**MICROPROCESSOR (LECTURE)**

Activity No. 2

**Assembly Language – Data Transfers,**

**Addressing, and Arithmetic**

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Score

*Submitted by:*

**Lapid, Henderson Eiann C.**

**<Saturday – 4:00 pm – 7:00 pm> / <Section | Block 2>**

*Date Submitted*

**21-10-2023**

*Submitted to:*

**Engr. Maria Rizette H. Sayo**

1. **Explain why each of the following MOV statements are invalid**

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| No description available. |

1. An immediate value “45” cannot be moved to the Data Segment (DS) register, registers and memory address are valid source operands for DS.
2. wVal to ESI is invalid due to size mismatch; wVal is defined as a 16-bit word while ESI or “Extra Segment Index” is a 32-bit register.
3. The Extended Instruction Pointer or “EIP” is primarily used as a source or pointer for instructions, using it as a destination like in the mov statement above is invalid.
4. An immediate value such as “25” cannot be used as a destination, valid destination operands are registers, memory, and memory address or location.
5. bVal to bVal2 is invalid as you cannot move memory to another memory.
6. **Show the value of each destination operand.**

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| No description available. |

* mov al,myByte AL = FFh
* mov ah,[myByte+1] AH = 00h
* dec ah AH = FFh
* inc al AL = 00h
* dec ax AX = FEFF

1. **Show the values of the destination operand, sign, zero, and carry flags.**

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| No description available. |

* add ax,1 AX = 0100h SF = 0 ZF = 0 CF = 0
* sub ax,1 AX = 00FFh SF = 0 ZF = 0 CF = 0
* ad al,1 AX = 00h SF = 0 ZF = 1 CF = 1
* mov bh,6Ch
* add bh,95h BH = 01h SF = 0 ZF = 0 CF = 1
* mov al,2
* sub al,3 AL = FFh SF = 1 ZF = 0 CF = 1

1. **Determine the value of the Overflow flag.**

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| No description available. |

* mov al,80h
* add al,92h OF = 1
* mov al,-2
* add al,+127 OF = 0

1. **Determine the value of the Carry and Overflow flags.**

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| No description available. |

* mov al,128
* neg al CF = 0 OF = 1
* mov ax,8000h
* add ax,2 CF = 0 OF = 0
* mov ax,0
* sub ax,2 CF = 1 OF = 0
* mov al,-5
* sub al,+125 CF = 0 OF = 1

1. **Determine the value of the Carry and Overflow flags.**

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| No description available. |

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| mov ax,6  mov ecx,4  L1:  inc ax  loop L1  AX = 10 | mov ecx,0    X2:  inc ax  loop X2  Loop executes 4,294,967,296 times |