Slyce Android SDK

Version 2.5

Last updated: February 3rd, 2016

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GETTING STARTED

Overview

The Slyce Android SDK enables Android developers to easily interact with the Slyce image recognition platform.
The SDK provides the methods required to submit images and receive results.

Prerequisites

- Minimum Android OS versions 4.0 (API level 14) and higher.
- Android Studio development environment
- Slyce client ID

Setup

1. Create libs folder and place the Slyce AAR file inside.

2. Add at build.grade:

```
repositories{
 flatDir {
       dirs 'libs'
        }
       }
```

3. Add at build.grade dependencies (in your application module)

```
compile(name:'slyce', ext:'aar')
compile 'com.google.android.gms:play-services-vision:8.3.0'
```

4. It's important to initialize the Slyce object and call the Slyce.open(---) method in the extended Application class or in the main Activity of the application in order to sync the data as early as possible.

CODE INTEGRATION

SlyceRequest

```
// Implement OnSlyceRequestListener:
public class MainActivity extends Activity implements OnSlyceRequestListener {
    @Override
    public void onSlyceProgress(final long progress, final String message, String token) {
            // progress - progress percentage
            // message - progress message
            // requestToken - request unique id}

    @Override
    public void onImageDetected(String productInfo) {
            // productInfo - representing a short info about the matched 2D products}

    @Override
    public void onImageInfoReceived(JSONArray products) {
            // products - representing the additional info}

    @Override
    public void onBarcodeDetected(SlyceBarcode barcode) {}

    @Override
    public void onResultsReceived(final JSONObject products) {
       // products - founds products (might be empty if no products found)
    }

    @Override
    public void onError(final String message) {
            // message - error message }

    @Override
    public void onSlyceRequestStage(SlyceRequestStage message) {
            // message - of type StageMessage (enum) indicates stage has been completed.
            // For example: this call back will be invoked after a bitmap has been uploaded to the}

    @Override
    public void onItemDescriptionReceived(JSONObject keywords) {
            // keywords - items's keywords description }

     @Override
    public void onBarcodeInfoReceived(JSONObject products) {
            // }

    @Override
    public void onFinished() {}
}
…
```

```
}


// Create Slyce singleton object:
Slyce  slyce = Slyce.getInstance(this);

// Initiate Slyce SDK with OnSlyceOpenListener

slyce.open("YOUR_CLIENT_ID", new OnSlyceOpenListener() {

        @Override
        public void onOpenSuccess() {}

        @Override
        public void onOpenFail(String message) {}
  });


// Create SlyceRequest object for searching products by image or by image url

SlyceRequest request = new SlyceRequest(slyce, this, new JSONObject());

// Searching products by image url
String imageUrl = "http://…";
request.getProducts(imageUrl);

// Searching products by image (Bitmap)
Bitmap bitmap;
request.getProducts(bitmap);

// Cancelling SlyceRequest
request.cancel();
```

// SlyceCamera:

*** Scanning products/barcodes/QR codes.**

*** Managing the camera and displaying its preview**

Create a CameraActivity and Implement OnSlyceCameraListener:

```
public class CameraActivity extends Activity implements OnSlyceCameraListener {
    @Override
    public void onCameraBarcodeDetected(SlyceBarcode barcode) {
        // Called when barcode is found}

    @Override
    public void onCameraImageDetected(String productInfo) {
        // Called when 2D products are found}

    @Override
    public void onCameraImageInfoReceived(JSONArray products) {
       // Called when additional info for the previously recognized 2D product is found.}

    @Override
    public void onCameraSlyceProgress(long progress, String message, String token) {
      //  Reporting a numeric value and informative message.}

    @Override
    public void onCameraSlyceRequestStage(SlyceRequestStage message) {
        // Reporting the stage currently being processed.}

    @Override
    public void onCameraResultsReceived(JSONObject products) {
        // Called when 3D products are found}

    @Override
    public void onSlyceCameraError(String message) {
        // Called when an error occurred}

    @Override
    public void onTap(float x, float y) {
        // Called when the camera was touched in a specific point.}

    @Override
    public void onSnap(Bitmap bitmap) {
        // Called when the snapped bitmap is ready after SlyceCamera.snap() was invoked}

    @Override
    public void onCameraBarcodeInfoReceived(JSONObject products) {
        // Called when additional info for the previously recognised barcode is found.}

    @Override
    public void onCameraPreviewMode(boolean front) {
        // Called when camera initiate or when calling SlyceCamera.flipCamera() method}

    @Override
    public void onCameraFinished() {
```

```
    // Called when Slyce search process ended}
```

// Create and initiate Slyce single object as mentioned earlier

// UI:

The SlyceCamera constructor expects an empty SurfaceView, it will take care of displaying the camera preview.
SurfaceView should be added to the Activity xml file.

Create activity_camera.xml

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent" android:layout_height="match_parent">

   <SurfaceView
      android:id="@+id/preview"
      android:layout_width="match_parent"
      android:layout_height="match_parent" />
</RelativeLayout>
```

Please add android:configChanges to the CameraActivity at your manifest.xml

```
   <activity
         android:name=".CameraActivity"
         android:configChanges="orientation|screenSize"
       </activity>
```

Now you can create the SlyceCamera object, it requires:

* Parent Activity
* Opened Slyce object
* The surface
* Options - optional
* OnSlyceCameraListener for notifying results
* Optional - customBarcodeFormat for a set of custom barcode formats

// Create the SlyceCamera object

```
slyceCamera = new SlyceCamera(this, Slyce.getInstance(this), preview, null, this);
```

```
// create SlyceCamera object with custom barcode format set
//int barcodeFormat = Barcode.EAN_13+Barcode.EAN_8;// customize barcode detection, the default is detection of all formats.
//slyceCamera = new SlyceCamera(this, Slyce.getInstance(this), preview, null, this,barcodeFormat);
```

// Customize the next parameters if needed:

//slyceCamera.shouldPauseScanner(false); //pause the detection after a successful scan, the default is true

//slyceCamera.setShouldPauseScannerDelayTime(5000); // *set a custom time in milliseconds for resuming auto scanning after a successful scan,*the default is 3000

//slyceCamera.setContinuousRecognition(false); // disable/enable continuous recognition ,the default is true

//slyceCamera.setContinuousRecognition2D(false); // disable/enable 2D continuous recognition the default is true

//slyceCamera.setContinuousRecognitionBarcodes(false); // disable/enable Barcode continuous recognition the default is true

You need to handle the life cycle of SlyceCamera:

```
@Override
protected void onResume() {
    super.onResume();
    slyceCamera.start();
}

@Override
protected void onPause() {
    super.onPause();
    slyceCamera.stop();
}
```

Now you can start scanning images/barcodes

SlyceCameraFragment

Full UI implementation of SlyceCamera.

Create FullUIActivity and its xml file activity_full_ui.xml

Please add android:configChanges to the CameraActivity at your manifest.xml

```
<activity
        …
        android:configChanges=“orientation|screenSize”
        …
      </activity>
```

Please add a container for SlyceCameraFragment at activity_full_ui.xml

```
<FrameLayout
      android:id="@+id/slyce_camera_fragment_container"
      android:layout_width="match_parent"
      android:layout_height="match_parent">
</FrameLayout>
```

Adding SlyceCameraFragment after Slyce SDK successfully opened.

```
Slyce slyce = Slyce.getInstance(activity);

slyce.open(clientID, new OnSlyceOpenListener() {
    @Override
    public void onOpenSuccess() {
     // Add SlyceCameraFragment to the FullUIActivity}

    @Override
    public void onOpenFail(String message) {

    }
});
```

Add SlyceCameraFragment to the FullUIActivity

SlyceCameraFragment.newInstance() expects 3 or 5 or 6 or 7 parameters in this order (3 factory methods in total):

1. JsonObject Options - optional (can be null)
2. boolean - enabling/disabling the scanner
3. boolean - pause/resume the automatic 2D image/barcode scanner after 2D image/barcode detection.
4. boolean - pause/resume the automatic 2D image scanner after 2D image detection.
5. int - set a custom delay time in milliseconds after each detection and resume automatic scanner (the default is 3000).
6. Int – set of custom barcode formats, the default is "0" – detection of all available formats (example – Barcode.EAN_13+Barcode.EAN_8)

```
SlyceCameraFragment slyceFragment = SlyceCameraFragment.newInstance(null, true, true);
// SlyceCameraFragment slyceFragment = SlyceCameraFragment.newInstance(null, true,
true,false,false);
// SlyceCameraFragment slyceFragment = SlyceCameraFragment.newInstance(null, true,
true,false,false,5000);
// SlyceCameraFragment slyceFragment = SlyceCameraFragment.newInstance(null, true,
true,false,false,5000,0);
```

Additional available customizations:

```
//All customized fragments must extend BaseDialogFragment class and implement onDismiss method (example provided in the demo application)

//customize the color of the circular progress
//slyceFragment.setCircularProgressColor(Color.GREEN);

//replace the default "Scanning Tips" screen with a custom fragment (BaseDialogFragment)
//slyceFragment.setCustomHelpScreen(getCustomDialogScreen(CustomHelpScreen.SCAN_TIPS_DIALOG));

//replace the default "not found" screen with a custom fragment (BaseDialogFragment)
//slyceFragment.setCustomNotFoundScreen(getCustomDialogScreen(CustomHelpScreen.NOT_FOUND_DIALOG));

//add custom buttons with custom fragments dialogs with a custom fragment (BaseDialogFragment), Position of the custom button are in percent, when 100% is of the screen(both for x and y).
//slyceFragment.addCustomScreenWithButton(getCustomDialogScreen(CustomHelpScreen.GENERAL_DIALOG),50.9f,50f,R.drawable.slyce_flash,this);
```

```
FragmentTransaction transaction = getFragmentManager().beginTransaction();
    transaction.replace(R.id.slyce_fragment_container, slyceFragment);
    transaction.addToBackStack(null);
    transaction.commit();
```

It's important to add SlyceCameraFragment to your Activity BackStack

OnSlyceCameraFragmentListener

In order to receive results please implement OnSlyceCameraFragmentListener at your Activity. Please note its a must!

```
public class SlyceActivity extends Activity implements OnSlyceCameraFragmentListener {
  @Override
   public void onCameraFragmentBarcodeDetected(SlyceBarcode slyceBarcode) {
     // Called when barcode is found}

   @Override
   public void onCameraFragmentImageDetected(String info) {
     // Called when 2D products are found}

   @Override
   public void onCameraFragmentImageInfoReceived(JSONArray products) {
     // Called when additional info for the previously recognised 2D product is found.}

   @Override
```

```
    public void onCameraFragmentResultsReceived(JSONObject results) {
        // Called when 3D products are found}

    @Override
    public void onCameraFragmentError(String message) {
        // Called when an error occurred}

    @Override
    public void onCameraFragmentBarcodeInfoReceived(JSONObject products) {
        // Called when additional info for the previously recognised barcode is found. }

    @Override
    public void onCameraFragmentFinished() {
        // Called when Slyce search process ended}
 }
…
}
```

- execute can be called only once per SlyceProductsRequest
- please note that any call to execute should be triggered after Slyce SDK was successfully opened (initialised).
- requestToken is a unique identifier per a request
- canceled request cannot be resumed

Migrating from SDK 1.x to 2.x

SlyceRequest:
SlyceProductsRequest changed to **SlyceRequest** and it has only one constructor now.

OnSlyceRequestListener methods

* Changed:
  * on2DRecognition changed to onImageDetected
  * on3DRecognition changed to onResultsReceived
  * onStageLevelFinish changed to onSlyceRequestStage
* Added:
  * onBarcodeDetected
  * onImageInfoReceived
  * onFinished
  * onItemDescriptionReceived

New Methods:
getProducts(Bitmap), getProducts(String) for getting a list of products.

getItemDescription(Bitmap), getItemDescription(String) for getting a keywords description of the given image (bitmap/url)

Example code: getting products with image url

```
SlyceRequest request = new SlyceRequest(slyce, this, new JSONObject());
request.getProducts(image_url);
```

Permissions - no need to add app permissions at the AndroidManifest.xml

Slyce singletone:

Slyce.getInstance(Context context) takes only one parameter now.

“ClientID” should be passed now to Slyce.open(…) method.

Example:

```
Slyce slyce = Slyce.getInstance(this);

slyce.open(clientId, new OnSlyceOpenListener() {

    @Override
    public void onOpenSuccess() {

    }

    @Override
    public void onOpenFail(String message) {

    }
});
```

Migrating from SDK 2.1 to 2.2

OnSlyceRequestListener methods

* Added:
  * onBarcodeInfoReceived

OnSlyceCameraListener methods

* Added:
  * onCameraBarcodeInfoReceived

  * onCameraPreviewMode

OnSlyceCameraFragmentListener methods

* Added:
  * onCameraFragmentBarcodeInfoReceived

Migrating from SDK 2.2.x to 2.3.x

Add at build.grade dependency to play-services-vision library(in your application module)
compile 'com.google.android.gms:play-services-vision:8.3.0'

Migrating from SDK 2.3.x to 2.4.x

- **Methods added to SLyceCamera class**
  - setShouldPauseScannerDelayTime
  - setContinuousRecognition2D
  - setContinuousRecognitionBarcodes