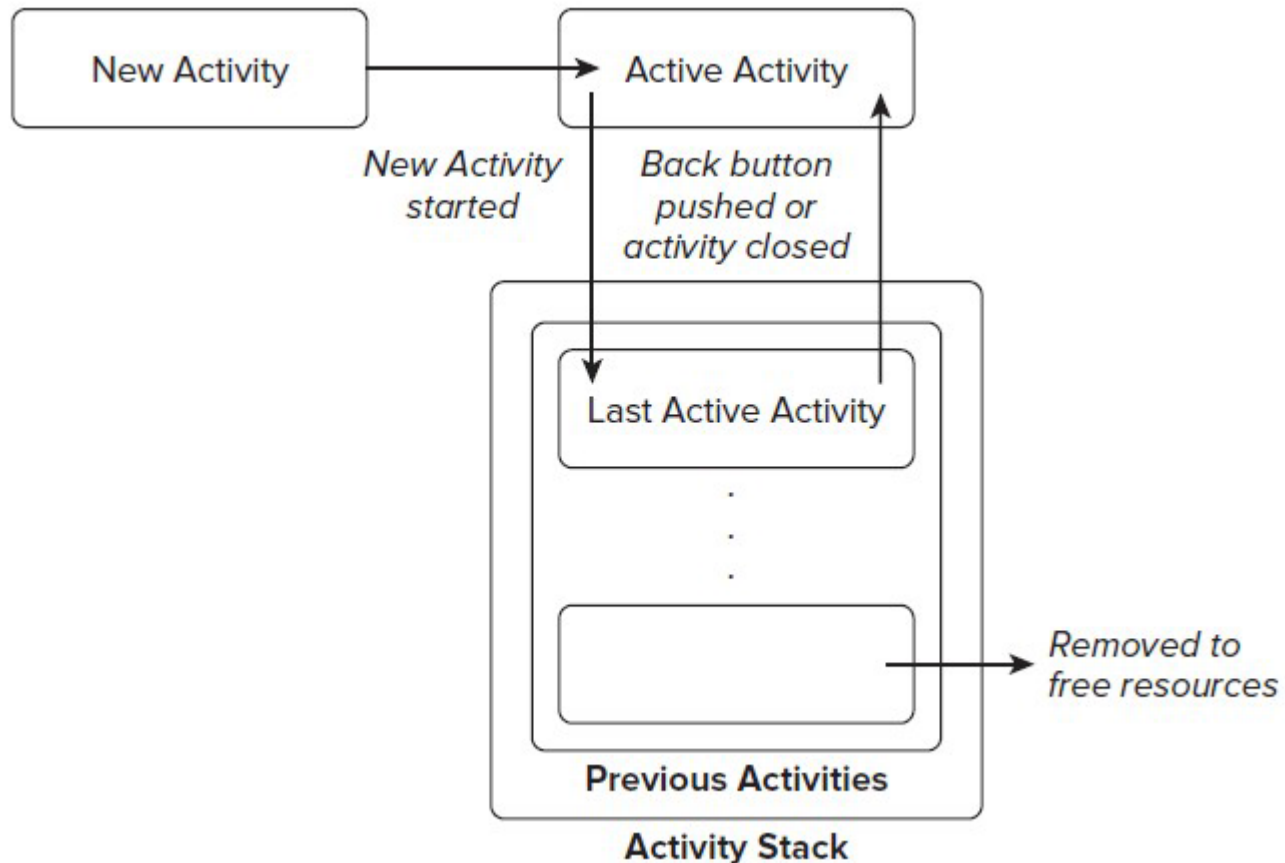


Rotation Handling

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Activity Stack Recap



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Rotation Basics

- Android devices provide multiple ways to indicate a need for rotation
 - Accelerometer, opening keyboard...
- Rotation is done by destroying and recreating active/paused activity

Such 'an Appetite for Destruction?'

- Activity destruction/recreation can occur for many different reasons, and screen rotation is just one of them
 - Locale change, low memory...
- Rotation is no different since it can trigger change in layouts as well...

What About Activity's State?

- We save it via *onSaveInstanceState()* when it gets destroyed, passing all the required info into its Bundle argument
- An view linked to an object in code should maintain its state.*(not recommend)*
- Other views will need to be restored afterwards via *onRestoreInstanceState()*

Example:

```
protected void onSaveInstanceState(Bundle  
outState)  
{  
    super.onSaveInstanceState(outState);  
    if (myvar!=null) {  
        outState.putString("myVar",  
myvar.toString());  
    }  
}
```

Example:

```
@Override
public void onCreate(Bundle
savedInstanceState)
{
    super.onCreate(savedInstanceState);
    ...
    if (savedInstanceState!=null)
    {
        String myvar = state.getString("myvar");
    }
    ...
}
```

Problems with savedInstanceState()

- Limited to Bundle, *i.e.* it does not help with running threads, opened sockets, etc...
- Significant performance penalty if onCreate() does lots of initialization

Alternatives

- Passing context object via:
 - Object onRetainNonConfigurationInstance()
 - getLastNonConfigurationInstance() != null
 - It can preserve threads, opened sockets, other information
- Using onCreate() of Application singleton to hold this information instead
- However, Activity destruction/recreation still takes place

Manual Rotation

- It is possible to do manual rotation configuration per activity
- Adding android:configChanges parameter to <activity ...> declaration
android:configChanges="keyboardHidden|orientation">
- Implementing onConfigurationChanged() in code

Forcing Screen Orientation

- Add `android:screenOrientation = "portrait"` to keep screen oriented in portrait
- BUT Activity will still be recreated! To prevent activity destruction/recreation AND keeping screen orientation, use both
 - `android:configChanges`
 - `android:screenOrientation`

Questions

- Please ask in the Student Forum