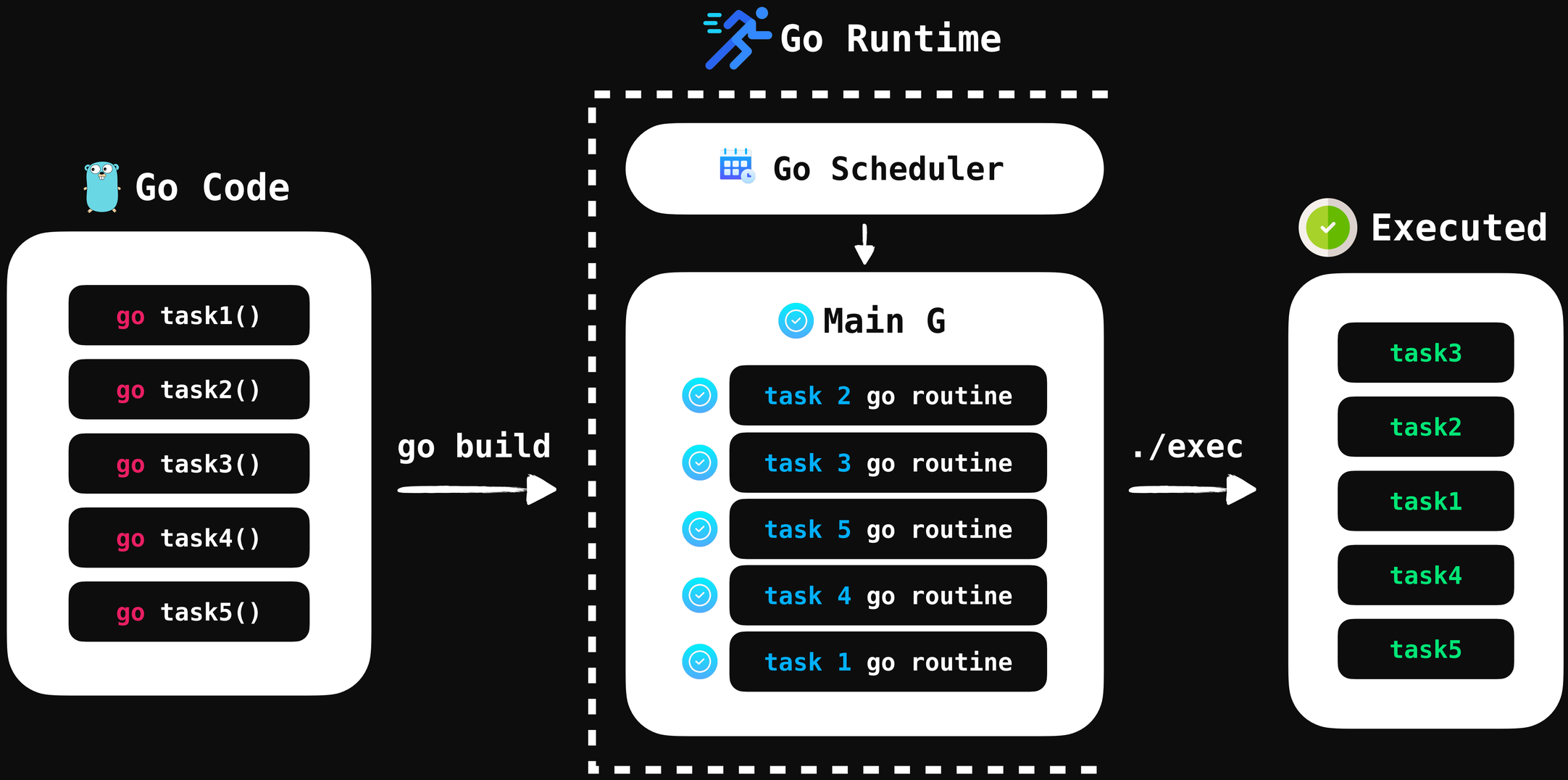
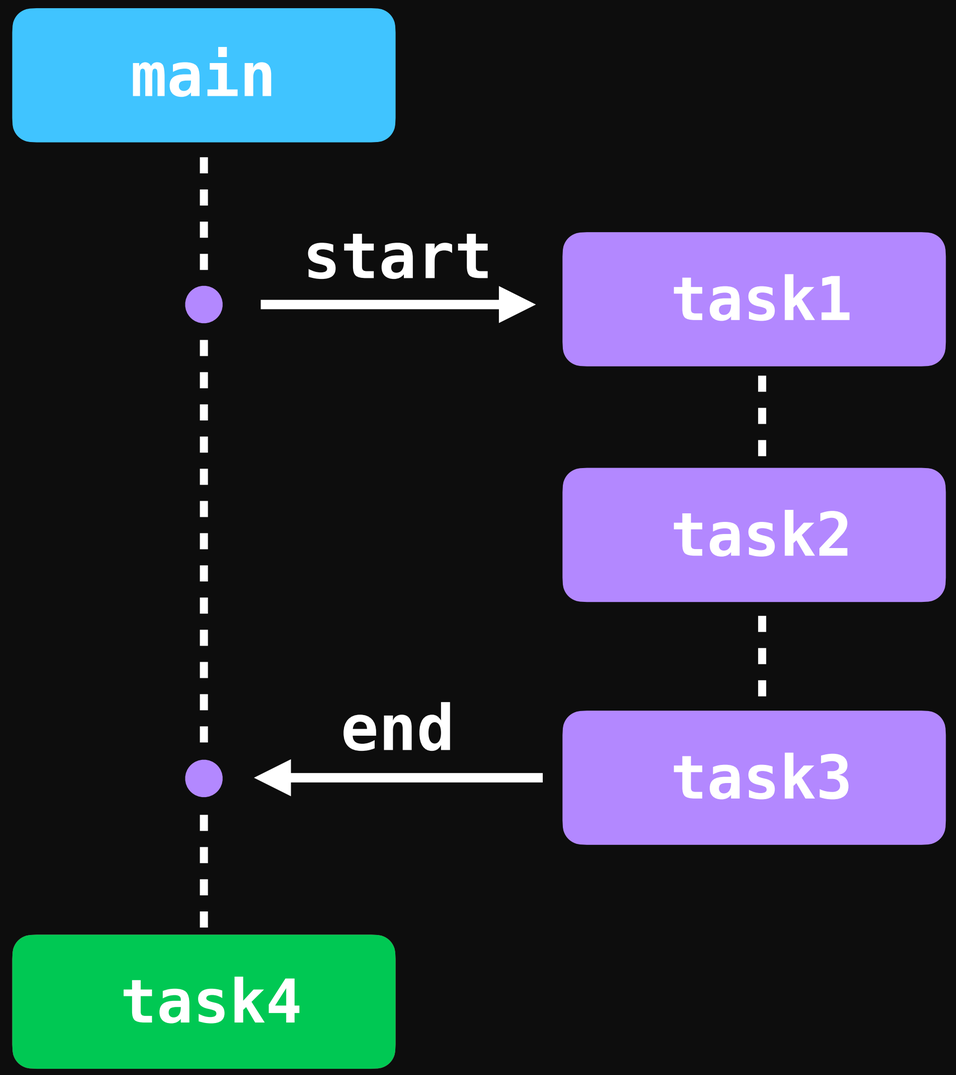
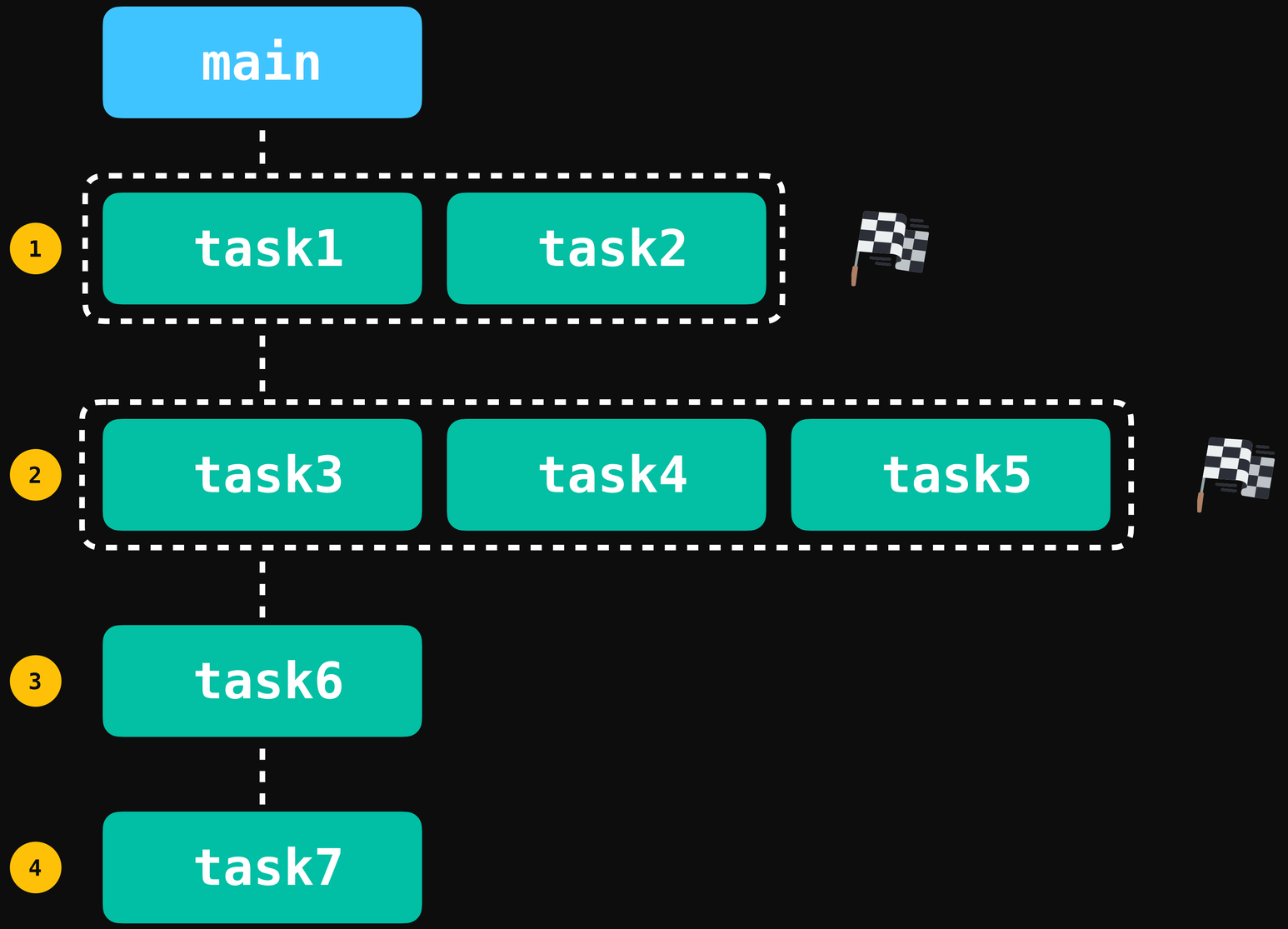
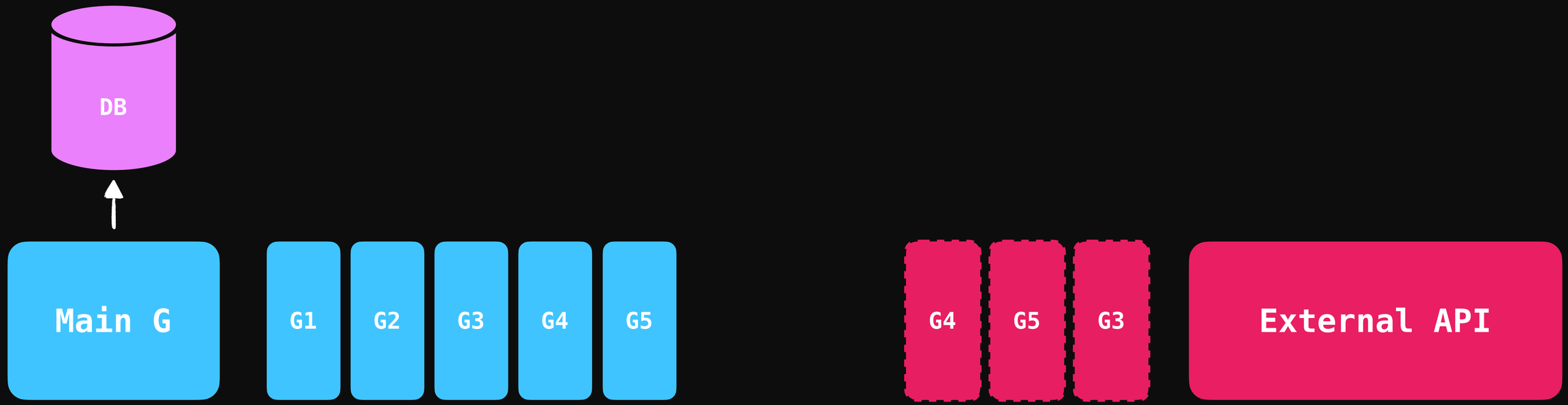
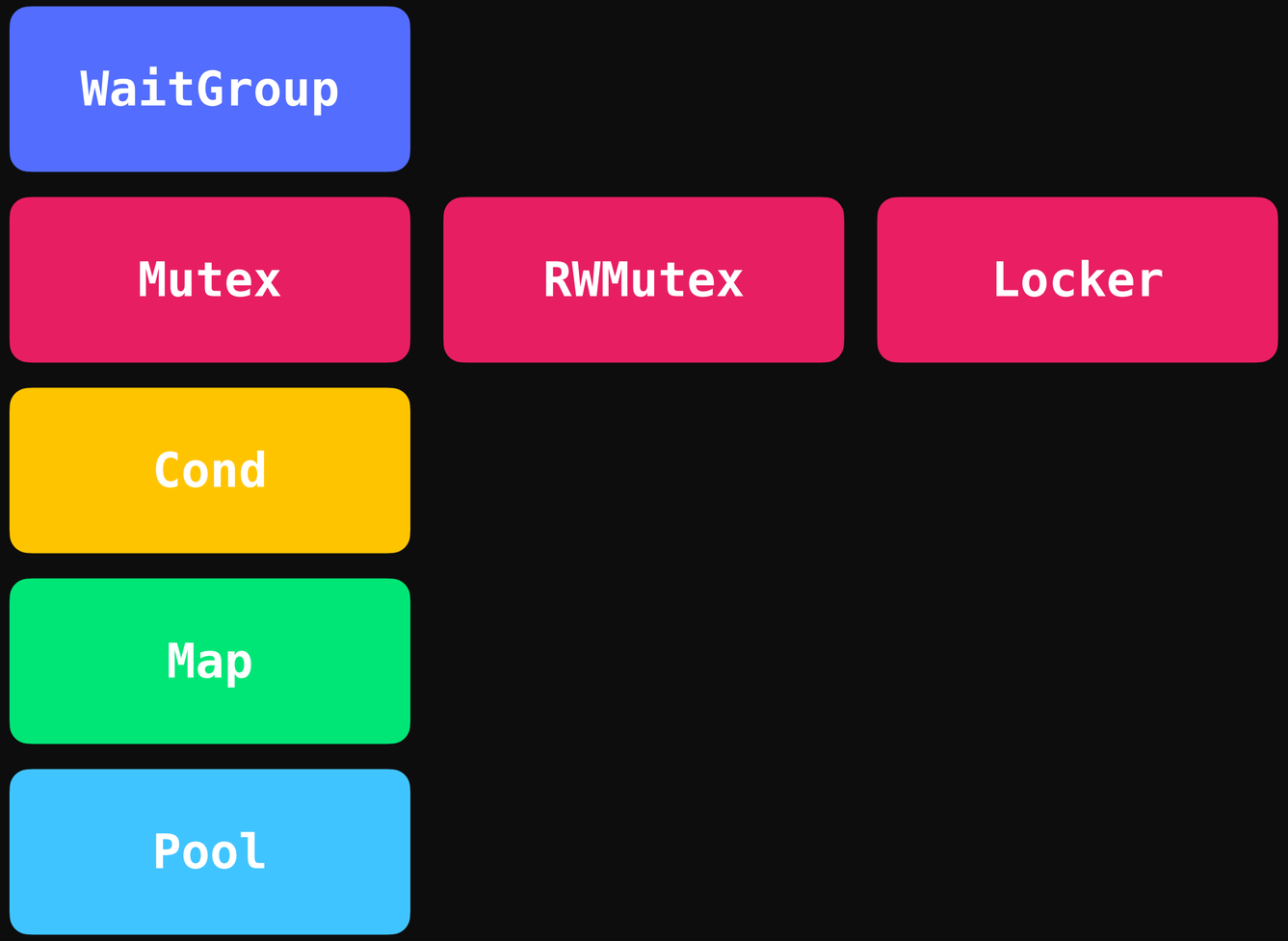

Go Runtime
Go Code
go task1()
go task2()
go task3()
go task4()
go task5()
go build
Go Scheduler
Main G
task 2 go routine
task 3 go routine
task 5 go routine
task 4 go routine
task 1 go routine
./exec
Executed
task3
task2
task1
task4
task5


main
start
task1
task2
end
task3
task4


main
1
task1
task2
2
task3
task4
task5
3
task6
4
task7


DB
Main G
G1
G2
G3
G4
G5
G4
G5
G3
External API


WaitGroup
Mutex
RWMutex
Locker
Cond
Map
Pool

i++

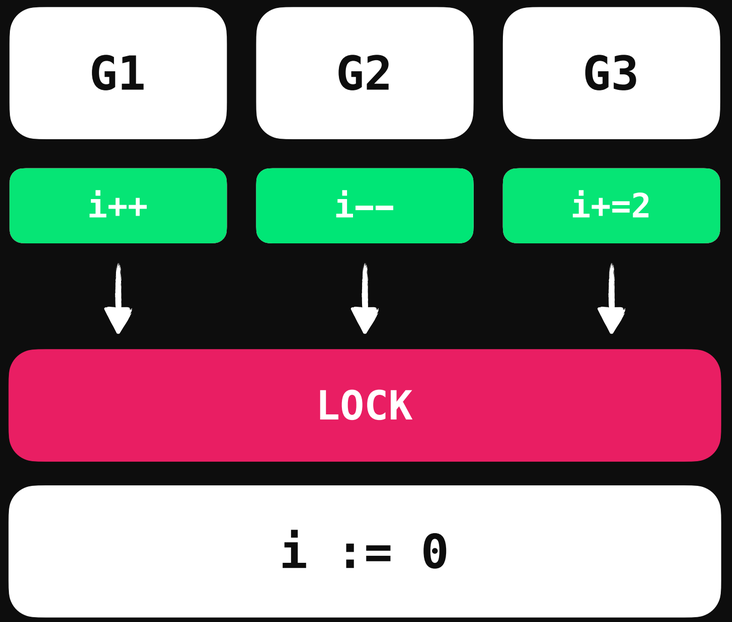
get value of **i**

increment value of **i**

store value of **i**

INDIVISIBLE

UNINTERRUPTIBLE



i: -1

i: 0

i: 2

WaitGroup

count int

Add(int) — Increment wg.counter

Done() — Decrement wg.counter

Wait() — Exit when wg.counter == 0

Done() MUST be called as many times as **Add()**

Done() more than **Add()** => **panic**

Done() less than **Add()** => **deadlock**

Calling **Wait()** without **Add()** => **return immediately**

Prefer **Add(n)** vs **Add(1)** multiple times

WaitGroup MUST be passed by **reference**

Reusing WaitGroup before previous **Wait()** returns => **panic**