**Fragments**

**What is Fragment?**

A [Fragment](https://developer.android.com/guide/components/fragments) represents a reusable portion of user interface (UI) in an Activity.

It defines and manages its own layout, has its own lifcycle and receives its own input events.

You can add or remove a Fragment while the activity is running.

A Fragment's UI is defined in an XML layout file.

You can combine multiple fragments in a single activity.

Ex : Whatsapp

In Whatsapp, we have 3 sections i.e., chat, status, call section. We need to change the activity so will create 3 activities.

All 3 activity are referred as single activity. Once user press button it will switch to the activities like swipes left/right, what happens is, it will switch between the fragments.

**Types of Fragments**

* **Single frame fragments** : Single frame fragments are using for hand hold devices like mobiles, here we can show only one fragment as a view.
* **List fragments** : fragments having special list view is called as list fragment
* **Fragments transaction** : Using with fragment transaction. we can move one fragment to another fragment.

**Handling the Fragments Lifecycle**

A Fragment exist in three states :

* **Resumed :** The fragment is visible in the running activity.
* **Paused :** Another activity is in the foreground and has focus, but the activity in which this fragment lives is still visible (the foreground activity is partially transparent or doesn’t cover the entire screen).
* **Stopped :** The fragment is not visible. Either the host activity has been stopped or the fragment has been removed from the activity but added to the back stack. A stopped fragment is still alive (all state and member information is retained by the system). However, it is no longer visible to the user and will be killed if the activity is killed.