The slide has a dark blue background with a lighter blue wavy pattern at the top. The text is centered and in a light blue/teal color.

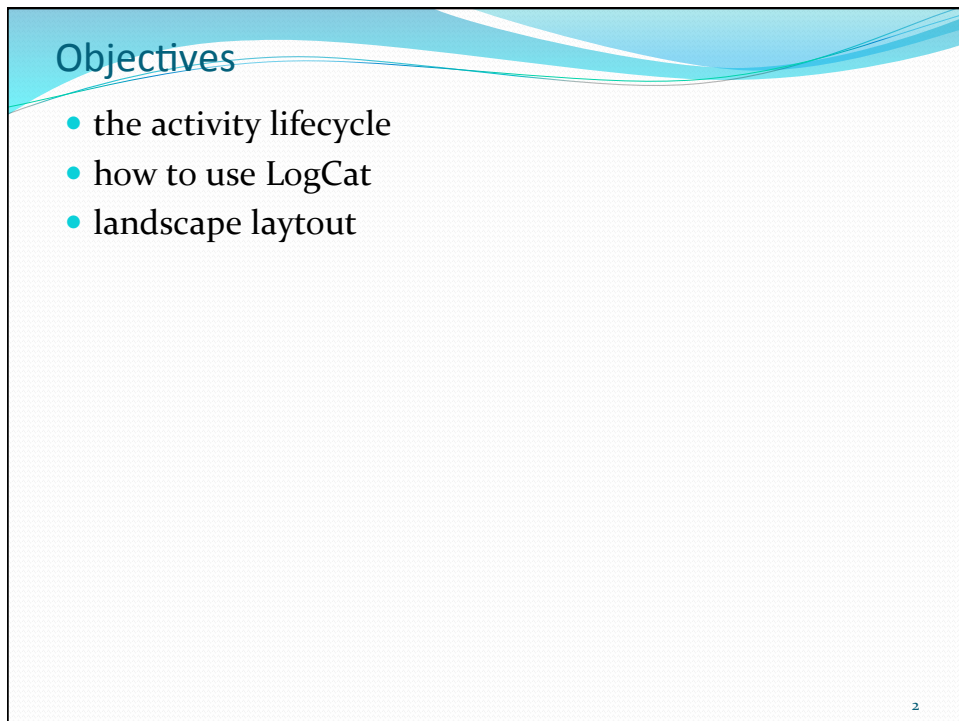
Lecture 03

The Activity Lifecycle

CMSC 4303/5303 Mobile Apps Programming

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The slide has a light blue wavy pattern at the top and a light gray background with a fine grid pattern below. The text is in a dark blue/black color.

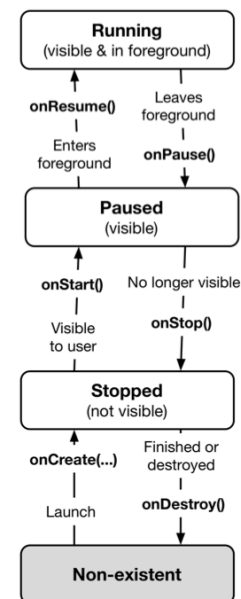
Objectives

- the activity lifecycle
- how to use LogCat
- landscape layout

2

Activity state diagram

- Every instance of **Activity** has a lifecycle.
- You never call **onCreate(...)** or any of the other **Activity** lifecycle.
- Android calls them at the appropriate time.
- You may override them for your own purpose.



3

Logging the Activity Lifecycle

```
public class QuizActivity extends Activity {
```

```
...
```

```
@Override
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    Log.d(TAG, "onCreate(Bundle) called");
    setContentView(R.layout.activity_quiz);
}
```

```
} // End of onCreate(Bundle)
```

```
@Override
public void onStart() {
    super.onStart();
    Log.d(TAG, "onStart() called");
}
```

```
@Override
public void onPause() {
    super.onPause();
    Log.d(TAG, "onPause() called");
}
```

```
@Override
public void onResume() {
    super.onResume();
    Log.d(TAG, "onResume() called");
}
```

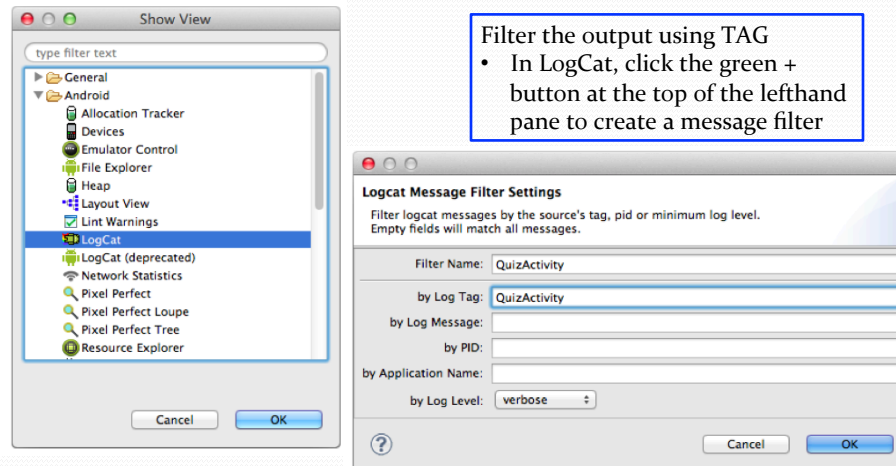
```
@Override
public void onStop() {
    super.onStop();
    Log.d(TAG, "onStop() called");
}
```

```
@Override
public void onDestroy() {
    super.onDestroy();
    Log.d(TAG, "onDestroy() called");
}
```

4

Using LogCat

- LogCat: a log viewer included in ADK tools.
- Window → Show View → Other → LogCat



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Figure 3.6 Launching GeoQuiz creates, starts, and resumes an activity

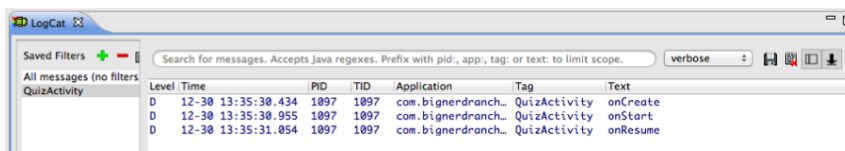


Figure 3.7 Pressing the Back button destroys the activity

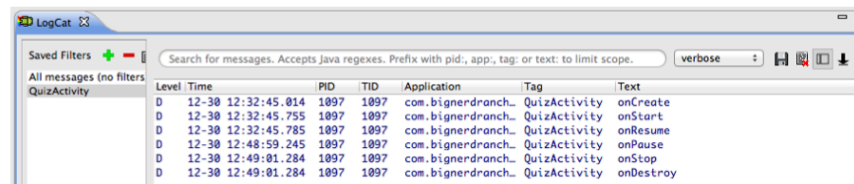
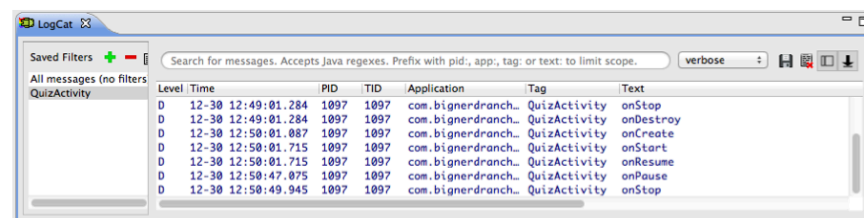


Figure 3.8 Pressing the Home button stops the activity



Device configurations

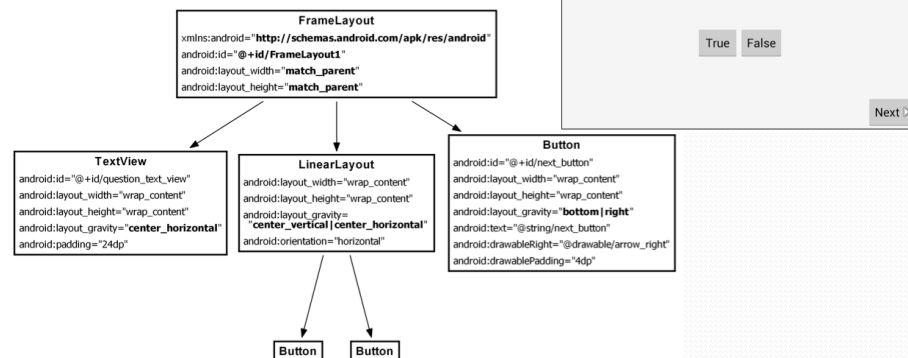
- The device configuration is a set of characteristics that describe the current state of an individual device.
 - characteristics include screen orientation/density/size, keyboard type, dock mode, language, etc
- When a runtime configuration change occurs, Android finds resources that are a better match for the new configuration.

7

Creating a landscape layout

- Copy the **activity_quiz.xml** file from res/layout/ to res/layout-land/
 - res/layout/ → a default layout
 - res/layout-land/ → a landscape layout
 - keep the filename the same!

Figure 3.12 An alternative landscape layout



8

Saving Data Across Rotation

```
public class QuizActivity extends Activity {

    private static final String TAG = "QuizActivity";
    private static final String KEY_INDEX = "index";

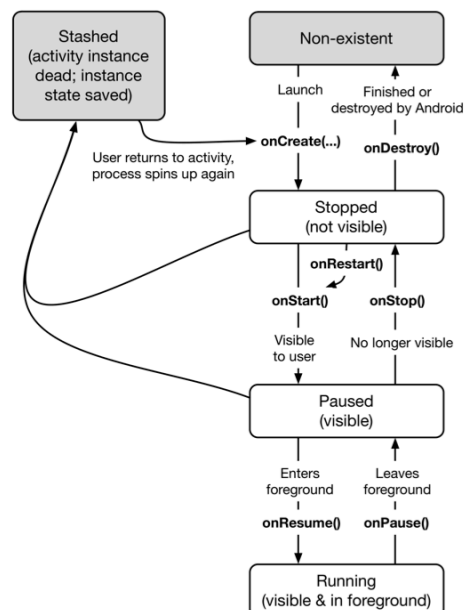
    if (savedInstanceState != null) {
        mCurrentIndex = savedInstanceState.getInt(KEY_INDEX, 0);
    }

    updateQuestion();
} // end of onCreate(Bundle savedInstanceState)

@Override
public void onSaveInstanceState(Bundle savedInstanceState) {
    super.onSaveInstanceState(savedInstanceState);
    Log.i(TAG, "onSaveInstanceState");
    savedInstanceState.putInt(KEY_INDEX, mCurrentIndex);
}
```

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The complete activity lifecycle



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