

Lecture 6 – UI and adapters

CS260 – Android App Development

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Review

- Mobile development idea
- Android app components
- manifest
- UI introduction

Creating resources

- Idea: separate resources from the codes
- string
- color
- plurals
- string-array
- array
- dimen
- layout
- And more (animation, menu, style)

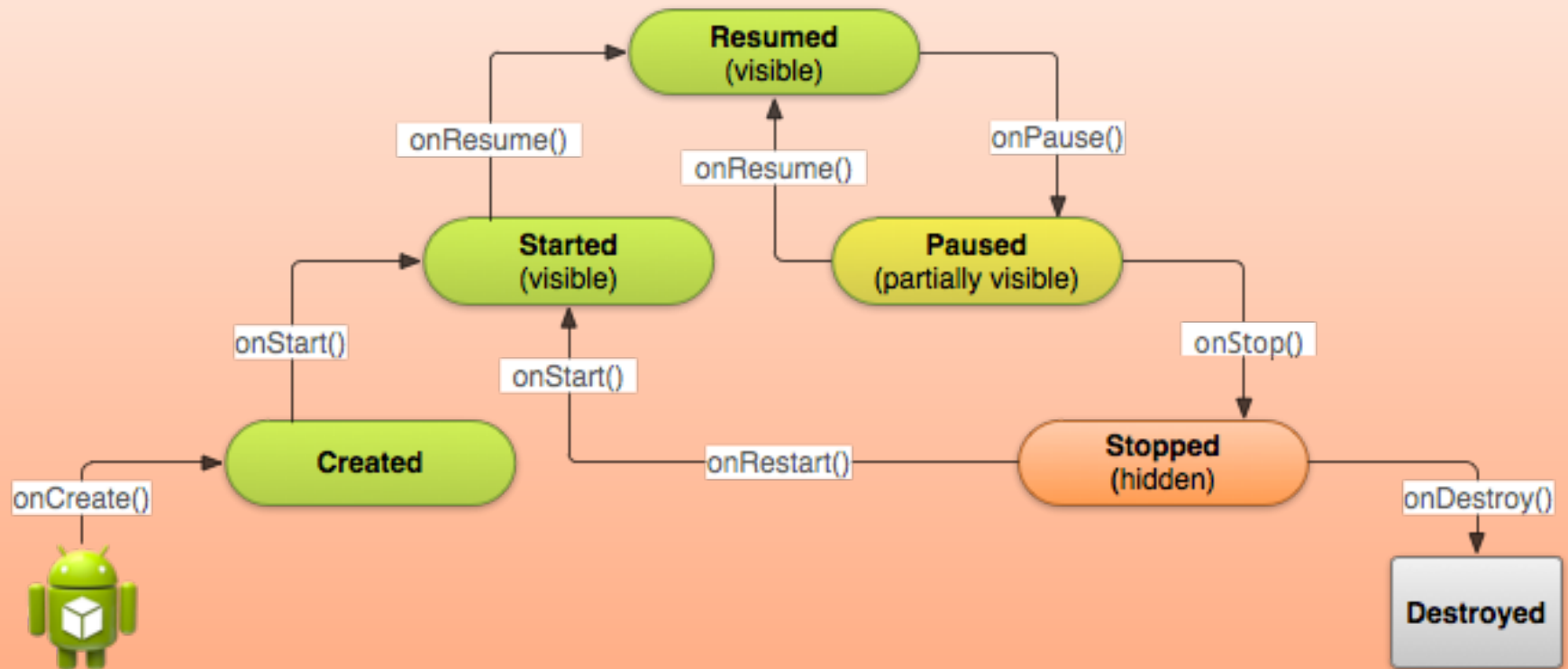
Creating resources

- Most of time, each resource should have a unique name
 - They can be used in your layout via `@type/name`
 - `@string/hello_world`
 - `@color/red`
 - They can be used from `getResources()` in your code.
 - `Resources resource=getResources();`
 - `Int blue=resource.getColor(R.color.special_blue);`

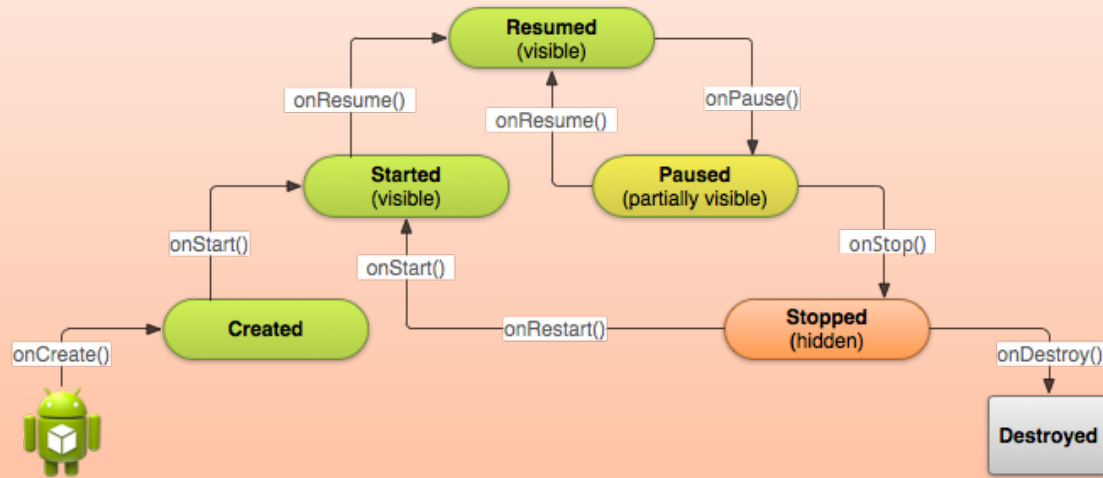
Activity in Android App

- Activities are basically the user interfaces of your app
- Each screen is a different activity
- Most of the activities rely on your layout
 - Android provides a big list of View groups
 - All of them are child of the View class

Activity cycles in Android (callback methods)

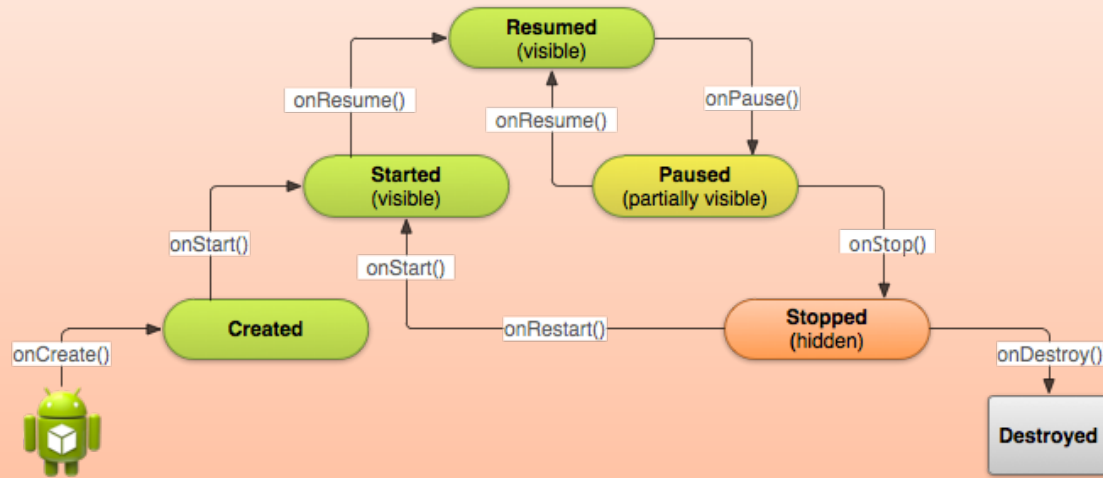


Activity cycles in Android (callback methods)



- Only Resumed, Paused, and Stopped are permanent states
- Created and Started are transient states
- It is important to save your data when transiting into paused or stopped state

Activity cycles in Android (callback methods)



- Visible lifetime: from `onStart()` to `onStop()`
- Active lifetime: Resumed and Paused

UI design

As if a device can function if it has no style. As if a device can be called stylish that does not function superbly.... Yes, beauty matters. Boy, does it matter. It is not surface, it is not an extra, it is the thing itself.

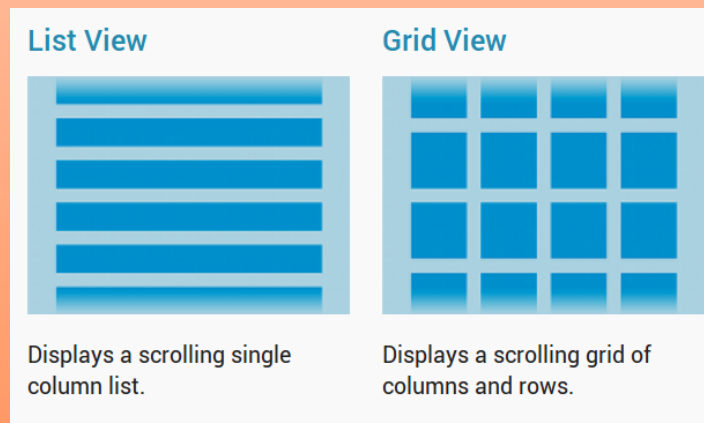
STEPHEN FRY , THE GUARDIAN
(OCTOBER 27, 2007)

UI basics

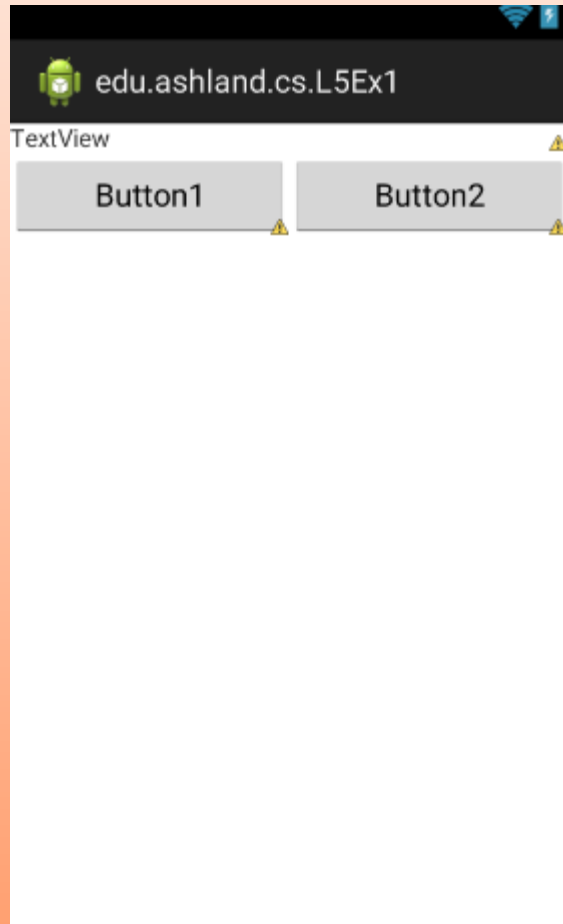
- View: the basic class that every widget inherited from
- Fragments: A group of basic views encapsuled into an activity. → to accommodate different sizes of screens
- Activity uses setContentView() to create UI
 - Usually setContentView() is called inside onCreate()
 - setContentView uses either a layout or a View as its parameter

Layout basics

- <http://developer.android.com/guide/topics/ui/declaring-layout.html>
 - Linear layout: vertical or horizontal linear layout of all the objects. One after another
 - Relative layout: layout your Views into relative positions from each other
 - Grid/List layout: new to Android and uses Adapters to populate list of items into the layout.



Linear Layout Exercise



Relative layout



Grid layout

- Note: no `layout_width` and `layout_height` aren't required for `grid_layout` elements



Example

Create a palindrome app

Adapters

- Adapters are used to bind data to View Groups.
 - They are basically data binders
 - Most of time ArrayAdapter is used to display a list on a ListView Object or a Spinner.
 - If needed, the setOnItemClickListener method can be implemented to allow interaction with ListView items.

Example

- ListView sample