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Assignment # 2
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6/10/2018

1. ADD $R1, A[$R0], @B

Ans: 1 memory read - get first operand from memory address A+R0

2 memory read - @B, Beause indireat address

1 memory write - To store to R1

So, Total 4 memory accesses.

Inital, 1000 = 18
1001 = 1
1020 = 16

Code:

```
mori  $Rs, 1                # RS ← 1
Load  $Rd, 1000($Rs)        # Rd ← 1000 + 1 = 1001 = 1 (given)
ADDI  $Rd, $zero, 1000      # Rd ← 0 + 1000
SW    0($Rd), 20            # 0 + Rd ← 20
```

So, After excution, memory location 1001 has value $\boxed{1}$
memory location 1000 has value $\boxed{20}$

No change in; memory location 1020 has value $\boxed{16}$

3. One addressing machine :

- Location 20 contains 40
- location 30 contains 50
- Location 50 contains 30

(a) load Immediate 20 : li 20 ⇒ $\boxed{20}$

(b) Load memory direct 20 : LOAD (20) ⇒ $\boxed{40}$

(c) Load memory Indirect 30 : LOAD @(30) ⇒ $\boxed{30}$

Addressing mode of stack code :

```
.data
    newline: .asciiz "\n"
.text
    main:
        li $s0, 10   # immtdiate addressing
        jal increasemyRegister # Target addressing
        jal print # Target addressing
       # This signals the end of the program
       li $v0, 10 # immidiate addressing
       syscall    # indirect addressing
increasemyRegister:
        addi $sp, $sp. -8 # immidiate addressing
        sw $S0, 0($sp)# indexed addressing
        sw $ra, 4($sp)# indexed addressing
        addi $S0, $0, 30 # immidiate addressing
        jr $ra          # register addressing

print:
        li $v0, 1 # immediate addressing
        more $a0, $s0 # register addressing
        syscall   # indirect addressing
        jr $ra # register addressing
```