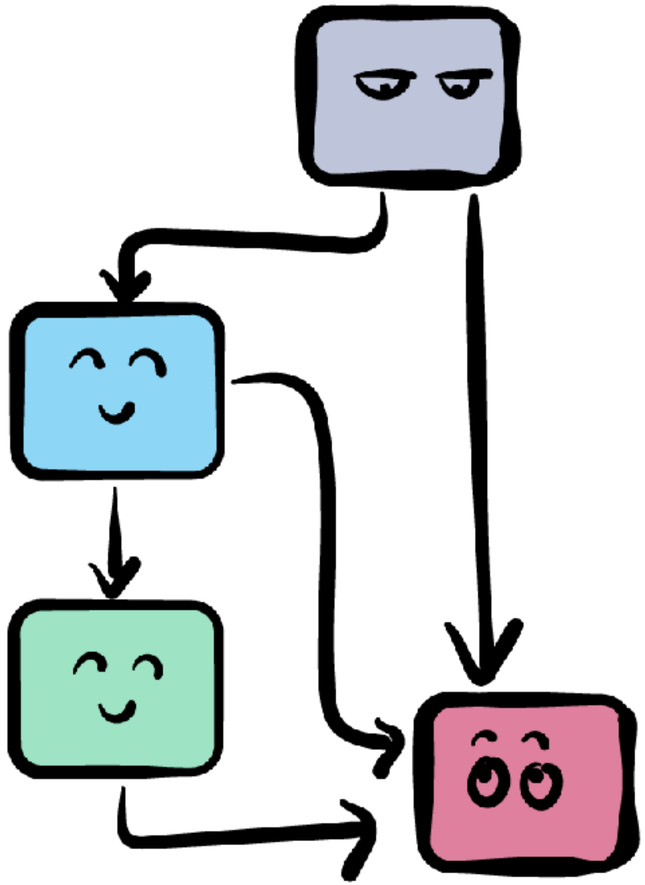
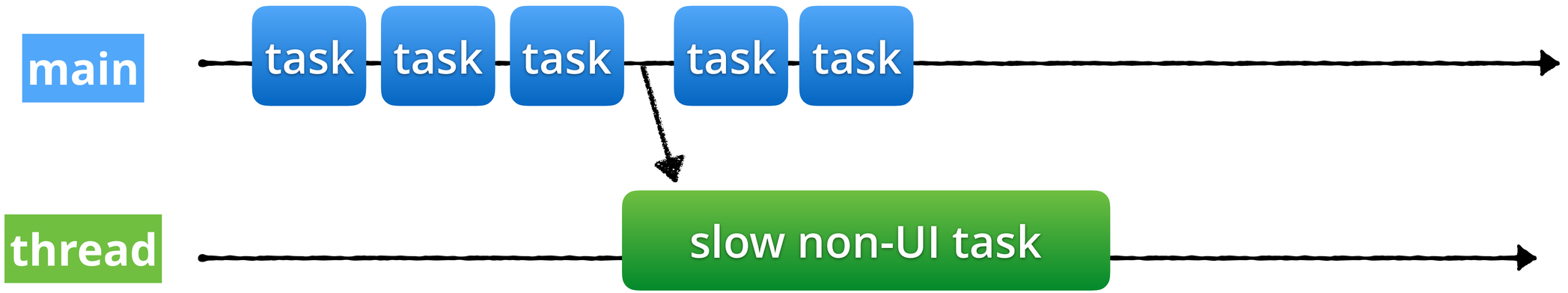
iOS Concurrency with GCD & Operations



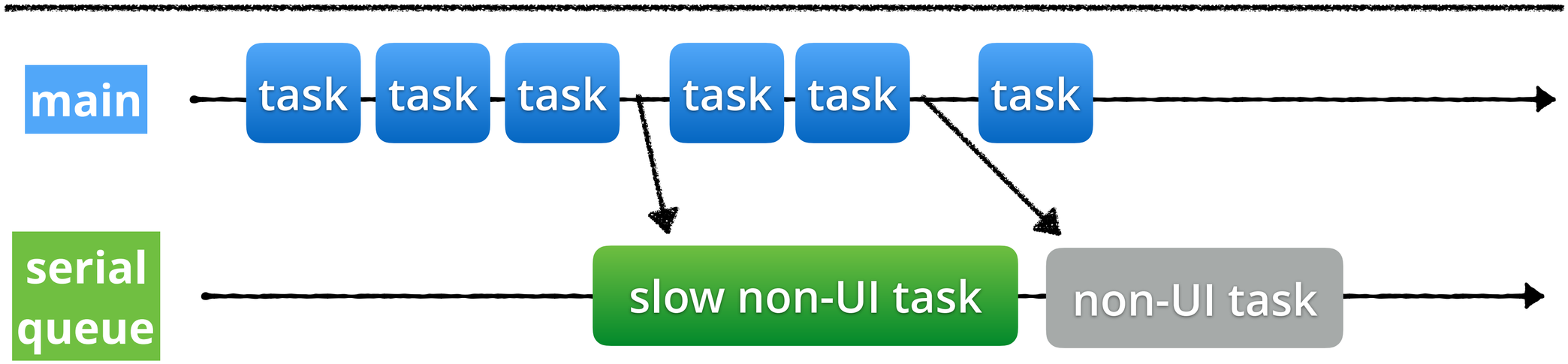
Part 2: Terminology

Synchronous

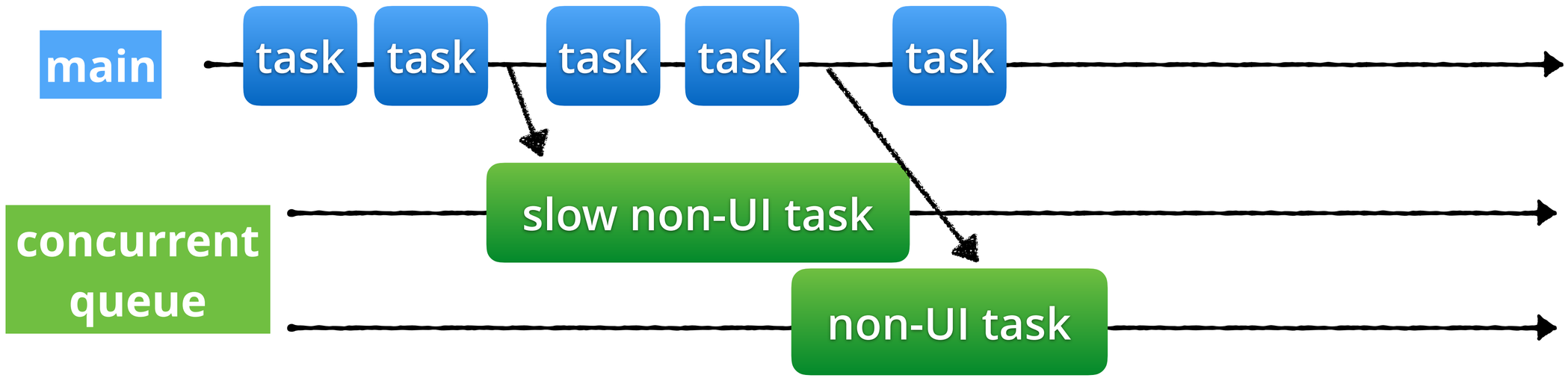
Asynchronous



Serial Queue



Concurrent Queue



GCD Queues

```
let mainQ = DispatchQueue.main

let mySerialQ = DispatchQueue(label: "com.raywenderlich.serial")
let workerQ = DispatchQueue(label: “com.raywenderlich.worker",
  attributes: .concurrent)
```

```
DispatchQueue.global(qos: .userInteractive)
DispatchQueue.global(qos: .userInitiated)
DispatchQueue.global()  // .default qos
DispatchQueue.global(qos: .utility)
DispatchQueue.global(qos: .background)
DispatchQueue.global(qos: .unspecified)
```

Dispatching Tasks to a Queue

```
DispatchQueue.global().async {
  // do expensive synchronous task
  DispatchQueue.main.async {
    // update UI when task finishes
  }
}
```

```
private let internalQueue = DispatchQueue(label:
  "com.raywenderlich.person.internal")
var name: String {
  get {
    return internalQueue.sync { internalName }
  }
  set (newName) {
    internalQueue.sync { internalName = newName }
  }
}
```

Sync Dispatching Don'ts

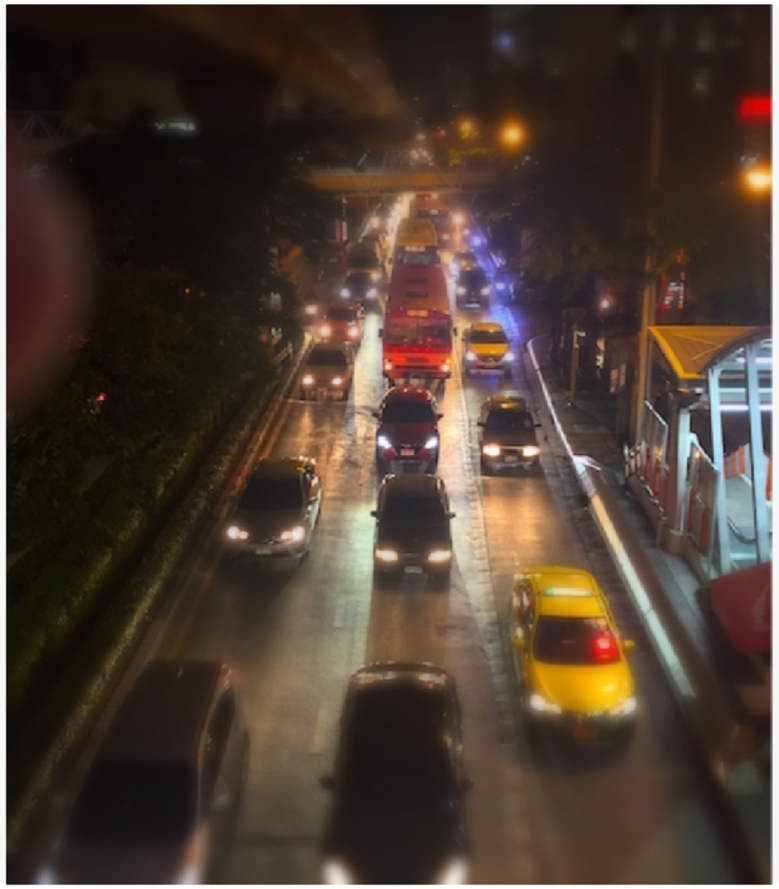
```
// Never dispatch synchronously onto the current queue
// If currentQueue is the current queue, don't do this:
currentQueue.sync {
  task1()
}

// Never dispatch synchronously from the main queue
// If the current queue is the main queue, don't do this:
anyOtherQueue.sync {
  task2()
}
```

Challenge Time!

```
30 let inputImage = UIImage(named: "dark_road_small.jpg")
```

```
31
```

```
51 tsOp.outputImage
```



```
52
```