



19CSI605 - Mobile Application Development

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Activities

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Activities

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What is Android Activity?

- An Android Activity is an application component
- Represents one window, one hierarchy of views
- Typically fills the screen, but can be embedded in other activity or a appear as floating window
- Java class, typically one activity in one file



Activities

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What does an Activity do?

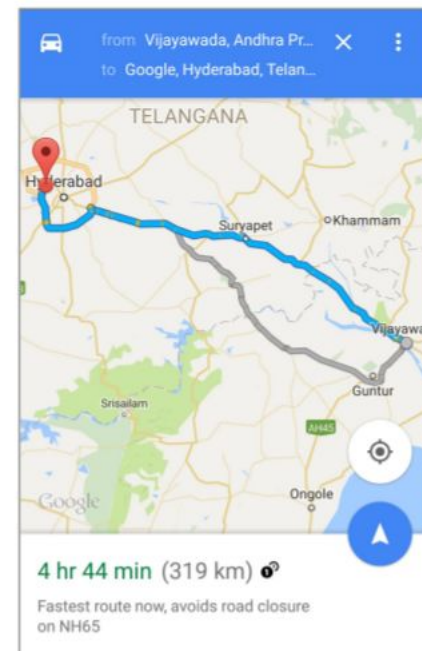
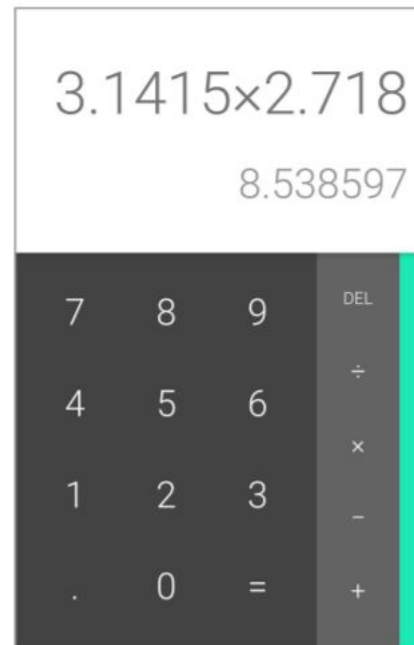
- Represents an activity, such as ordering groceries, sending email, or getting directions
- Handles user interactions, such as button clicks, text entry, or login verification
- Can start other activities in the same or other apps
- Has a life cycle—is created, started, runs, is paused, resumed, stopped, and destroyed



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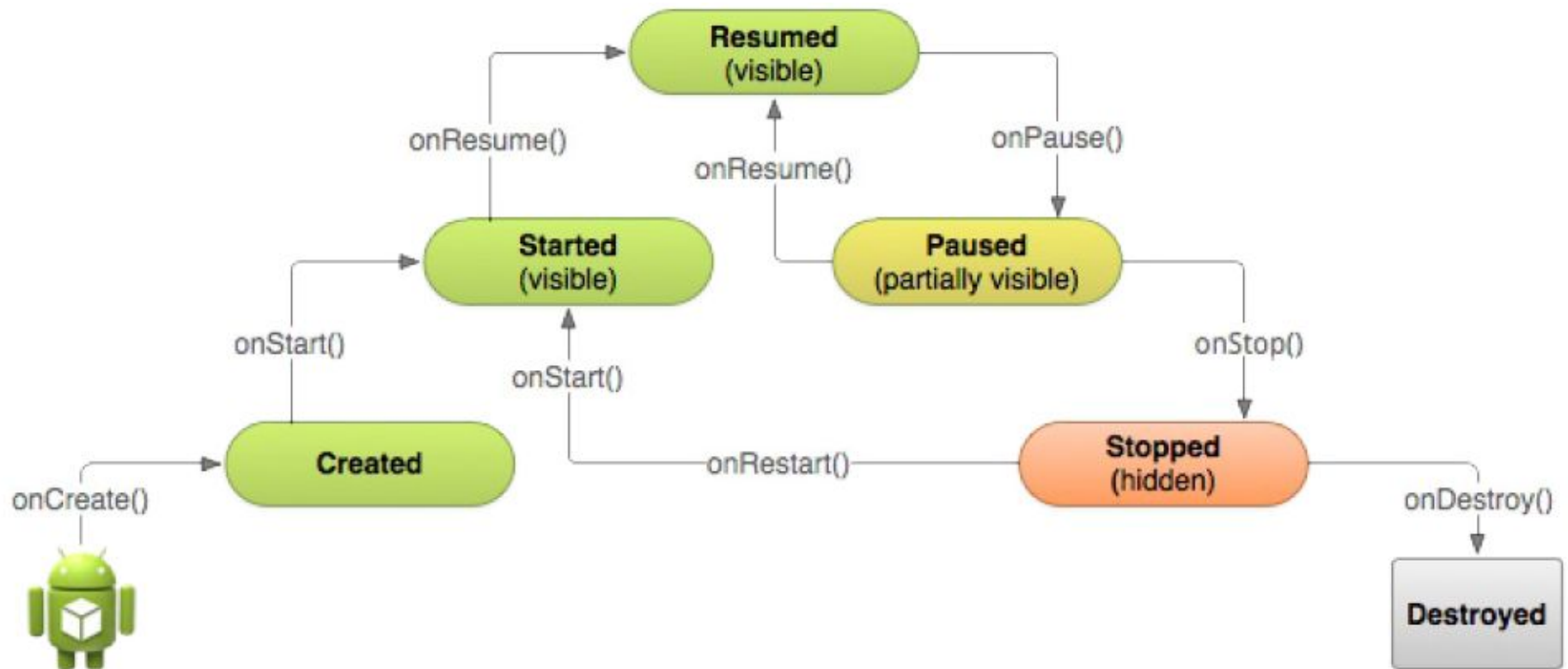
Example





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Life cycle



Activities

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Activity Life Cycle

□ onCreate()

- ✓ It is called when the activity is first created.
- ✓ This is where all the static work is done like creating views, binding data to lists, etc.
- ✓ This method also provides a Bundle containing its previous frozen state, if there was one.

□ onStart()

- ✓ It is invoked when the activity is visible to the user.
- ✓ It is followed by onResume() if the activity is invoked from the background.
- ✓ It is also invoked after onCreate() when the activity is first started.



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Activity Life Cycle

□ **onRestart()**

- ✓ It is invoked after the activity has been stopped and prior to its starting stage.
- ✓ Thus is always followed by `onStart()` when any activity is revived from background to on-screen.

□ **onResume()**

- ✓ It is invoked when the activity starts interacting with the user.
- ✓ At this point, the activity is at the top of the activity stack, with a user interacting with it.
- ✓ Always followed by `onPause()` when the activity goes into the background or is closed by the user.



Activity Life Cycle

□ onPause()

- ✓ It is invoked when an activity is going into the background but has not yet been killed.
- ✓ It is a counterpart to onResume().
- ✓ When an activity is launched in front of another activity, this callback will be invoked on the top activity (currently on screen).
- ✓ The activity, under the active activity, will not be created until the active activity's onPause() returns, so it is recommended that heavy processing should not be done in this part.



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Activity Life Cycle

□ **onStop()**

- ✓ It is invoked when the activity is not visible to the user.
- ✓ It is followed by **onRestart()** when the activity is revoked from the background, followed by **onDestroy()**.

□ **onDestroy()**

- ✓ **onDestroy()** is called before the activity is destroyed.
- ✓ The activity is finishing due to the user completely dismissing the activity or due to **finish()** being called on the activity.
- ✓ The system is temporarily destroying the activity due to a configuration change ex. device rotation or multi-window mode

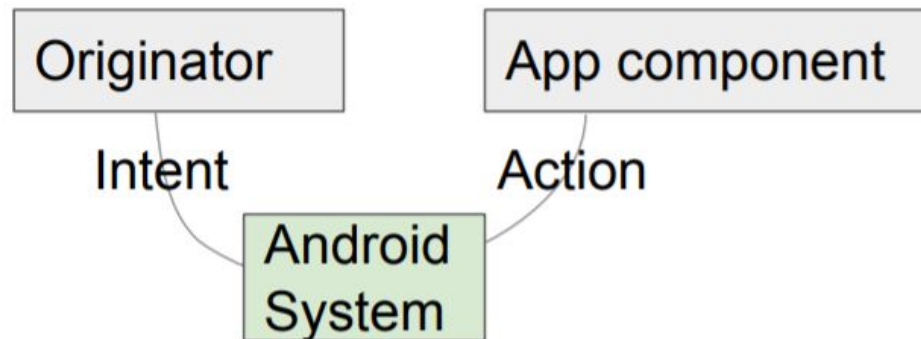


Activities and Intents

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What is an Intent?

- An intent is a description of an operation to be performed.
- An Intent is an object used to request an action from another app component via the Android system.





Activities and Intents

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What can Intent do?

❑ **Start activities**

- ✓ A button click starts a new activity for text entry
- ✓ Clicking Share opens an app that allows you to post a photo

❑ **Start services**

- ✓ Initiate downloading a file in the background

❑ **Deliver broadcasts**

- ✓ The system informs everybody that the phone is now charging



Activities and Intents

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Intents

□ **Body of Intent**

- ✓ **action:** The general action to be performed, such as ACTION_VIEW, ACTION_EDIT, ACTION_MAIN, etc.
- ✓ **data:** The data to operate on, such as a person record in the contacts database, expressed as a Uri

□ **Types:**

- ✓ Implicit Intents
- ✓ Explicit Intents



Activities and Intents

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Explicit Intent

Starts a specific activity

- ✓ Request tea with milk delivered by Nikita
- ✓ Main activity starts the ViewShoppingCart activity

Implicit Intent

Asks system to find an activity that can handle this request

- ✓ Find an open store that sells green tea
- ✓ Clicking Share opens a chooser with a list of apps



Activities and Intents

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1.Implicit Intents

- Implicit Intent doesn't specify the component.
- In such a case, intent provides information on available components provided by the system that is to be invoked.
- Implicit intents are used without a class name, where Android will help determine an appropriate Activity to handle the intent.
- For example, you may write the following code to view the webpage.

```
Intent intent=new Intent(Intent.ACTION_VIEW);  
intent.setData(Uri.parse("http://www.javatpoint.com"));  
startActivity(intent);
```



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2.Explicit Intents

- Explicit Intent specifies the component.
- In such a case, intent provides the external class to be invoked.
- Explicit Intent are used with class name, where Android navigate via routes.

```
Intent i = new Intent(getApplicationContext(),  
ActivityTwo.class);  
startActivity(i);
```

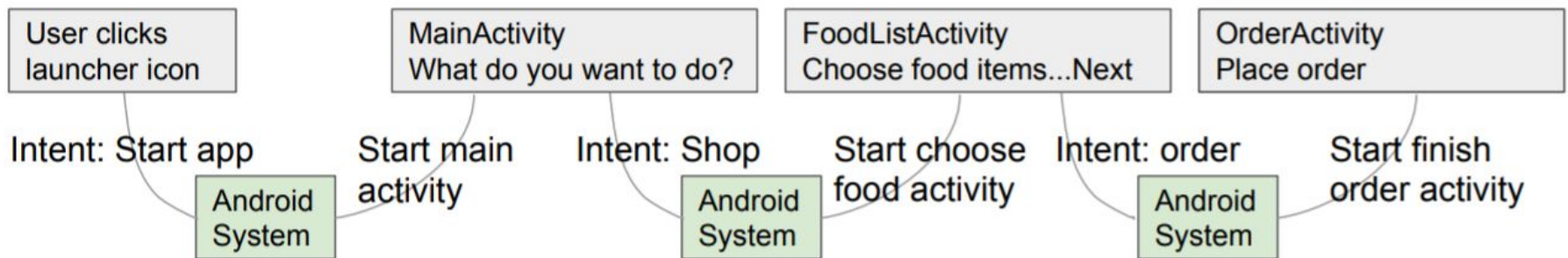


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How activities run?

- ❑ All activities are managed by the Android runtime
- ❑ Started by an "intent", a message to the Android runtime to run an activity





THANK YOU