7/03/23

Assignment : 16 (Form) — Vinayak Sir

Topic : Pointer

1) Sum of numbers memory diagram :

Eg: a=10, b=15; Sum=0

Suppose :

```
void main()
{
    *Sum = *a + *b;
}
```

Here

*a = value at address in a (200) = 10

∴ *a = 10

&

Similarly *b = 15

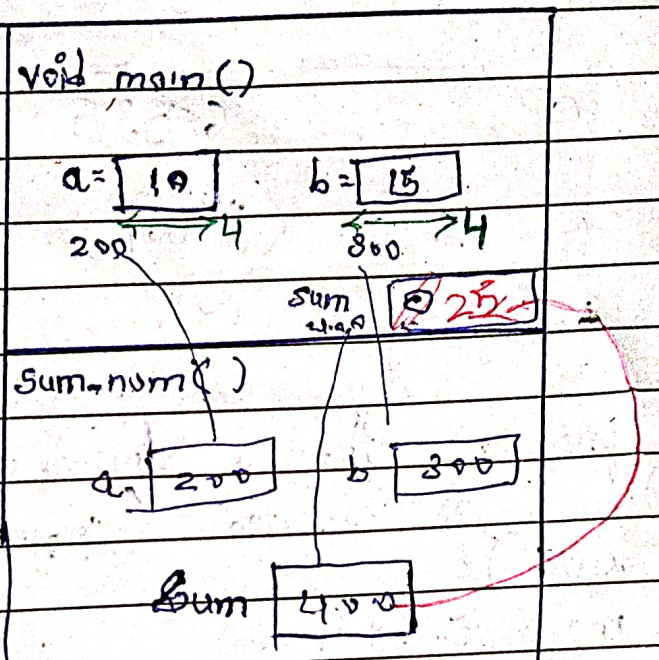
Now,

for *Sum = It is left side so, = *a + *b

= value at address in Sum (400)

= 10 + 15

= 25



At address 400 give value 25

2) Sum of digits

Eg:

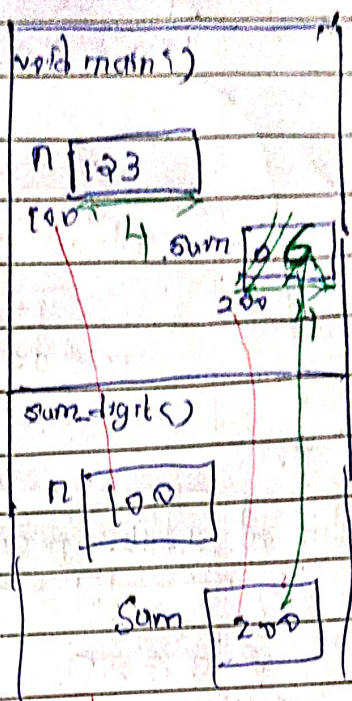
for n = 123 & initializing sum = 0.

Sending address of n & also sum to sum_digit function.

So

for Algorithm of summing of digit we write

```
for (; *n>0; *n=*n/10)
{
    r=(*n)%10;
    *sum=(*sum)+r;
}
```



Here *sum = (*sum) + r;

value at address in sum 200 + remainder value.

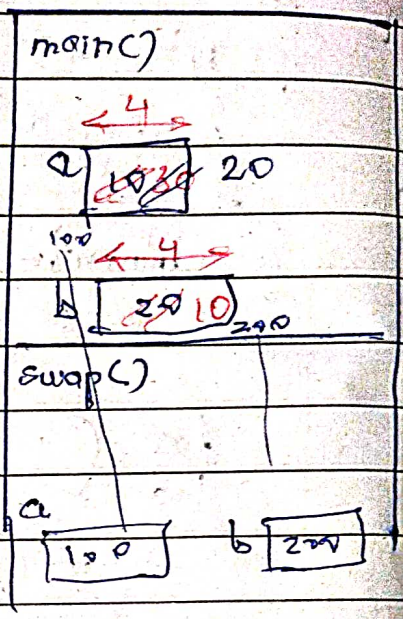
value at address in sum 200

6

means value at 200 address is 6

3) Swapping

Suppose a = 10
b = 20



for
*a = *a + *b ;

value at address in a
100
10
i.e *a = 10

value at address in b
200
20
i.e *b = 20

= *a + *b = 30

value at address in a
100

i.e
*a = 30

Than
*b = *a - *b

So Similary
*b = 30 - 20

i.e *b = 10 → means value at address in b = 10
200

leftside only box

&
*a = *a - *b
*a = 30 - 10

ie *a = 20 → means value at address in a = 20
100