

NAME: _____

STD.: _____

DIV.: _____

DATE: _____

PAGE: _____

32

EXPERIMENT No - ~~05~~ 06

DATE: 29/4/2022

ROLL No: 5139

AIM: To separate even and odd numbers from a given array

THEORY:

PROGRAM 1:

WAP to separate even and odd numbers from given array.

ALGORITHM

- i) Initialize the data segment
- ii) Initialize the number of elements counter and the pointer
- iii) Create separate arrays for even and odd
- iv) Check the elements. Divide the element by 2 if the remainder is 0, append that element into even array else if remainder is 1, append that element into odd array
- v) Increment the pointer
- vi) Decrement the number of elements counter
- vii) If count = 0? Then Stop else go to step II
- viii) Print the odd and even array separately.

PROGRAM

.model small

.data

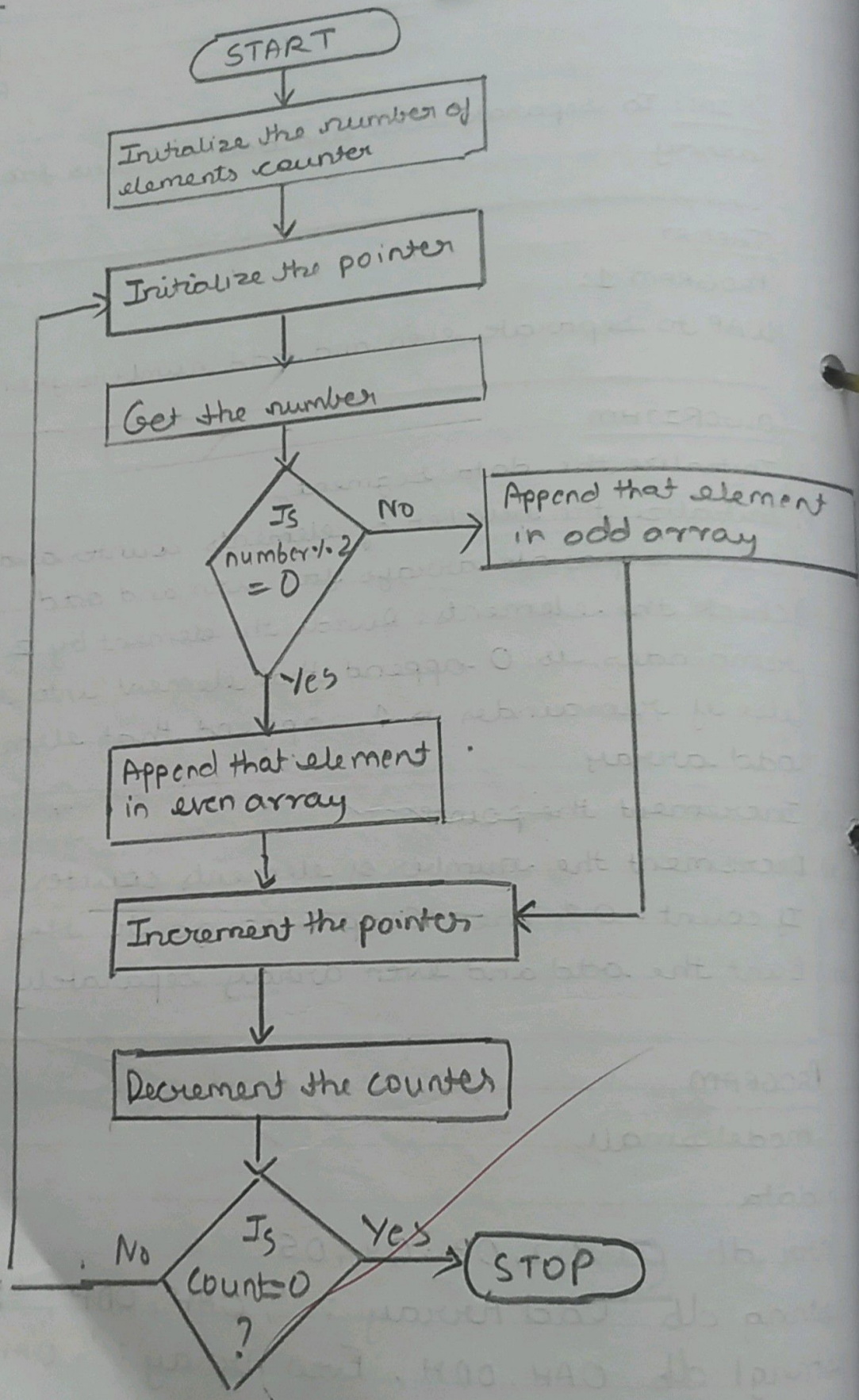
arr1 db 01,02,03,04,05

string db 'Odd Array : ', 0AH, 0DH, '\$'

string1 db 0AH, 0DH, 'Even Array : ', 0AH, 0DH, '\$'

arr2 db 03 dup(?)

FLOWCHART



arr3 db 02 dup(?)

code

mov ax, @data

mov ds, ax

lea si, arr

lea di, arr2

lea dx, string

mov ch, 05h

mov ax, 0000h

back: mov bl, [si]

mov al, bl

mov cl, 02h

div cl

cmp ah, 00h

jz down

mov [di], bl

inc di

down: inc si

dec dh

jmp back

lea di, arr3

lea si, arr

back2: mov bl, [si]

mov al, bl

mov cl, 02h

div cl

cmp ah, 00h

jmp down1

mov [di], bl

inc di

STEPS TO DISPLAY OUTPUT

```
C:\> tasm filename.asm  
C:\> tlink filename.obj  
C:\> filename
```

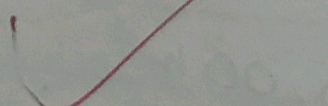
OUTPUT

Odd Array:

01 03 05

Even Array:

02 04



```
down1:  inc si
        dec dh
        jnz back2
        lea di, arr2
        mov ah, 09h
        int 21h
        mov dh, 03h
        lea di, arr2
```

```
back1:  mov al, [di]
        inc di
        mov ch, 02h
        mov cl, 04h
        mov bh, al
```

```
i2:     ror bh, cl
        mov dl, bh
        and dl, 0fh
        cmp dl, 09h
        jbe i4
        add dl, 07h
```

```
i4:     add dl, 30h
        mov ah, 02h
        int 21h
        dec ch
        jnz i2
        mov dl, ' '
        mov ah, 02h
        int 21h
        dec dh
        jnz back1
        lea di, arr3
```

```
lea dx, string1
mov ah, 09h
int 21h
mov dh, 02h
```

```
back5: mov al, [di]
```

```
inc di
```

```
mov ch, 02h
```

```
mov cl, 04h
```

```
mov bh, al
```

```
i5:
```

```
mov bh, cl
```

```
mov dl, bh
```

```
and dl, 0fh
```

```
cmp dl, 09h
```

```
jbe i6
```

```
add dl, 07h
```

```
i6:
```

```
add dl, 30h
```

```
mov ah, 02h
```

```
int 21h
```

```
dec ch
```

```
jnz i5
```

```
mov dl, ''
```

```
mov ah, 02h
```

```
int 21h
```

```
dec dh
```

```
jnz back5
```

```
mov ah, 4ch
```

```
int 21h
```

```
end.
```

NAME: _____

STD.: _____

DIV.: _____

DATE: _____

PAGE: _____

36

CONCLUSION

Hence, we separated even and odd numbers from a given array into two separate arrays.

Islam
6/5/22