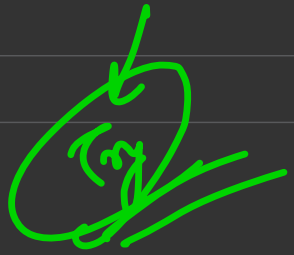
We will start at 12:36

Advance C++ concepts → OOP
→ memory optimization
→ STL and its behind work
→ problem solving

(1 class → atleast [new this])



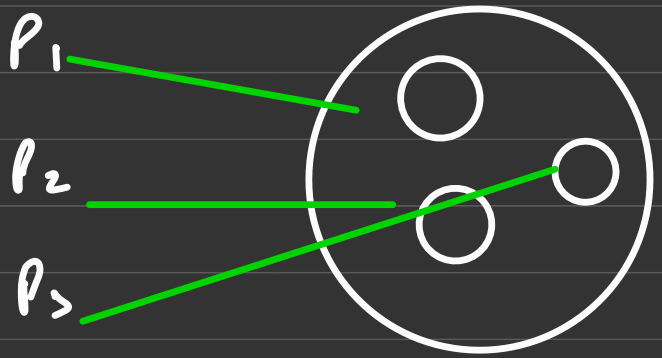
Introducing Memory Management

6.5 / 10

Program

16gb

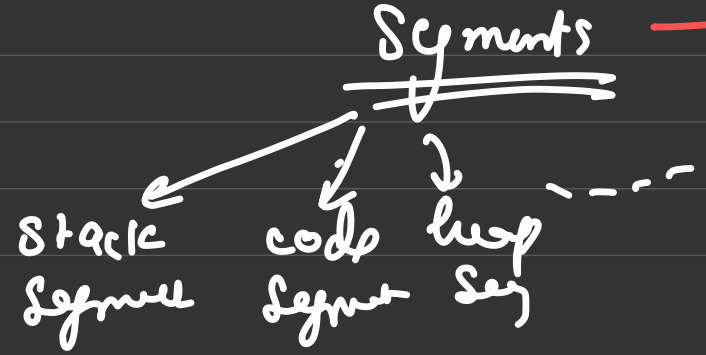
Process



I have a part of memory for my process

#C++

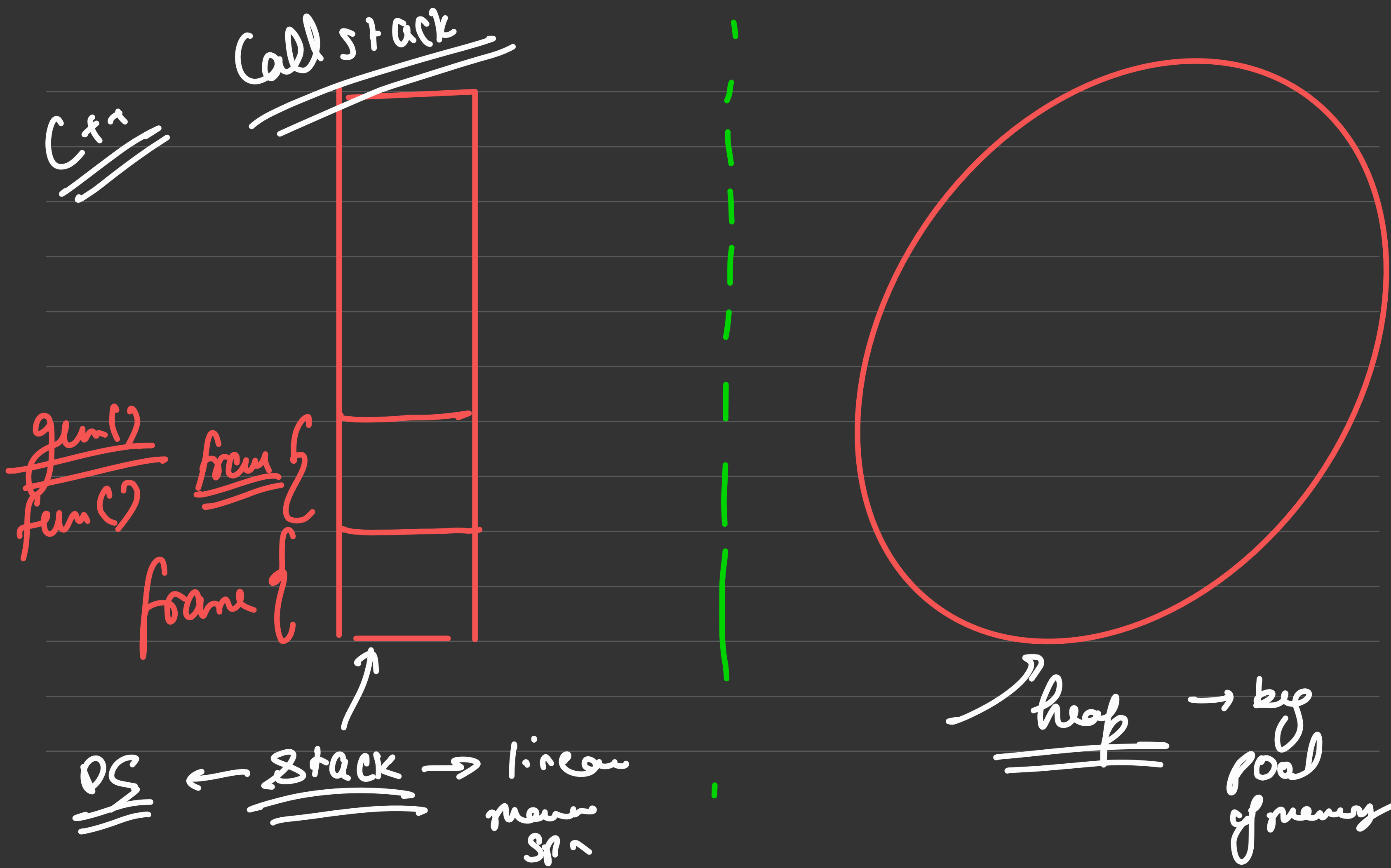
→ The memory allocated to your process is divided into multiple sections.



→ Microprocessor & Microcontroller

↓

operating system



C++
Call stack
fun()
frame
frame
OS
stack
linear
heap
big pool of memory

→ Stacks → (1) Linear Space of memory

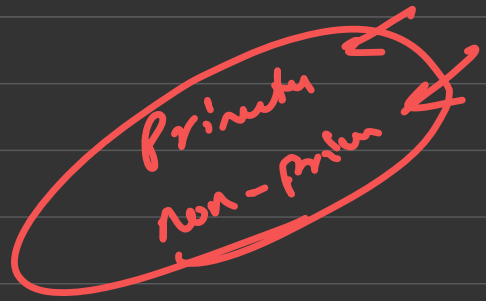
(2) LIFO

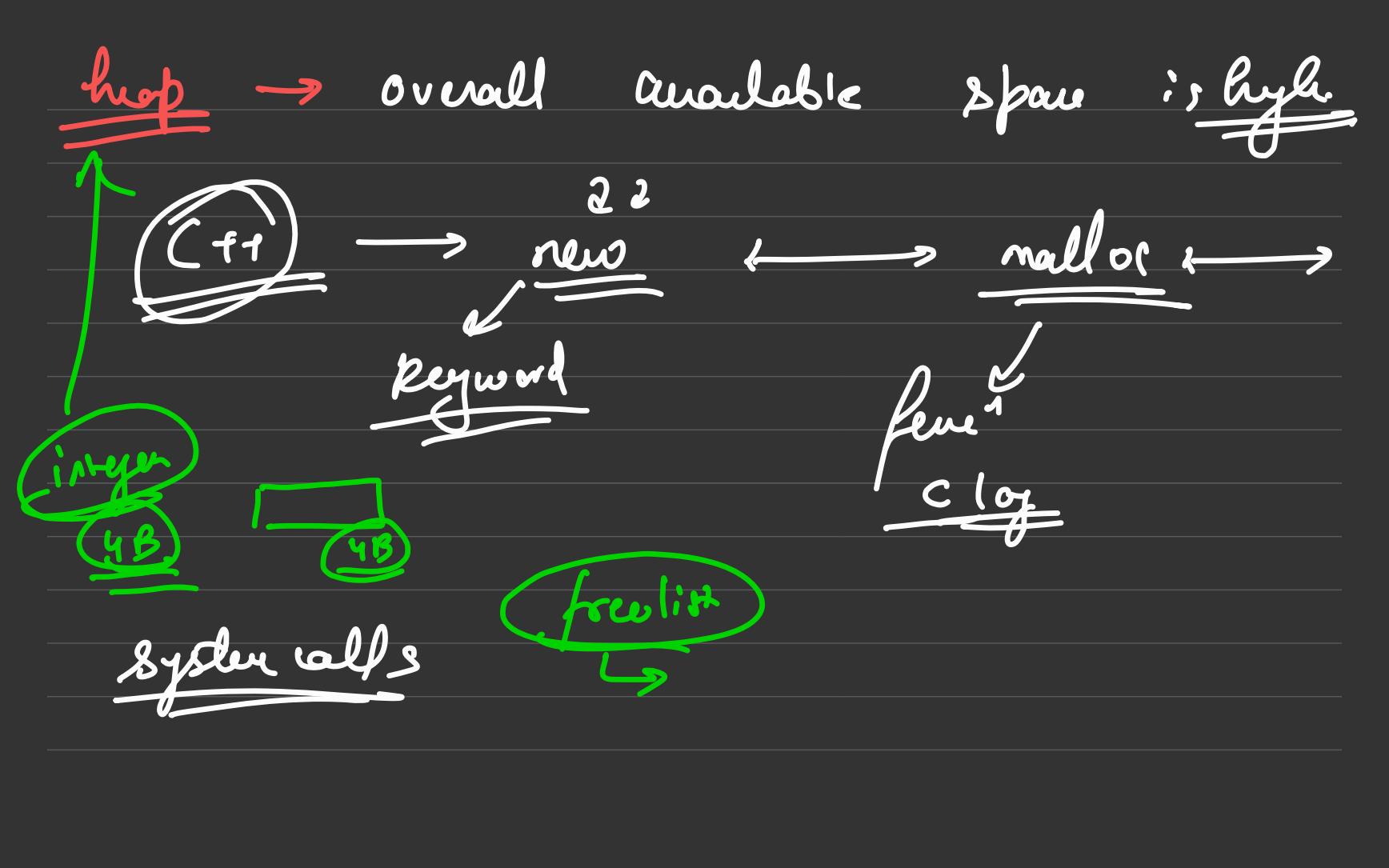
(3) A stack can have multiple Stack frames. Stack frame in memory refers to a block of area blocked by a function call.

When we call a func^n one stack frame is added in the stack.

→ heaps → It is a big (very big) pool of memory.

→ It supports random allocation




heap → overall available space is high
C++
new
22
keyword
malloc
free
clog
integer
4B
4B
system calls
freelist

Stacks → manipulate stack pointer

heaps → if you've allocated memory in heap, you can access it via a pointer only in cpp.

int x = 10;

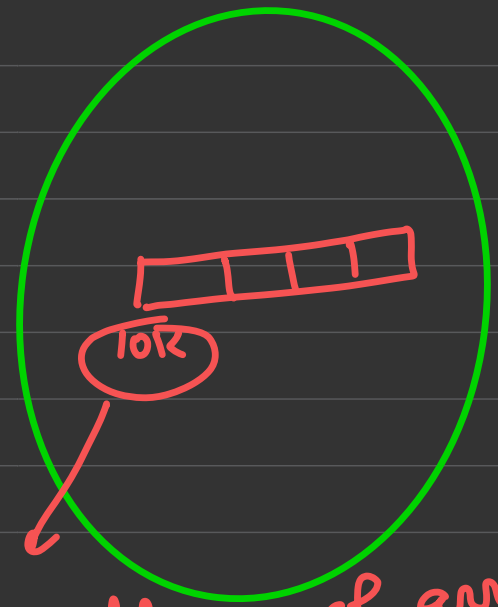
C++ → new
→ delete

<datatype *> <name> = new <datatype>;

#new

How to initialize array in heap <:

<datatype *> <name> = new <datatype>



Base address of array


```
int * x = new int;
int * arr = new int[2];
```

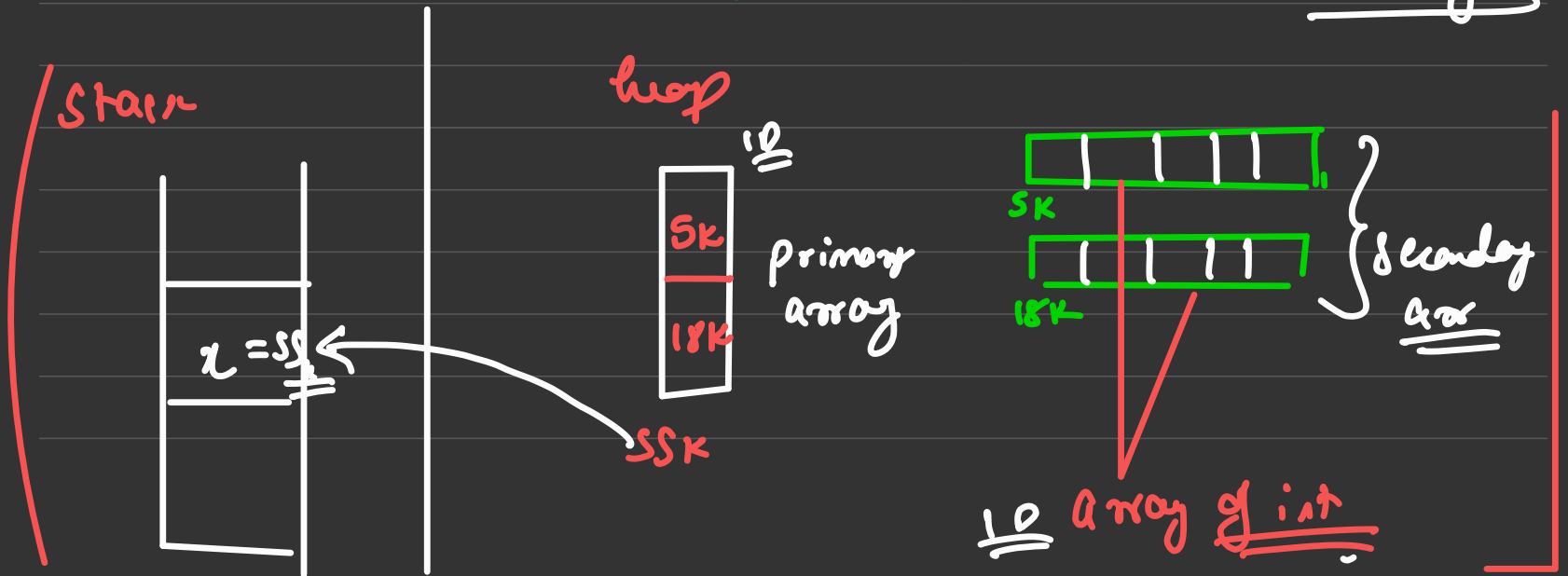
How 2D array is created in heap ??

int[][]

```
int x[2][5];
```

→ 2D array → Stack → row major
→ col major

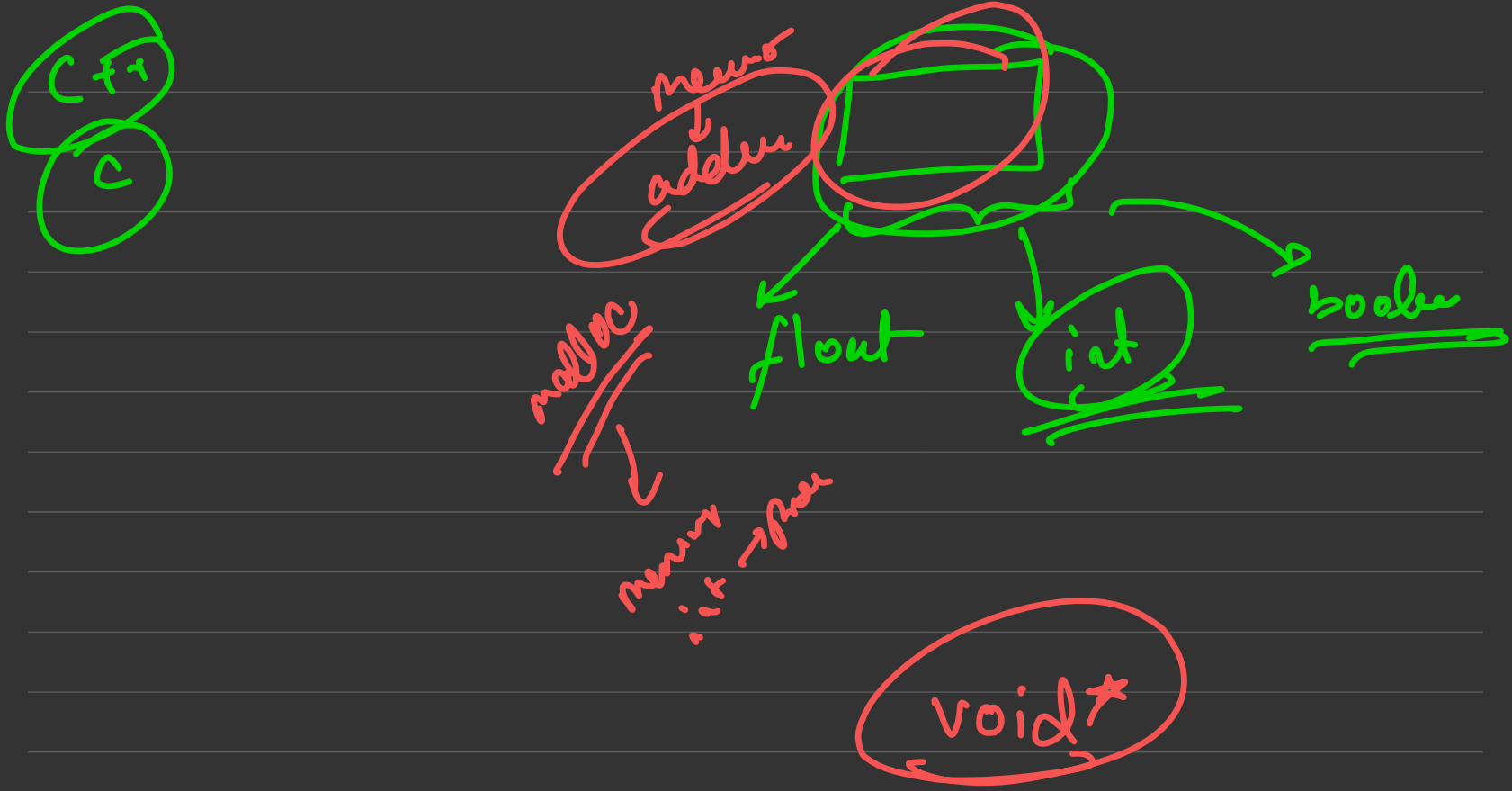
```
int** x = new int*[2];
```



<Datatype**> <name> = new <datatype>

int** x = new int*[];

array of int pointer


C++
C
memset
addem
malloc
flout
int
boolee
memset
void*