

Name: KEY

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COE 205, Term 052
Computer Organization & Assembly Programming
Quiz# 4

Date: Saturday, April 8, 2006

Q1. Suppose that you have an array of **10** bytes as defined below:

Array DB 1, 20, 15, 4, -6, 22, -50 99, 100, -10

You are required to write a program to do the following:

- (i) Compute the square of each number in the array and store the result in another array called SQArray.
- (ii) Compute the result of dividing each number by 3 and store the Quotients in QArray and the remainders in RArray.

```
.model small
.stack 100h
.data
    Array DB 1, 20, 15, 4, -6, 22, -50 99, 100, -10
    SQArray DW 10 DUP(?)
    QArray DB 10 DUP(?)
    RArray DB 10 DUP(?)
.586
.code
.Startup

    MOV CX, 10
    XOR ESI, ESI

Next: MOV AL, Array[ESI]      ; getting a number from the array
      MOV BL, AL
      IMUL AL                ; compute the square of a number
      MOV SQArray[ESI], AX  ; store the square
      MOVZX AX, BL          ; get the number to be divided
      MOV BL, 3
      IDIV BL                ; perform division by 3
      MOV Rarray[ESI], AH   ; store the remainder
      MOV Qarray[ESI], AL   ; store the quotient
      INC ESI
      LOOP Next

.EXIT
END
```