

Lab 2.C – Addressing Modes

DESCRIPTION

The goal of this experiment is to study memory partitions and addressing modes. This is accomplished by creating specific items in memory and then executing instructions which operate on those items. You will also be required to initialize some of the processor registers.

The following information represents memory setup and processor registers. Your task is to determine the changes in all respects caused by executing the following instructions using pencil and paper. The results of the pencil and paper portion are to be turned in at the end of the lab along with all of the other materials which are required.

| Address Location | Contents |
|------------------|----------|
| 2518 | 4433 |
| | 4241 |
| | 0000 |
| | 0000 |
| | 2553 |
| | 0000 |
| | 01EF |
| | ABCD |
| | 5476 |
| | CC22 |
| | FF34 |
| | 12FF |
| | . |
| | . |
| | . |
| 2544 | A267 |
| | 1FEE |
| | FFFF |
| | FFFF |
| | 0100 |
| | 0000 |
| | ABCD |
| | FFFF |
| | 0000 |
| | 0000 |
| | |

Table 4.1 specifies the memory location and the contents it should contain

| Register | Contents |
|----------|----------|
| A3 | 002468FA |
| A4 | 00002544 |
| A6 | 00002518 |
| D3 | 00000000 |
| D5 | FFFFFFFF |
| D6 | 00000000 |

Table 4.2 specifies the register and the contents it should contain

INSTRUCTIONS

| | | | |
|--------|--------------|--------|------------------|
| 00260E | 162E0003 | MOVE.B | 3 (A6) , D3 |
| 002612 | 3D6C00040006 | MOVE.W | 4 (A4) , 6 (A6) |
| 002618 | 2A1E | MOVE.L | (A6) +, D5 |
| 00261A | 31DC2522 | MOVE.W | (A4) +, \$002522 |
| 00261E | 1938252E | MOVE.B | \$00252E, - (A4) |
| 002622 | 47F8252A | LEA.L | \$00252A, A3 |
| 002626 | 3C13 | MOVE.W | (A3) , D6 |

You are to now actually execute your instructions in **TRace** mode. That is, each instruction will be executed one at a time at your command from the keyboard.

After execution, you need to display the contents of memory to determine all that has happened. You need to turn in a **copy of memory before and after execution** as well as the **TRace** mode listing.

RUNNING PROGRAM IN TRACE MODE

1. After you run your program from the editor, click Options > Log Output.
2. Under Log Output:
 - a. Specify your Log File name and path
 - b. Select Instructions, Registers and Memory
 - c. Specify Memory Range and Bytes
 - d. Specify your output log file name and path
 - e. Select Text only & click ok.
3. Do: Run > Log Start > Auto Trace.
4. The 2 output files will be saved on the path that you have mentioned above. Right-click and open as a text file and you should be able to see your trace through registers and addresses, and memory.