Examples of Demystification Report

1.

**Concerned API:** surfacetexture

**Concerned API Caveat:** Each time the texture is bound it must be bound to the GL\_TEXTURE\_EXTERNAL\_OES target rather than the GL\_TEXTURE\_2D target

**Error Scenario:**

- **Question title:** Use OpenGL ES2.0 to render video on GLSurfaceView, but the texture is gray (#46291081)

- **View times**: 233

**- Error code:**

...

bool GLRenderer::setupTextures() {

glGenTextures(3, yuvTextures);

for (int i = 0; i < 3; i++) {

glActiveTexture(GL\_TEXTURE0 + i);

glUniform1i(glGetUniformLocation(gProgram, TEXTURE\_UNIFORMS[i]), i);

glBindTexture(**GL\_TEXTURE\_2D**, yuvTextures[i]);

glTexParameterf(GL\_TEXTURE\_2D,

GL\_TEXTURE\_MIN\_FILTER, GL\_LINEAR);

glTexParameterf(GL\_TEXTURE\_2D,

GL\_TEXTURE\_MAG\_FILTER, GL\_LINEAR);

glTexParameterf(GL\_TEXTURE\_2D,

GL\_TEXTURE\_WRAP\_S, GL\_CLAMP\_TO\_EDGE);

glTexParameterf(GL\_TEXTURE\_2D,

GL\_TEXTURE\_WRAP\_T, GL\_CLAMP\_TO\_EDGE);

}

//checkNoGLES2Error();

return true;

}

...

**- Patch:**

If you are rendering a SurfaceTexture texture, you should use the **GL\_TEXTURE\_EXTERNAL\_OES** texture target and samplerExternalOES sampler.

As written here: SurfaceTexture:

...

- **Related API:**  **GL\_TEXTURE\_EXTERNAL\_OES**

- **Confusing API**：**GL\_TEXTURE\_2D**

2.

**Concerned API:** Intent#ACTION\_CHOOSER

**Concerned API Caveat:** In this case the CHOOSER action should be used, to always present to the user a list of the things they can do, with a nice title given by the caller such as \"Send this photo with:\"

* **Error Scenario:**

- **Question title:** Android direct shared (#35760008)

- **View times**: 414

**- Error code:**

Intent shareIntent = ShareCompat.IntentBuilder .from(getActivity())

.setType(\"text/plain\")

.setText(sTitle+ \"\\n\" + urlPost)

.getIntent();

if shareIntent.resolveActivity(

getActivity().getPackageManager()) != null) startActivity(shareIntent);

**- Patch:** You should use .createChooserIntent() instead of .getIntent()

**- Related API:** createChooserIntent(), getIntent(), Intent.createChooser, intent.action\_chooser

**- Confusing API:** getIntent()

3.

Example-5:

* **Concerned API:** R.attr#fillAfter
* **Concerned API Caveat:** When set to true, the animation transformation is applied after the animation is over
* **Error Scenario:**

- **Question title:** onAnimationEnd is not getting called, onAnimationStart works fine (#5474923)

- **View times**: 28k

**- Error code:**

mToolbar = mPopupContents.findViewById( R.web.toolbar );

TranslateAnimation anim =

new TranslateAnimation(0, 0, -60, 0);

anim.setDuration(1000);

**anim.setAnimationListener(new Animation.AnimationListener() {**

**public void onAnimationStart(Animation a) {**

**Log.d(LOGTAG, "---- animation start listener called" );**

**}**

**public void onAnimationRepeat(Animation a) {}**

**public void onAnimationEnd(Animation a) {**

**Log.d(LOGTAG, "---- animation end listener called" );**

**}**

**});**

mToolbar.startAnimation(anim);

**- Patch:**

final FadeUpAnimation anim = new FadeUpAnimation(v);

anim.setInterpolator(new AccelerateInterpolator());

anim.setDuration(1000);

**anim.setFillAfter(true);**

**new Handler().postDelayed(new Runnable() {**

**public void run() {**

**v.clearAnimation();**

**//Extra work goes here**

**}**

**}, anim.getDuration());**

v.startAnimation(anim);

- **Related API**: **setAnimationListener，** setFillAfter()

- **Confusing API**：**setAnimationListener**

4.

**Concerned API:** Manifest.permission#BIND\_ACCESSIBILITY\_SERVICE

**Concerned API Caveat:** Must be required by an AccessibilityService , to ensure that only the system can bind to it

* **Error Scenario:**

- **Question title:** Android AccessibilityService compatible to Kindle Fire? (#25351463)

- **View times**: 299

**- Error code:**

<uses-permission android:name="android.permission.BIND\_NOTIFICATION\_LISTENER\_SERVICE"/>

<uses-permission android:name="android.permission.BIND\_ACCESSIBILITY\_SERVICE" />

<uses-permission android:name="android.permission.INTERNET" />

<uses-permission android:name="android.permission.ACCESS\_NETWORK\_STATE"/>

<uses-sdk

android:minSdkVersion="10"

android:targetSdkVersion="18"

/>

<application

android:icon="@drawable/ic\_launcher"

android:allowBackup="true">

<activity

android:name="de.test.notificationdistributor.SettingsActivity"

android:icon="@drawable/ic\_launcher"

android:label="@string/app\_name">

<intent-filter>

<action android:name="android.intent.action.MAIN" />

<category android:name="android.intent.category.LAUNCHER" />

</intent-filter>

</activity>

<service android:name="de.test.notificationdistributor.NotificationDistributorService">

<intent-filter>

<action android:name="android.service.notification.NotificationListenerService" />

</intent-filter>

</service>

<service android:name="de.test.notificationdistributor.NotificationDistributionDeprService">

**<intent-filter>**

**<action android:name="android.accessibilityservice.AccessibilityService" />**

**</intent-filter>**

</service>

</application>

**- Patch:**

<service

android:name="de.test.notificationdistributor.NotificationDistributorService"

**android:permission="android.permission.BIND\_ACCESSIBILITY\_SERVICE">**

**<meta-data android:name="android.accessibilityservice" android:resource="@xml/accessibilityservice" />**

**<intent-filter>**

**<action android:name="android.service.notification.NotificationListenerService" />**

**</intent-filter>**

</service>

- **Related API:** android.accessibilityservice.AccessibilityService, service.notification.NotificationListenerService, android.permission.BIND\_ACCESSIBILITY\_SERVICE

- **Confusing API**：android.accessibilityservice.AccessibilityService

5.

**Concerned API:** AnimatedVectorDrawable#mutate()

**Concerned API Caveat:** This is especially useful when you need to modify properties of drawables loaded from resources

* **Error Scenario-1:**

- **Question title:** DrawableCompat setTint tints all new Drawables with the same id (#38119671)

- **View times**: 1k

**- Error code:**

Drawable bubbleDrawable = ContextCompat.getDrawable(context, R.drawable.bg\_chat\_bubble);

if (tint) {

bubbleDrawable = DrawableCompat.wrap(bubbleDrawable);

DrawableCompat.setTint(bubbleDrawable, bubbleTint);

}

**- Patch:**

bubbleDrawable.mutate()

- **Related API: none**

- **Confusing API**：None

6.

**Concerned API:** R.attr#fillAfter

**Concerned API Caveat:** When set to true, the animation transformation is applied after the animation is over

* **Error Scenario:**

- **Question title:**[Android: Rotate animation get back to its real state after finishing the animation?](https://stackoverflow.com/questions/10203577/android-rotate-animation-get-back-to-its-real-state-after-finishing-the-animati) (#10203577)

- **View times**: 10k

**-Erroneous Code examples:**

<?xml version="1.0" encoding="utf-8"?>

<rotate xmlns:android="http://schemas.android.com/apk/res/android" android:pivotX="50%"

android:pivotY="50%"

android:fromDegrees="0"

android:toDegrees="30"

android:duration="2000">

</rotate>

**-Recognized patch:**

android:fillAfter="true"

android:fillEnabled="true"

- **Related API**: fillEnabled

- **Confusing API**：none

7.

**Concerned API:** Intent#FLAG\_ACTIVITY\_NEW\_DOCUMENT

**Concerned API Caveat:** whether the recents entry for it is kept after the activity is finished is different than the use of FLAG\_ACTIVITY\_NEW\_TASK and R.attr.documentLaunchMode -- if this flag is being used to create a new recents entry, then by default that entry will be removed once the activity is finished

* **Error Scenario:**

- **Question title:** How to create the same Activity Multiple times to have an effect like Google Chrome Tabs? (#38119671)

- **View times**: 681

**- Error code:**

Intent intent=new Intent(this, MainActivity.class);

**intent.setFlags(Intent.FLAG\_ACTIVITY\_NEW\_TASK | Intent.FLAG\_ACTIVITY\_MULTIPLE\_TASK);**

startActivity(intent);

**- Patch:**

Use this replace the flag new\_task with new\_document

Intent intent=new Intent(this, MainActivity.class); **intent.setFlags(Intent.FLAG\_ACTIVITY\_NEW\_DOCUMENT | Intent.FLAG\_ACTIVITY\_MULTIPLE\_TASK);**

startActivity(intent);

- **Related API:** Intent.FLAG\_ACTIVITY\_NEW\_TASK ， Intent.FLAG\_ACTIVITY\_NEW\_DOCUMENT

- **Confusing API**：Intent.FLAG\_ACTIVITY\_NEW\_TASK

**concerned API:**String#replaceAll

**Concerned API Caveat:** replaceAll ( repl ) Note that backslashes ( \ ) and dollar signs ( $ ) in the replacement string may cause the results to be different than if it were being treated as a literal replacement string; see Matcher.replaceAll

* **Error Scenario:**

- **Question title:** [Android Pattern having problem with $ sign](https://stackoverflow.com/questions/7251834/android-pattern-having-problem-with-sign)(#7251834)

- **View times**: 681

**- Error code:**

Pattern pattern = Pattern.compile("(\\{#\\})");

String raw\_q = "Pete has {#}. He bought {#}.";

String[] var = ["$70","6 pens at $5 each"];

String act\_q = "";

for (int m = 0; m < var.length(); m++) {

try{

act\_q = raw\_q.replaceFirst(pattern.pattern(),var[m]);

}catch(Exception e){

e.printStackTrace();

}

**- Patch:**

Matcher m = pattern.matcher(raw\_q);

StringBuffer sb = new StringBuffer();

int i = 0;

while (m.find()) {

m.appendReplacement(sb, var[i].replaceAll("\\$", "\\\\$"));

i++;

}

m.appendTail(sb);

act\_q = sb.toString();

- **Related API:** appendReplacement, pattern.matcher

- **Confusing API**：replaceFirst, pattern.compile

9.

**Concerned API:** observable #notifyobservers

**Concerned API Caveat:** If this object has changed, as indicated by the hasChanged method, then notify all of its observers and then call the clearChanged method to indicate that this object has no longer changed

* **Error Scenario:**

- **Question title:** [Android Pattern having problem with $ sign](https://stackoverflow.com/questions/7251834/android-pattern-having-problem-with-sign)(#7251834)

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**- Patch:**

Matcher m = pattern.matcher(raw\_q);

StringBuffer sb = new StringBuffer();

int i = 0;

while (m.find()) {

m.appendReplacement(sb, var[i].replaceAll("\\$", "\\\\$"));

i++;

}

m.appendTail(sb);

act\_q = sb.toString();

- **Related API:** appendReplacement, pattern.matcher

- **Confusing API**：replaceFirst, pattern.compile

10.

**Concerned API Caveat:** "As a result, schemes here should always use lower case letters",

**Concerned API:**  "r.attr #scheme",

* **Error Scenario:**

- **Question title:** [Start browser via intent, url with schema “HTTP” (uppercase) error](https://stackoverflow.com/questions/27251456/start-browser-via-intent-url-with-schema-http-uppercase-error) (#27251456)

- **View times**:555

**- Error code:**

startActivity(new Intent(Intent.ACTION\_VIEW, Uri.parse(url)));

**- Patch:**

RFC 2396, sec. 3.1 says:

Scheme names consist of a sequence of characters beginning with a lower case letter and followed by any combination of lower case letters, digits, plus ("+"), period ("."), or hyphen ("-"). For resiliency, programs interpreting URI should treat upper case letters as equivalent to lower case in scheme names (e.g., allow "HTTP" as well as "http").

I.e. uppercase "HTTP" is incorrect according to the spec. Although programs should treat uppercase as equivalent to lower case, it does not have to.

It's also trivial for you to make sure that the scheme part of your URI is in lowercase, so it's easy to avoid.

- **Related API:** None

- **Confusing API**：None

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**Concerned API Caveat:** If this object has changed, as indicated by the hasChanged method, then notify all of its observers and then call the clearChanged method to indicate that this object has no longer changed

**Concerned API:**  observable #notifyobservers

* **Error Scenario:**

- **Question title:** [Observer design not working](https://stackoverflow.com/questions/24370611/observer-design-not-working) (#24370611）

- **View times**63

**- Error code:**

public class TitleInformer extends Observable {

private String title = "";

public void SetTitle(String s) {

title = s;

this.notifyObservers();

}

}

**- Patch:**

public void SetTitle(String s) {

title = s;

this.setChanged(); // first

this.notifyObservers();

}

- **Related API:** setChanged()

- **Confusing API**：None

12.

* **Concerned API:** SynchronousQueue
* **Concerned API Caveat:** They are well suited for handoff designs, in which an object running in one thread must sync up with an object running in another thread in order to hand it some information, event, or task
* **Error Scenario:**

- **Question title:** Synchronizing handler creation, and accessing (#10225815)

- **View times**: 583

**- Error code:**

*Thread t = new Thread(new Runnable {*

*Looper.prepare();*

*handler = new Handler();*

*Looper.Loop();*

*}*

*handler.post(new Runnable{}) //at this point sometimes handler is still null. and it is created like few ms later. But still at this point i need valid handler to background thread*

**- Patch:**

*final SynchronousQueue<Handler> giveMeHandler = new SynchronousQueue();*

*new Thread(new Runnable(){*

*public void run(){*

*Handler handler;*

*// create a Handler;*

*giveMeHandler.put(handler); // blocks until handler taken;*

*}*

*}).start();*

*Handler handler = giveMeHandler.take(); // blocks until handler given*

- **Related API:** None

- **Confusing API**：Looper.prepare, Looper.Loop

13

**Concerned API Caveat:** "As a result, schemes here should always use lower case letters",

**Concerned API:**  "r.attr #scheme",

* **Error Scenario:**

- **Question title:** [Start browser via intent, url with schema “HTTP” (uppercase) error](https://stackoverflow.com/questions/27251456/start-browser-via-intent-url-with-schema-http-uppercase-error) (#27251456)

- **View times**:555

**- Error code:**

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**- Patch:**

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- **Related API:** None

- **Confusing API**：None

14

**Concerned API:** Intent#ACTION\_CHOOSER

**Concerned API Caveat:** In this case the CHOOSER action should be used, to always present to the user a list of the things they can do, with a nice title given by the caller such as \"Send this photo with:\"

* **Error Scenario:**

- **Question title:** Android direct shared (#35760008)

- **View times**: 414

**- Error code:**

Intent shareIntent = ShareCompat.IntentBuilder .from(getActivity())

.setType(\"text/plain\")

.setText(sTitle+ \"\\n\" + urlPost)

.getIntent();

if shareIntent.resolveActivity(

getActivity().getPackageManager()) != null) startActivity(shareIntent);

**- Patch:** You should use .createChooserIntent() instead of .getIntent()

**- Related API:** createChooserIntent(), getIntent(), Intent.createChooser, intent.action\_chooser

**- Confusing API:** getIntent()