Lab Exercise Number 03

Developing a Simple 68000   
Assembly Code (Block Copy)

Lab Partners:

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**Academic Honor Code:**

*"I have neither given nor received unauthorized aid in completing this work, nor have I presented someone else’s work as my own"*

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# Introduction:

The purpose of this lab was to get familiar with Block Copy in Assembly Code. This lab taught us how to copy a block of characters using branch and decrement branch tools, (Bcc & DBcc).

# Required Resources:

|  |  |
| --- | --- |
| Lab Resource Identification: | |
| Easy68k Assembler | v5.15.04 |

# Lab Description & Pre-Lab:

# This was the first lab that actually has us making code. To create the code that was ask of us, we wrote a pseudo-code to help out with the logic.

Load Input Table in Address 1 // Loads the table starting points

Load Output Table in Address 2

Store 63 in register 1 // 63 since the first iteration is done before the count

Move Byte and increase address point // loop start

Decrement value in register 1

Branch to loop start if register 1 != 0

# Set-up and Procedure:

We typed the quotation that is 83 characters long in Easy68K simulator. We copied the quotation to an address register and by using the branch tools we copied a 64 characters from the quotation into a different address register. We ran the code and checked the memory location if the block were copied as we wanted. Then we checked for clock cycles and noted how many instructions we have used in our code.

# Results:

The 64 characters were copied from the 83 character quotation using brach and decrement branch tool.

Below are the results of each variation:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Bcc.B | Bcc.W | Bcc.L | DBcc.L |
| Number of Instructions | 7 | 7 | 7 | 6 |
| Code size (Bytes) | 24 | 24 | 24 | 28 |
| Number of clock cycles | 2206 | 1118 | 702 | 738 |

# Conclusion:

This lab helped us understand how to copy blocks of code with limiting the amount of characters we want to copy. It also got us familiar with the branching tools, the procedure, constrictions and ways of using them effectively in our code.