nimble

Reactive Programming : LiveData

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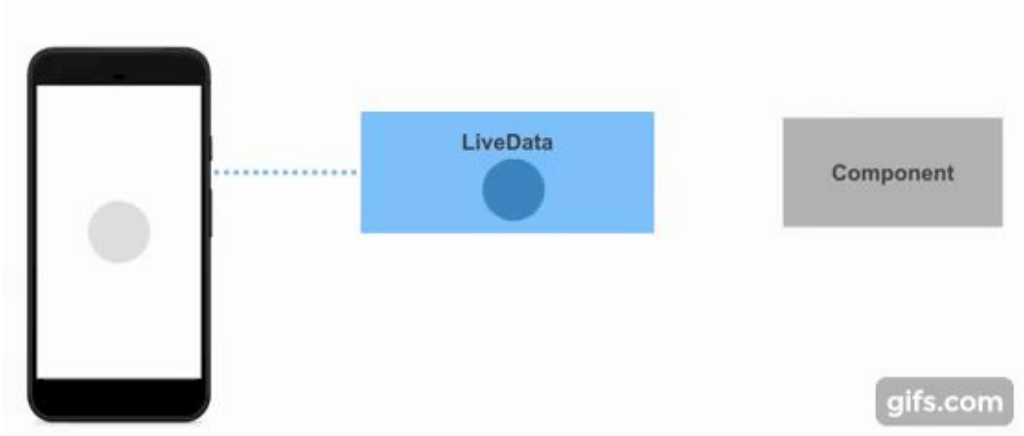
Introduction - What is LiveData ?

LiveData is an **observable data holder** :

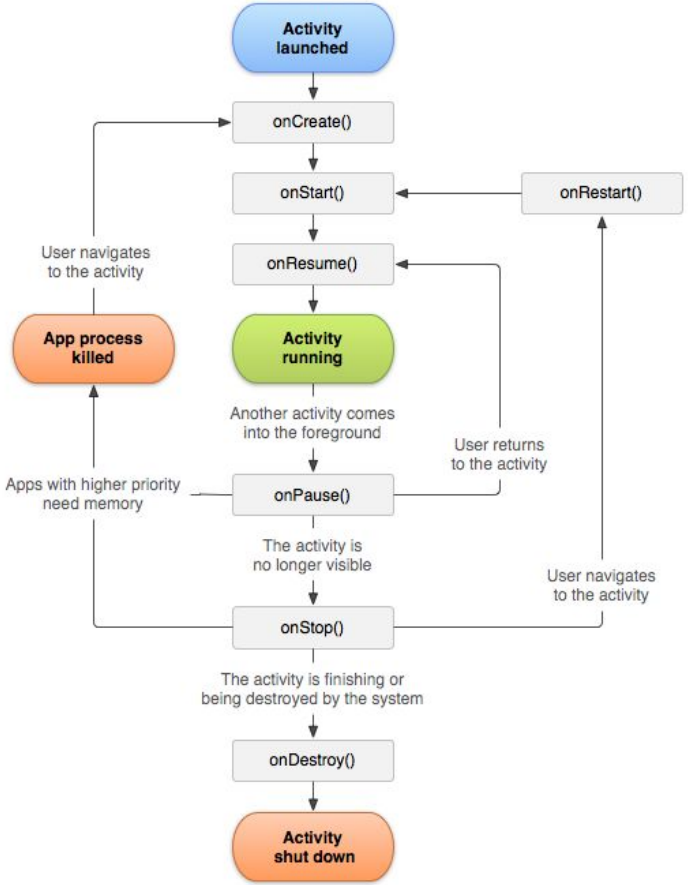
1. The **UI** observes the livedata object **=** The **UI** wants to be notified of updates
2. The **data** in LiveData changes
3. The **UI** gets notified, so the **UI** will update itself with the new data

→ LiveData makes it easy to keep what's going on on screen & sync with our data!



Activity Lifecycle - Why should we use LiveData?

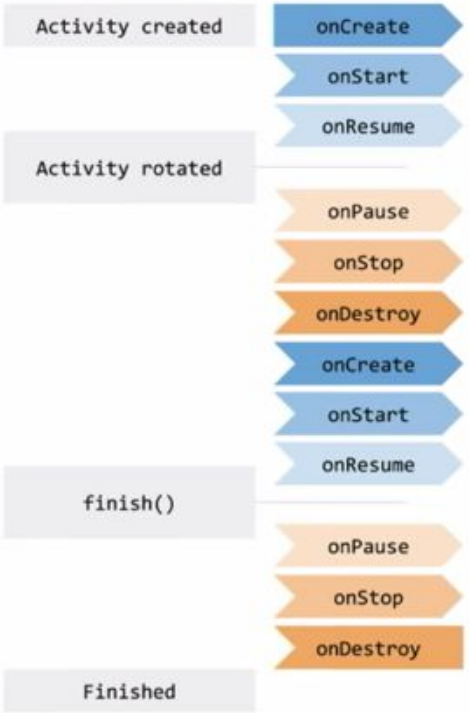
- An activity represents a single screen
- An app is a collection of **one** or **more** activities
- An activity can go through different **states/transitions**
  - ★ onCreate() = Created
  - ★ onStart() = Started
  - ★ onResume() = Resumed
  - ★ ...
  - ★ onStop() = Stopped
  - ★ onDestroy() = Destroyed



Motivation - Why should we use LiveData?

LiveData is an observable data holder, but it is **lifecycle** aware!

- No memory leaks
  - → *When an activity is destroyed, it cleans up after itself*
- No crashes due to stopped activities
  - → *If the activity is inactive, no LiveData events will be sent*
- No more manual lifecycle handling
  - → *Lifecycle management is automated*
- Always up-to-date data
  - → *If activity is active again, from being inactive, it will get the latest data*
- Proper configuration changes
  - → *If activity undergoes a configuration change, it will get the latest data*
- Sharing resources
  - → *LiveData can be extended as a singleton object, that can be shared in your app*



Differences with RxJava

LiveData

RxJava

```
private val counter = MutableLiveData<Int>()
```

```
counter.value = 1
```

LiveData only has <u>two</u> built-in operators:

→ Map, SwitchMap & Mediator

If your operations are lifecycle **dependent**?

```
private val counter = BehaviourSubject.create<Int>()
```

```
counter.onNext(1)
```

RxJava has <u>a lot</u> of built-in operators

→ Map, FlatMap, Filter, Delay, SkipUntil, ...

If you need a lot of **operators**?

Which one is better? Use both!

DEMO

Thanks!

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