**Launch Modes in Android**

**There are four launch modes for activity:**

1. Standard
2. SingleTop
3. SingleTask
4. SingleInstance

****Standard:****

This is the default launch mode of activity. If you don’t set any launch mode to your activity, it will use the standard mode ****by default****. It creates a new instance of activity every time even if activity instance is already present.

Suppose we have A, B, C, and D activities and your activity B has ****standard**** launch mode. Now again launching activity B

State of Activity Stack before launch B

A →B→ C→D

State of Activity Stack after launch B

A → B → C→D→ B

We can see that new instance of B is created again.

****SingleTop:****

If an instance of activity already exists at the top of the current task, a new instance will not be created and the Android system will route the intent information through ****onNewIntent()****.  
If an instance is not present on ****top**** of the task then a new instance will be created.

Suppose we have A, B, C, and D activities. ****A →B →C →D****

If we launch C then a new instance of C will be created as ****it is not on top****.  
So it will look like A →B →C →D →C

Now suppose we have A →B →C →D →C like this  
then we if again launch C activity then in this case new instance will not be created. Instead, we will receive the callback on ****onNewIntent()****method.

****SingleTask:****

An activity declared with launch mode as ****singleTask****can have ****only one instance in the system**** (singleton). At a time only one instance of activity will exist.

If activity instance is not present then the new instance will be created and if the instance is already present in the system then the ****onNewIntent()**** method will receive the callback.

Suppose we have A, B, C activities(****A →B →C )****and we are launching D that has a singleTask launch mode. In that case, the new instance of D will be created so the current state will look like this. (****A →B →C →D)****

Now let suppose if we launch B that also have has a ****singleTask**** launch mode then current state will look like this.

****A →B****

Here old instance gets called and intent data route through onNewIntent() callback. Also, notice that ****C and D activities get destroyed**** here.

****SingleInstance:****

It is similar to singleTask except that no other activities will be created in the same task. If another Activity is called from this kind of Activity, a new Task would be automatically created to place that new Activity.

## **Case 1:**

Suppose you have A, B, and C activities(****A →B →C)**** and your activity D has a ****singleInstance**** launch mode. In this case, if we launch D then D will be launch in the different task. New task for D will be created.

Task1: ****A →B →C****

Task2 : D (****here D will be in the different task****)

Now if you continue this and start E and D then Stack will look like

Task1: ****A →B →C →E****

Task2: D

## **Case 2:**

Suppose you have A, B, C activities in****one task**** (****A →B →C****)and activity D is in ****another task**** with launch mode ****singleInstance****. In this case, if we launch D again then we will receive the callback in the ****onNewIntent()**** method of D activity.

Task1: ****A →B →C****

Task2: D (****Here old instance gets called and intent data route through onNewIntent() callback****)