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TOPIC: MP EXPERIMENT 3:

WLAP to perform

a. To count even and odd numbers from an array of 10 numbers
b. To find average of 10 numbers

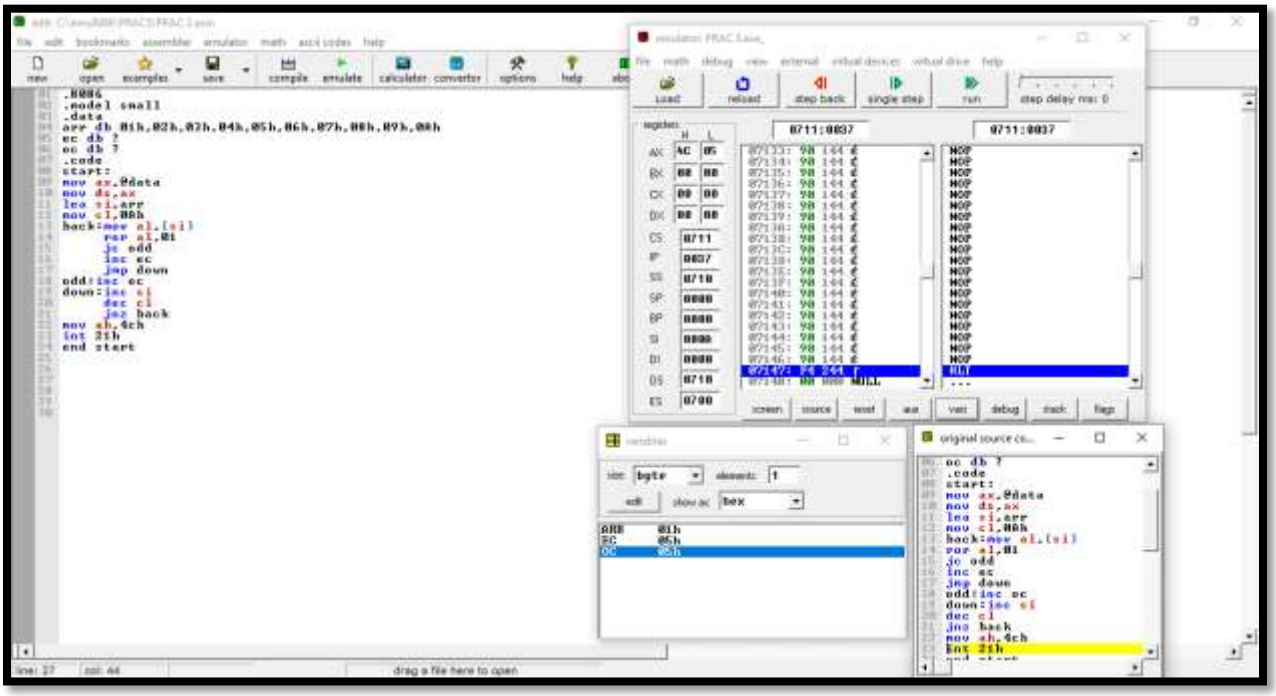
A.] To count even and odd numbers from an array of 10 numbers

CODE:

```
.8086
.model small
.data
arr db 01h,02h,03h,04h,05h,06h,07h,08h,09h,0Ah
ec db ?
oc db ?
.code
start:
mov ax,@data
mov ds,ax
lea si,arr
mov cl,0Ah
back:mov al,[si]
    ror al,01
    jc odd
    inc ec
    jmp down
odd:inc oc
down:inc si
    dec cl
```

```
    jnz back
mov ah,4ch
int 21h
end start
```

OUTPUT:



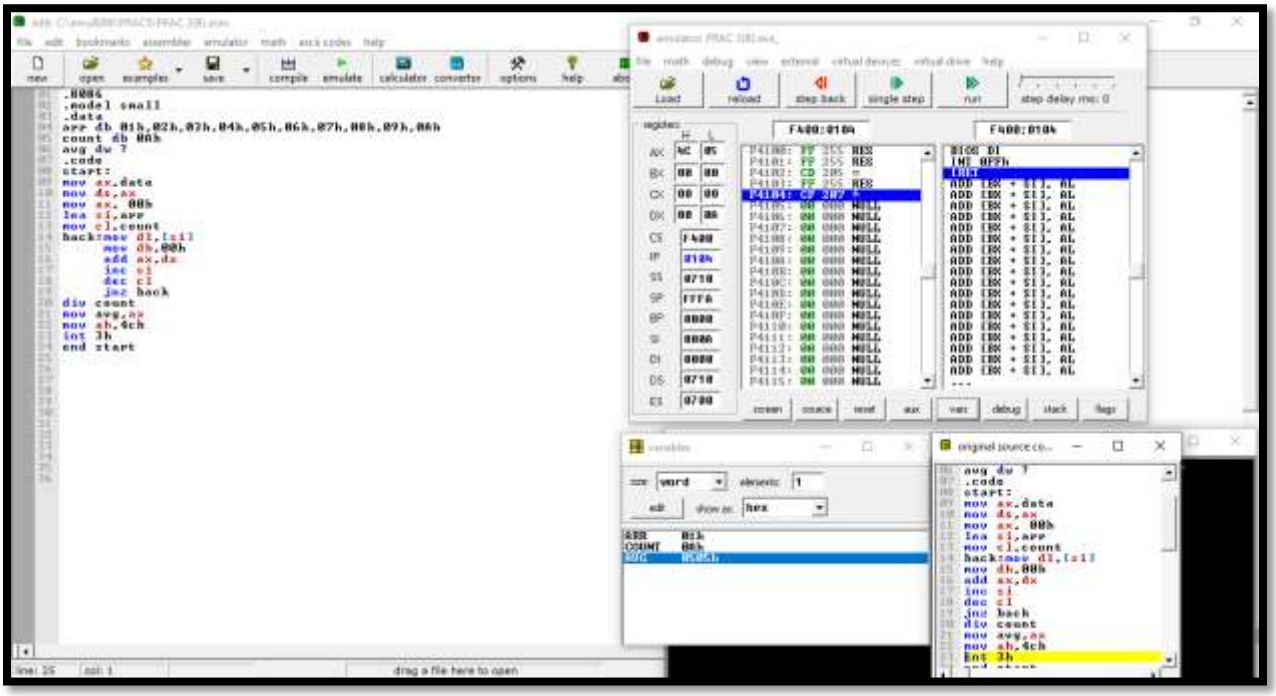
B.] To find average of 10 numbers

CODE:

```
.8086
.model small
.data
arr db 01h,02h,03h,04h,05h,06h,07h,08h,09h,0Ah
count db 0Ah
avg dw ?
.code
start:
mov ax,data
mov ds,ax
mov ax, 00h
lea si,arr
mov cl,count
back:mov dl,[si]
    mov dh,00h
    add ax,dx
    inc si
    dec cl
    jnz back
div count
```

```
mov avg,ax
mov ah,4ch
int 3h
end start
```

OUTPUT:



POSTLAB QUESTIONS:

1. Explain Processor control instructions.

ANS: The Processor control instructions are used to control the processor action by setting / resetting the flag values.

These are the process / processor control instructions.

1) STC - Used to set carry flag CY to 1

2) CLC - Used to clear / reset carry flag CY to 0

3) CMC - Used to put complement at the state of carey flag CY.

4) STD - Used to set the direction flag DF to 1

5) CLD - Used to clear / reset the direction flag DF to 0

6) STI - Used to set the interupt enable flag to 1, i.e, enable INTR input.

7) CLI - Used to clear the interupt enable flag to 0, i.e, disable INTR input.

2. Describe the difference between shift and rotate instruction with appropriate example.

ANS:

There is only really one difference between the shift and rotate instructions: rotate cycles the bits around going out one side and coming in the other, while shift rotates the bits out one side or the other leaving the space where the rotated bits where either unchanged or zeroed.

A rotate instruction is a closed loop instruction. That is, the data moved out at one end is put back in at the other end. The shift instruction loses the data that is moved out of the last bit locations.