

CSC 317 Program
Program #2
Title: B-17
Due: May 1, 2015

0.1 Libraries used

Libraries used in this program are :

`<iostream>`, *`<iomanip>`*, *`<string>`*, *`<sstream>`*, *`<fstream>`*, and *`<cstdlib>`*

0.2 Algorithms

1. Read in the object file and set up the memory array
2. Read in instruction counter and the number of instruction to be executed
3. For each instruction begin to execute instruction
 - (a) Decode the instruction and determine the address mode and instruction to be executed.
 - (b) Execute the correct instruction
4. Check the address mode to get the correct output
5. Output the information for executed instruction
6. Repeat steps 3-5 for each instruction
7. If an error is encountered

0.3 Functions and Program Structure:

1. Compiling and Usage:

Compile by typing `make b17` in Linux

Usage: `b17` object file name

Sample object file:

```
50 1 000000
c4 5 050404 200800 300800 102840 050c00
101 2 300 9
200 1 30
300 1 10
c4
```

Sample output file:

```
0c4: 050404 LD IMM AC[000050] X0[000] X1[000] X2[000] X3[000]
0c5: 200800 ADD 200 AC[000080] X0[000] X1[000] X2[000] X3[000]
0c6: 300800 ADD 300 AC[000090] X0[000] X1[000] X2[000] X3[000]
0c7: 102840 SUB 102 AC[000087] X0[000] X1[000] X2[000] X3[000]
0c8: 050c00 J 050 AC[000087] X0[000] X1[000] X2[000] X3[000]
050: 000000 HALT AC[000087] X0[000] X1[000] X2[000] X3[000]
Machine Halted - HALT instruction executed
```