORE   num2
        ADDI    num1
branch: BZ      var2
        ORG     300
        (STA)
        (STA)+
num4:   DC      40AD
        (STA)+
num3:   (STA)+
        (STA)+
        STORE   num3
        (STA)+
        (STA)+
        MOVE    num4
        (STA)+
var1:   EQU     110
var2:   EQU     20
        (STA)+
```

ProgramOut.cdm - Notepad

File Edit Format View Help

```
000 : E44A
001 : DEEE
002 : B110
020 : A002
021 : D001
022 : FE20
300 : FFFF
301 : FFFE
302 : 40AD
303 : FFFE
304 : FFFE
305 : FFFE
306 : A304
307 : FFFE
308 : FFFE
309 : B302
30a : FFFE
30b : FFFE
```



Python Hacking minigame

Brief description: My first major programming project of the year was a small hacking minigame that was intended to resemble the Fallout franchise's hacking minigame. It was made in Python and would output the game to the console, which is where it took user input. The word pool was in the form of a word document that could be edited, it handles user error, and the game would keep a record of the user's win streak.

Skills learned:

-User input

-Error handling

-Basic game systems

-File handling

-Functions

Python Hacking minigame