# Let’s solve it

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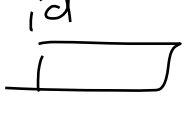
## Rules for initializing

→ We can NOT initialize individual members inside the structure template ( blueprint/plan of a building )

```
struct student
{
    int id = 5; // Not allowed ; syntax error;
    char name[10];
};
```

struct student S1, S2, S3;

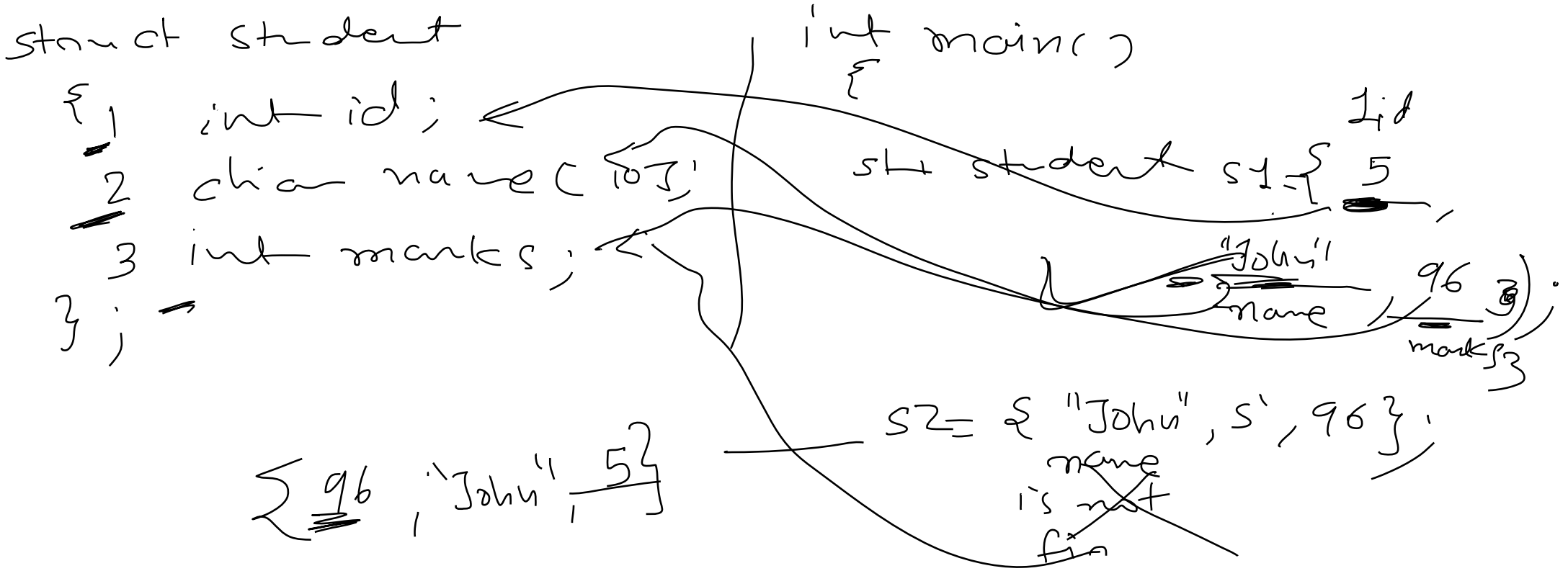







garbage

- The order (sequence) of values enclosed in braces must match the order of members in the structure definition/template.



- It is permitted to have a partial initialization. We can initialize only the first few members and leave the remaining blank.

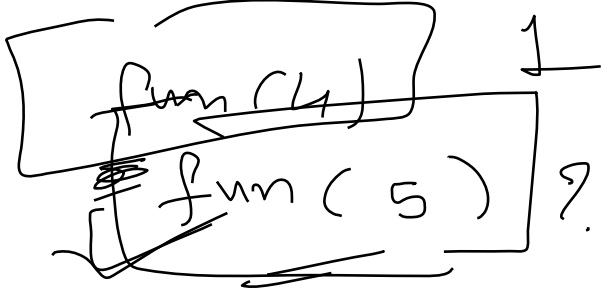
```
s1 — student s1 = {5};

                = {5, "John"};

                = {"John", 99}; X
```

P.S. You may change the entries into structure template.

- The uninitialized members will be assigned default values as below:
  - Zero for integer & floating (numbers)
  - NULL '\0' for characters and strings.

Qn recursion

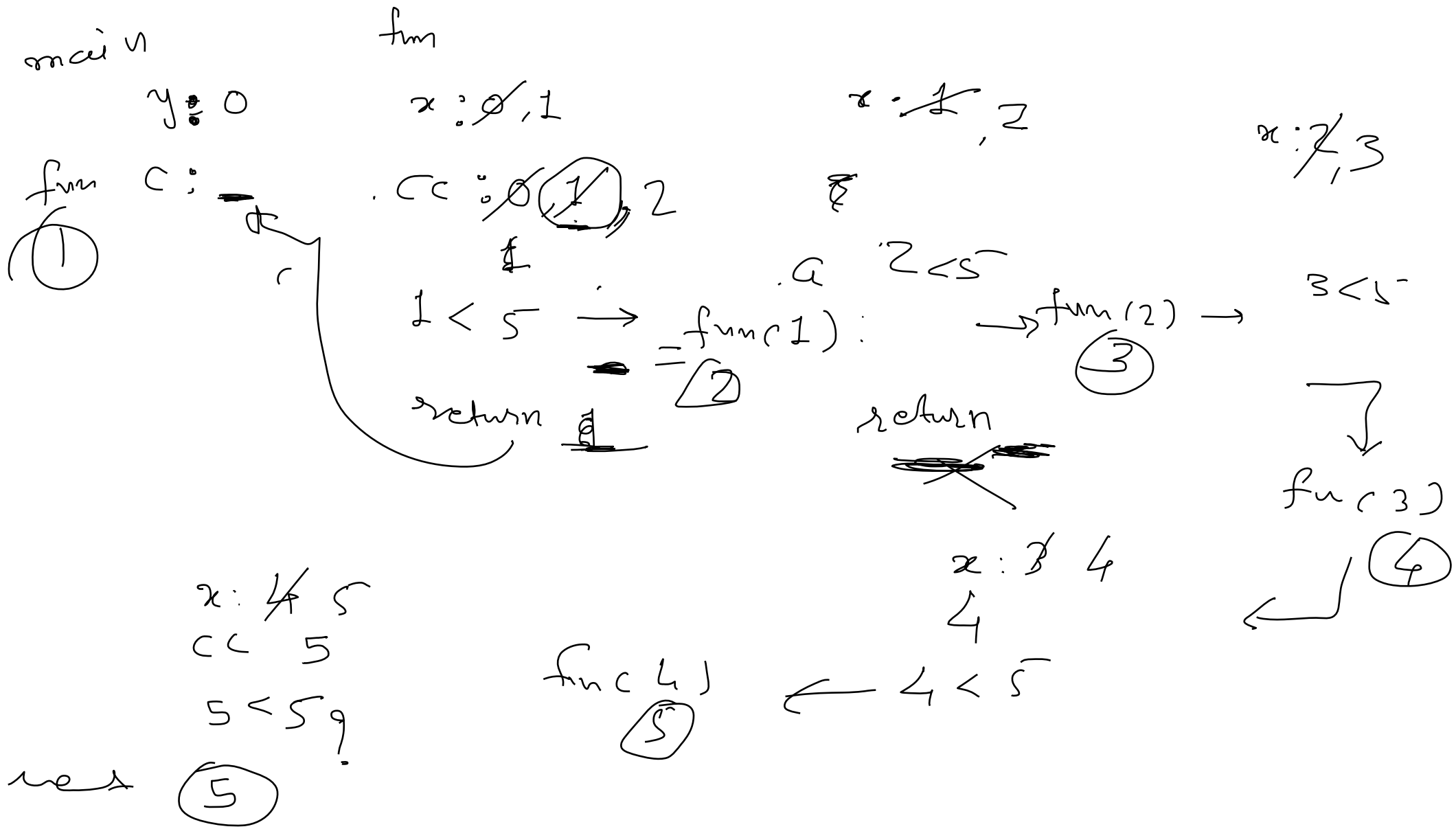
```
int fun(int x)
{
    static int cc = 0;
    cc++;
    x++; // 4
    if(x < 5) // 1<5
    {
        fun(x); } // 4
        //fun(1);   b
        //fun(x)    c
    }
    return cc;
}
```

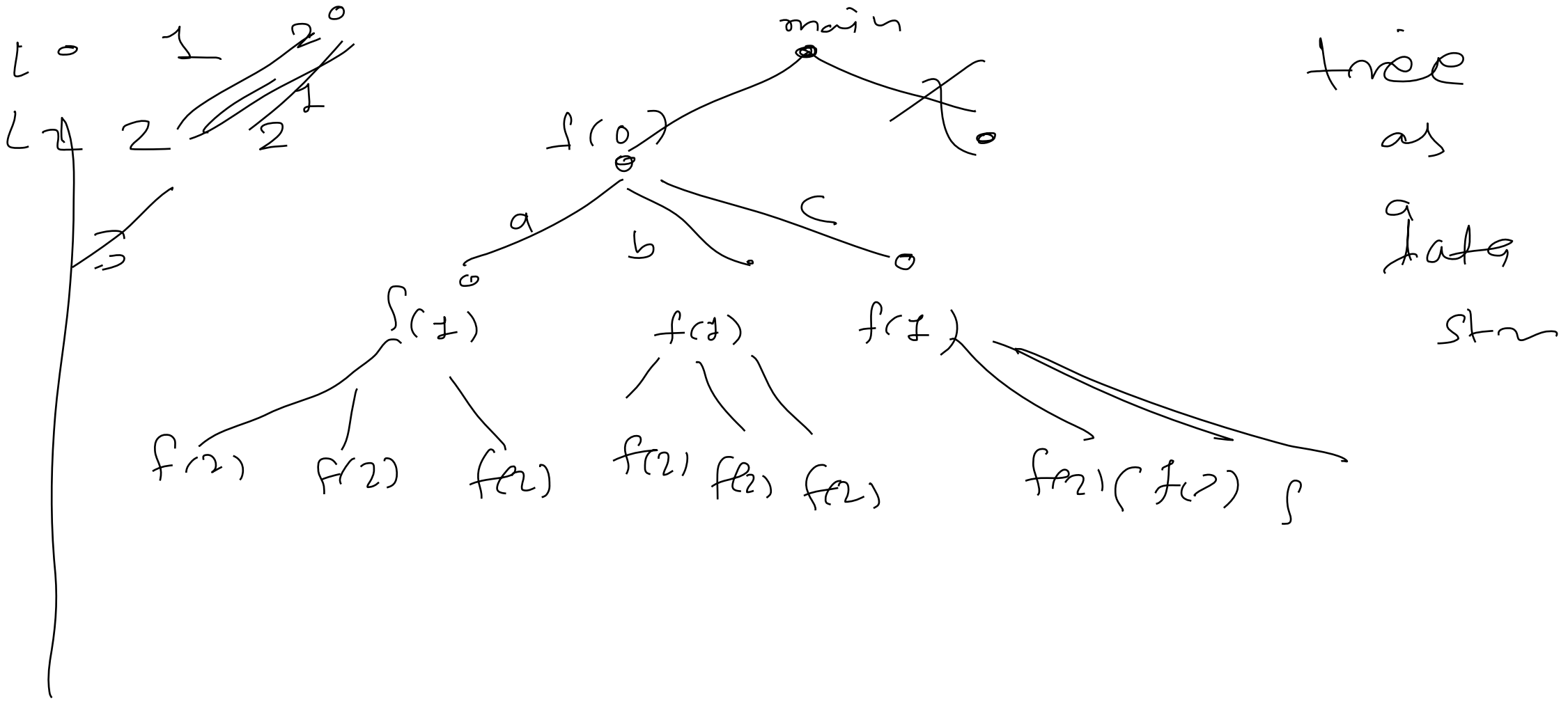



```
fun(3);
int main()
{
    int y=0;
    int c = fun(y); main call
    printf("%d", c);
    return(0);
}
```

Program counter register

microprocessor.


main
y: 0
fun c:
1
fun
x: 0, 1
cc: 0 1 2
1 < 5
return 1
fun(1)
2
x: 1, 2
2 < 5
fun(2)
3
x: 2, 3
3 < 5
fun(3)
4
x: 3 4
4
4 < 5
fun(4)
5
x: 4 5
cc 5
5 < 5 ?
res
5


main
f(0)
a
b
c
f(1)
f(1)
f(1)
f(2)
f(2)
f(2)
f(2)
f(2)
f(2)
fact(f(2))
tree
as
data
str