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| **SUBJECT** | Computer Architecture and Organization |
| **EXPERIMENT No.** | 2 |

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| **AIM:** | Simulate the operation of copy and paste in 8086 (MASM) |
| **Program 1** | |
| **PROBLEM STATEMENT:** | Write an assembly language program to copy 16-bit numbers form one location to another location.   1. By copy pasting in same segment. 2. By copy pasting in same segment using loop instruction. 3. By using string instructions. |
| **OBJECTIVES:** | * Mounting of drive on DOSBOX. * Copy of data from one segment and pasting it in same & different segment. * Understand the un assembly of data segment and code segment. * Learn the execution of code in DOSBOX. |
| **REQUIREMENTS:** | DOSBOX software, MASM. |
| **ALGORITHM:** | 1. Declare 4 variables of ‘dw’ type and store a hexadecimal number in each. 2. Create 2 variables of ‘dw’ type to store addition and subtraction result and a variable of ‘dd’ type to store multiplication result. 3. Initialize the name of code and data segment 4. Move the Data in AX and then Data into DS segment. 5. Move the 4 variables into AX, BX, CX and DX registers. 6. Add AX and BX and store in TOT 7. Subtract CX and DX and store in DIFF 8. Multiply AX and CX and store MSB in PROD and LSB in PROD+2. 9. End |
| **RESULT:**  **LST :** | \_Microsoft (R) Macro Assembler Version 5.00 9/23/22 15:36:21  Page 1-1  ASSUME CS:CODE,DS:DATA    0000 DATA SEGMENT  0000 1000 VAR1 dw 1000H  0002 2000 VAR2 dw 2000H  0004 3000 VAR3 dw 3000H  0006 4000 VAR4 dw 4000H  0008 ???? TOT dw ?  000A ???? DIFF dw ?  000C ???????? PROD dd ?  0010 ???????? QUO dd ?  0014 DATA ENDS    0000 CODE SEGMENT  0000 B8 ---- R START:MOV AX,DATA  0003 8E D8 MOV DS,AX  0005 A1 0000 R MOV AX,VAR1  0008 8B 1E 0002 R MOV BX,VAR2  000C 8B 0E 0004 R MOV CX,VAR3  0010 8B 16 0006 R MOV DX,VAR4  0014 03 C3 ADD AX,BX  0016 A3 0008 R MOV TOT,AX  0019 2B CA SUB CX,DX  001B 89 0E 000A R MOV DIFF,CX  001F A1 0000 R MOV AX,VAR1  0022 F7 E1 MUL CX  0024 A3 000C R MOV PROD,AX  Bodhisatya\_exp1.asm(27): warning A4031: Operand types must match  0027 89 16 000E R MOV PROD+2,DX  Bodhisatya\_exp1.asm(28): warning A4031: Operand types must match  002B A1 0000 R MOV AX,VAR1  002E 8B 16 0006 R MOV DX,VAR4  0032 CC INT 03H  0033 CODE ENDS  END START  \_Microsoft (R) Macro Assembler Version 5.00 9/23/22 15:36:21  Symbols-1  Segments and Groups:  N a m e Length Align Combine Class  CODE . . . . . . . . . . . . . . 0033 PARA NONE  DATA . . . . . . . . . . . . . . 0014 PARA NONE  Symbols:  N a m e Type Value Attr  DIFF . . . . . . . . . . . . . . L WORD 000A DATA  PROD . . . . . . . . . . . . . . L DWORD 000C DATA  QUO . . . . . . . . . . . . . . L DWORD 0010 DATA  START . . . . . . . . . . . . . L NEAR 0000 CODE  TOT . . . . . . . . . . . . . . L WORD 0008 DATA  VAR1 . . . . . . . . . . . . . . L WORD 0000 DATA  VAR2 . . . . . . . . . . . . . . L WORD 0002 DATA  VAR3 . . . . . . . . . . . . . . L WORD 0004 DATA  VAR4 . . . . . . . . . . . . . . L WORD 0006 DATA  @FILENAME . . . . . . . . . . . TEXT Bodhisatya\_exp1  33 Source Lines  33 Total Lines  13 Symbols  51108 + 465436 Bytes symbol space free  2 Warning Errors  0 Severe Errors |
| **CONCLUSION:** | Stored numbers in variables , transferred them to registers, performed operations and displayed them. |