Fingerprint Authentication

Main.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:app="http://schemas.android.com/apk/res-auto"  
xmlns:tools="http://schemas.android.com/tools"  
android:layout\_width="match\_parent"  
android:layout\_height="match\_parent"  
android:id="@+id/main\_layout"  
android:visibility="gone"  
tools:context=".MainActivity">  
  
<TextView  
android:layout\_width="167dp"  
android:layout\_height="56dp"  
android:text="Login"  
android:textColor="@color/black"  
android:textSize="50dp"  
app:layout\_constraintBottom\_toBottomOf="parent"  
app:layout\_constraintEnd\_toEndOf="parent"  
app:layout\_constraintStart\_toStartOf="parent"  
app:layout\_constraintTop\_toTopOf="parent"  
app:layout\_constraintVertical\_bias="0.477" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

Java

public class MainActivity extends AppCompatActivity {  
  
private static final int *REQUEST\_CODE* =10101 ;  
BiometricPrompt biometricPrompt;  
BiometricPrompt promptInfo;  
ConstraintLayout mMain\_Layout;  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
mMain\_Layout.findViewById(R.id.*main\_layout*);  
  
BiometricManager biometricManager = this.(BiometricManager);  
switch (biometricManager.canAuthenticate(BIOMETRIC\_STRONG | DEVICE\_CREDENTIAL)) {  
case BIOMETRIC\_SUCCESS:  
 Log.d("MY\_APP\_TAG", "App can authenticate using biometrics.");  
break;  
case BIOMETRIC\_ERROR\_NO\_HARDWARE:  
 Log.e("MY\_APP\_TAG", "No biometric features available on this device.");  
break;  
case BIOMETRIC\_ERROR\_HW\_UNAVAILABLE:  
 Log.e("MY\_APP\_TAG", "Biometric features are currently unavailable.");  
break;  
case BIOMETRIC\_ERROR\_NONE\_ENROLLED:  
*// Prompts the user to create credentials that your app accepts.*final Intent enrollIntent = new Intent(Settings.ACTION\_BIOMETRIC\_ENROLL);  
 enrollIntent.putExtra(Settings.EXTRA\_BIOMETRIC\_AUTHENTICATORS\_ALLOWED,  
 BIOMETRIC\_STRONG | DEVICE\_CREDENTIAL);  
 startActivityForResult(enrollIntent, REQUEST\_CODE);  
break;  
 }  
 }  
}

Login and signup

Main activity.xml

*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout  
xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:app="http://schemas.android.com/apk/res-auto"  
xmlns:tools="http://schemas.android.com/tools"  
xmlns:card\_view="http://schemas.android.com/apk/res-auto"  
android:layout\_width="match\_parent"  
android:layout\_height="match\_parent"  
android:orientation="vertical"  
android:gravity="center"  
android:background="@drawable/pagebkg"  
tools:context=".MainActivity">  
  
<androidx.cardview.widget.CardView  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="30dp"  
app:cardCornerRadius="30dp"  
app:cardElevation="20dp"  
android:background="@drawable/customedittext">  
<LinearLayout  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:orientation="vertical"  
android:layout\_gravity="center\_horizontal"  
android:padding="24dp">  
<TextView  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:text="Login"  
android:id="@+id/loginText"  
android:textSize="36sp"  
android:textAlignment="center"  
android:textStyle="bold"  
android:textColor="@color/purple"/>  
<EditText  
android:layout\_width="match\_parent"  
android:layout\_height="50dp"  
android:id="@+id/username"  
android:background="@drawable/customedittext"  
android:drawableLeft="@drawable/baseline\_person\_24"  
android:drawablePadding="8dp"  
android:hint="Username"  
android:padding="8dp"  
android:textColor="@color/black"  
android:textColorHighlight="@color/cardview\_dark\_background"  
android:layout\_marginTop="40dp"/>  
<EditText  
android:layout\_width="match\_parent"  
android:layout\_height="50dp"  
android:id="@+id/password"  
android:background="@drawable/customedittext"  
android:drawableLeft="@drawable/baseline\_lock\_24"  
android:drawablePadding="8dp"  
android:hint="Password"  
android:padding="8dp"  
android:inputType="textPassword"  
android:textColor="@color/black"  
android:textColorHighlight="@color/cardview\_dark\_background"  
android:layout\_marginTop="20dp"/>  
  
<TextView  
android:id="@+id/textView2"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:layout\_marginTop="20dp"  
android:background="#8682f7"  
android:text="Forgot Password?"  
android:textColor="#fff"  
android:textStyle="bold" />  
  
<Button  
android:id="@+id/loginButton"  
android:layout\_width="match\_parent"  
android:layout\_height="60dp"  
android:layout\_marginTop="30dp"  
android:backgroundTint="@color/purple"  
android:text="Login"  
android:textSize="18sp"  
app:cornerRadius="20dp" />  
</LinearLayout>  
</androidx.cardview.widget.CardView>  
  
<TextView  
android:id="@+id/signupText"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:layout\_marginBottom="10dp"  
android:padding="8dp"  
  
android:text="Not yet registered? SignUp Now"  
android:textAlignment="center"  
android:textColor="#000"  
android:textSize="14sp"  
android:textStyle="bold" />  
</LinearLayout>

Register .xml

*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout  
xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:app="http://schemas.android.com/apk/res-auto"  
xmlns:tools="http://schemas.android.com/tools"  
xmlns:card\_view="http://schemas.android.com/apk/res-auto"  
android:layout\_width="match\_parent"  
android:layout\_height="match\_parent"  
android:orientation="vertical"  
android:gravity="center"  
android:background="@drawable/pagebkg"  
tools:context=".MainActivity">  
  
<androidx.cardview.widget.CardView  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:layout\_margin="30dp"  
app:cardCornerRadius="30dp"  
app:cardElevation="20dp"  
android:background="@drawable/customedittext">  
<LinearLayout  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:orientation="vertical"  
android:layout\_gravity="center\_horizontal"  
android:padding="24dp">  
<TextView  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:text="Register"  
android:id="@+id/loginText"  
android:textSize="36sp"  
android:textAlignment="center"  
android:textStyle="bold"  
android:textColor="@color/purple"/>  
<EditText  
android:layout\_width="match\_parent"  
android:layout\_height="50dp"  
android:id="@+id/username"  
android:background="@drawable/customedittext"  
android:drawableLeft="@drawable/baseline\_person\_24"  
android:drawablePadding="8dp"  
android:hint="Username"  
android:padding="8dp"  
android:textColor="@color/black"  
android:textColorHighlight="@color/cardview\_dark\_background"  
android:layout\_marginTop="40dp"/>  
<EditText  
android:layout\_width="match\_parent"  
android:layout\_height="50dp"  
android:id="@+id/password"  
android:background="@drawable/customedittext"  
android:drawableLeft="@drawable/baseline\_lock\_24"  
android:drawablePadding="8dp"  
android:hint="Password"  
android:padding="8dp"  
android:inputType="textPassword"  
android:textColor="@color/black"  
android:textColorHighlight="@color/cardview\_dark\_background"  
android:layout\_marginTop="20dp"/>  
<EditText  
android:layout\_width="match\_parent"  
android:layout\_height="50dp"  
android:id="@+id/password1"  
android:background="@drawable/customedittext"  
android:drawableLeft="@drawable/baseline\_lock\_24"  
android:drawablePadding="8dp"  
android:hint="Conform Password"  
android:padding="8dp"  
android:inputType="textPassword"  
android:textColor="@color/black"  
android:textColorHighlight="@color/cardview\_dark\_background"  
android:layout\_marginTop="20dp"/>  
  
  
<Button  
android:id="@+id/RegisterButton"  
android:layout\_width="match\_parent"  
android:layout\_height="60dp"  
android:layout\_marginTop="30dp"  
android:backgroundTint="@color/purple"  
android:text="Register account"  
android:textSize="18sp"  
app:cornerRadius="20dp" />  
</LinearLayout>  
</androidx.cardview.widget.CardView>  
  
<TextView  
android:id="@+id/signupText"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:layout\_marginBottom="10dp"  
android:padding="8dp"  
  
android:text="Aldready have an account?"  
android:textAlignment="center"  
android:textColor="#000"  
android:textSize="24sp"  
android:textStyle="bold" />  
  
<Button  
android:id="@+id/loginButton1"  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:layout\_marginTop="30dp"  
android:backgroundTint="@color/purple"  
android:text="Login"  
android:textSize="18sp"  
app:cornerRadius="20dp" />  
  
</LinearLayout>

Main activity.java

package com.example.myloginapp;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
  
Button b1,b2;  
TextView t1,t2;  
EditText e1,e2;  
  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
b1=(Button)findViewById(R.id.*loginButton*);  
t2=(TextView)findViewById(R.id.*textView2*);  
e1=(EditText)findViewById(R.id.*username*);  
e2=(EditText)findViewById(R.id.*password*);  
b1.setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View view) {  
Intent i =new Intent(getApplicationContext(),RegisterActivity.class);  
 startActivity(i);  
Toast.*makeText*(getApplicationContext(),"Login Successful",Toast.*LENGTH\_LONG*).show();  
 }  
 });  
 }  
}

register acitivity.java

package com.example.myloginapp;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
public class RegisterActivity extends AppCompatActivity {  
  
Button bk1;  
  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_register*);  
  
bk1=(Button)findViewById(R.id.*loginButton1*);  
bk1.setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View view) {  
Intent intent =new Intent(getApplicationContext(),MainActivity.class);  
 startActivity(intent);  
 }  
 });  
  
  
 }  
}

voice

*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
xmlns:app="http://schemas.android.com/apk/res-auto"  
xmlns:tools="http://schemas.android.com/tools"  
android:layout\_width="match\_parent"  
android:layout\_height="match\_parent"  
android:orientation="vertical"  
tools:context=".MainActivity">  
*<!--this button will convert voice to text-->*<Button  
android:layout\_width="match\_parent"  
android:layout\_height="wrap\_content"  
android:text="Convert voice to text"  
android:id="@+id/btn\_convert"/>  
  
*<!--Textview will show the text message which come from your voice message-->*<TextView  
android:layout\_width="wrap\_content"  
android:layout\_height="wrap\_content"  
android:id="@+id/tv\_message"/>  
  
  
</LinearLayout>

Java

package com.example.voice;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.speech.RecognizerIntent;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
  
import java.util.ArrayList;  
import java.util.Locale;  
  
public class MainActivity extends AppCompatActivity {  
Button btn\_convert;  
TextView tv\_message;  
  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
btn\_convert = findViewById(R.id.*btn\_convert*);  
tv\_message = findViewById(R.id.*tv\_message*);  
btn\_convert.setOnClickListener(new View.OnClickListener() {  
@Override  
public void onClick(View v) {  
Intent intent = new Intent(RecognizerIntent.*ACTION\_RECOGNIZE\_SPEECH*);  
intent.putExtra(RecognizerIntent.*EXTRA\_LANGUAGE\_MODEL*,  
RecognizerIntent.*LANGUAGE\_MODEL\_FREE\_FORM*);  
intent.putExtra(RecognizerIntent.*EXTRA\_LANGUAGE*,  
Locale.*getDefault*());  
intent.putExtra(RecognizerIntent.*EXTRA\_PROMPT*,  
"Speak Now....");  
 startActivityForResult(intent, 1);  
  
 }  
 });  
*//to recieve the output of startActivity for result Intent*}  
  
@Override  
protected void onActivityResult(int requestCode,int resultCode, Intent data) {  
super.onActivityResult(requestCode,resultCode, data);  
if(requestCode==1 && resultCode==*RESULT\_OK* && data !=null)  
 {  
ArrayList<String>arrayList=data.getStringArrayListExtra(RecognizerIntent.*EXTRA\_RESULTS*);  
*//set the message into textview*tv\_message.setText(arrayList.get(0).toString());  
  
 }  
 }  
}

morse code

activity\_main.xml:

=======================================================================

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

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:id="@+id/activity\_main"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context="com.ssaurel.mc.MainActivity">

<EditText

android:id="@+id/txt"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginTop="70dp"

android:layout\_centerHorizontal="true"/>

<LinearLayout

android:id="@+id/ctrls"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerHorizontal="true"

android:layout\_below="@id/txt"

android:layout\_marginTop="30dp"

android:orientation="horizontal">

<Button

android:id="@+id/toAlphaBtn"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="To Alpha"

android:layout\_marginRight="15dp"/>

<Button

android:id="@+id/toMorseBtn"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="To Morse"/>

</LinearLayout>

<TextView

android:id="@+id/result"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerHorizontal="true"

android:textSize="18sp"

android:layout\_below="@id/ctrls"

android:layout\_marginTop="50dp"

/>

</RelativeLayout>

Java

package com.ssaurel.mc;

import java.util.HashMap;

public class MorseCode {

static String[] ALPHA = { "a", "b", "c", "d", "e", "f", "g", "h", "i", "j", "k", "l", "m", "n", "o", "p", "q", "r",

"s", "t", "u", "v", "w", "x", "y", "z", "1", "2", "3", "4", "5", "6", "7", "8", "9", "0"};

static String[] MORSE = { ".-", "-...", "-.-.", "-..", ".", "..-.", "--.", "....", "..", ".---", "-.-", ".-..",

"--", "-.", "---", ".--.", "--.-", ".-.", "...", "-", "..-", "...-", ".--", "-..-", "-.--", "--..", ".----",

"..---", "...--", "....-", ".....", "-....", "--...", "---..", "----.", "-----"};

public static HashMap<String, String> ALPHA\_TO\_MORSE = new HashMap<>();

public static HashMap<String, String> MORSE\_TO\_ALPHA = new HashMap<>();

static {

for (int i = 0; i < ALPHA.length && i < MORSE.length; i++) {

ALPHA\_TO\_MORSE.put(ALPHA[i], MORSE[i]);

MORSE\_TO\_ALPHA.put(MORSE[i], ALPHA[i]);

}

}

public static String morseToAlpha(String morseCode) {

StringBuilder builder = new StringBuilder();

String[] words = morseCode.trim().split(" ");

for (String word : words) {

for (String letter : word.split(" ")) {

String alpha = MORSE\_TO\_ALPHA.get(letter);

builder.append(alpha);

}

builder.append(" ");

}

return builder.toString().toUpperCase();

}

public static String alphaToMorse(String englishCode) {

StringBuilder builder = new StringBuilder();

String[] words = englishCode.trim().split(" ");

for (String word : words) {

for (int i = 0; i < word.length(); i++) {

String morse = ALPHA\_TO\_MORSE.get(word.substring(i, i + 1).toLowerCase());

builder.append(morse).append(" ");

}

builder.append(" ");

}

return builder.toString();

}

}

OCR

Xml

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

<**android.support.constraint.ConstraintLayout**

android:id="@+id/activity\_main"

xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:app="http://schemas.android.com/apk/res-auto"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context="com.truiton.mobile.vision.ocr.MainActivity">

<**ImageView**

android:id="@+id/imageView"

android:layout\_width="200dp"

android:layout\_height="200dp"

android:layout\_marginTop="16dp"

app:layout\_constraintLeft\_toLeftOf="parent"

app:layout\_constraintRight\_toRightOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:srcCompat="@mipmap/truiton"

tools:layout\_constraintLeft\_creator="1"

tools:layout\_constraintRight\_creator="1"/>

<**Button**

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginBottom="8dp"

android:text="Scan Text"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintLeft\_toLeftOf="parent"

app:layout\_constraintRight\_toRightOf="parent"

tools:layout\_constraintLeft\_creator="1"

tools:layout\_constraintRight\_creator="1"

/>

<**TextView**

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="40dp"

android:text="Scan Results:"

android:textAllCaps="false"

android:textStyle="normal|bold"

app:layout\_constraintLeft\_toLeftOf="parent"

app:layout\_constraintRight\_toRightOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/imageView"

tools:layout\_constraintLeft\_creator="1"

tools:layout\_constraintRight\_creator="1"/>

<**ScrollView**

android:layout\_width="0dp"

android:layout\_height="0dp"

android:layout\_marginTop="8dp"

android:paddingLeft="5dp"

android:paddingRight="5dp"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintHorizontal\_bias="1.0"

app:layout\_constraintLeft\_toLeftOf="parent"

app:layout\_constraintRight\_toRightOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/textView"

tools:layout\_constraintTop\_creator="1"

tools:layout\_constraintRight\_creator="1"

tools:layout\_constraintBottom\_creator="1"

tools:layout\_constraintLeft\_creator="1">

<**LinearLayout**

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="vertical">

<**TextView**

android:id="@+id/results"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="8dp"

app:layout\_constraintLeft\_toLeftOf="parent"

app:layout\_constraintRight\_toRightOf="parent"

tools:layout\_constraintLeft\_creator="1"

tools:layout\_constraintRight\_creator="1"

tools:layout\_constraintTop\_creator="1"/>

</**LinearLayout**>

</**ScrollView**>

</**android.support.constraint.ConstraintLayout**>

Java

**package** *com.truiton.mobile.vision.ocr*;

**import** *android.Manifest*;

**import** *android.content.Context*;

**import** *android.content.Intent*;

**import** *android.content.pm.PackageManager*;

**import** *android.graphics.Bitmap*;

**import** *android.graphics.BitmapFactory*;

**import** *android.net.Uri*;

**import** *android.os.Bundle*;

**import** *android.os.Environment*;

**import** *android.provider.MediaStore*;

**import** *android.support.annotation.NonNull*;

**import** *android.support.v4.app.ActivityCompat*;

**import** *android.support.v4.content.FileProvider*;

**import** *android.support.v7.app.AppCompatActivity*;

**import** *android.util.Log*;

**import** *android.util.SparseArray*;

**import** *android.view.View*;

**import** *android.widget.Button*;

**import** *android.widget.TextView*;

**import** *android.widget.Toast*;

**import** *com.google.android.gms.vision.Frame*;

**import** *com.google.android.gms.vision.text.Text*;

**import** *com.google.android.gms.vision.text.TextBlock*;

**import** *com.google.android.gms.vision.text.TextRecognizer*;

**import** *java.io.File*;

**import** *java.io.FileNotFoundException*;

**public** **class** MainActivity **extends** AppCompatActivity {

**private** **static** **final** **String** LOG\_TAG = "Text API";

**private** **static** **final** **int** PHOTO\_REQUEST = 10;

**private** TextView scanResults;

**private** Uri imageUri;

**private** TextRecognizer detector;

**private** **static** **final** **int** REQUEST\_WRITE\_PERMISSION = 20;

**private** **static** **final** **String** SAVED\_INSTANCE\_URI = "uri";

**private** **static** **final** **String** SAVED\_INSTANCE\_RESULT = "result";

@Override

**protected** **void** onCreate(Bundle savedInstanceState) {

**super**.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

Button button = (Button) findViewById(R.id.button);

scanResults = (TextView) findViewById(R.id.results);

**if** (savedInstanceState != **null**) {

imageUri = Uri.parse(savedInstanceState.getString(SAVED\_INSTANCE\_URI));

scanResults.setText(savedInstanceState.getString(SAVED\_INSTANCE\_RESULT));

}

detector = new TextRecognizer.Builder(getApplicationContext()).build();

button.setOnClickListener(new View.OnClickListener() {

@Override

**public** **void** onClick(View view) {

ActivityCompat.requestPermissions(MainActivity.this, new

**String**[]{Manifest.permission.WRITE\_EXTERNAL\_STORAGE}, REQUEST\_WRITE\_PERMISSION);

}

});

}

@Override

**public** **void** onRequestPermissionsResult(**int** requestCode, @NonNull **String**[] permissions, @NonNull **int**[] grantResults) {

**super**.onRequestPermissionsResult(requestCode, permissions, grantResults);

**switch** (requestCode) {

**case** REQUEST\_WRITE\_PERMISSION:

**if** (grantResults.length > 0 && grantResults[0] == PackageManager.PERMISSION\_GRANTED) {

takePicture();

} **else** {

Toast.makeText(MainActivity.this, "Permission Denied!", Toast.LENGTH\_SHORT).show();

}

}

}

@Override

**protected** **void** onActivityResult(**int** requestCode, **int** resultCode, Intent data) {

**if** (requestCode == PHOTO\_REQUEST && resultCode == RESULT\_OK) {

launchMediaScanIntent();

**try** {

Bitmap bitmap = decodeBitmapUri(**this**, imageUri);

**if** (detector.isOperational() && bitmap != **null**) {

Frame frame = new Frame.Builder().setBitmap(bitmap).build();

SparseArray<TextBlock> textBlocks = detector.detect(frame);

**String** blocks = "";

**String** lines = "";

**String** words = "";

**for** (**int** index = 0; index < textBlocks.size(); index++) {

//extract scanned text blocks here

TextBlock tBlock = textBlocks.valueAt(index);

blocks = blocks + tBlock.getValue() + "\n" + "\n";

**for** (Text line : tBlock.getComponents()) {

//extract scanned text lines here

lines = lines + line.getValue() + "\n";

**for** (Text element : line.getComponents()) {

//extract scanned text words here

words = words + element.getValue() + ", ";

}

}

}

**if** (textBlocks.size() == 0) {

scanResults.setText("Scan Failed: Found nothing to scan");

} **else** {

scanResults.setText(scanResults.getText() + "Blocks: " + "\n");

scanResults.setText(scanResults.getText() + blocks + "\n");

scanResults.setText(scanResults.getText() + "---------" + "\n");

scanResults.setText(scanResults.getText() + "Lines: " + "\n");

scanResults.setText(scanResults.getText() + lines + "\n");

scanResults.setText(scanResults.getText() + "---------" + "\n");

scanResults.setText(scanResults.getText() + "Words: " + "\n");

scanResults.setText(scanResults.getText() + words + "\n");

scanResults.setText(scanResults.getText() + "---------" + "\n");

}

} **else** {

scanResults.setText("Could not set up the detector!");

}

} **catch** (Exception e) {

Toast.makeText(**this**, "Failed to load Image", Toast.LENGTH\_SHORT)

.show();

Log.e(LOG\_TAG, e.toString());

}

}

}

**private** **void** takePicture() {

Intent intent = new Intent(MediaStore.ACTION\_IMAGE\_CAPTURE);

File photo = new File(Environment.getExternalStorageDirectory(), "picture.jpg");

imageUri = FileProvider.getUriForFile(MainActivity.this,

BuildConfig.APPLICATION\_ID + ".provider", photo);

intent.putExtra(MediaStore.EXTRA\_OUTPUT, imageUri);

startActivityForResult(intent, PHOTO\_REQUEST);

}

@Override

**protected** **void** onSaveInstanceState(Bundle outState) {

**if** (imageUri != **null**) {

outState.putString(SAVED\_INSTANCE\_URI, imageUri.toString());

outState.putString(SAVED\_INSTANCE\_RESULT, scanResults.getText().toString());

}

**super**.onSaveInstanceState(outState);

}

**private** **void** launchMediaScanIntent() {

Intent mediaScanIntent = new Intent(Intent.ACTION\_MEDIA\_SCANNER\_SCAN\_FILE);

mediaScanIntent.setData(imageUri);

**this**.sendBroadcast(mediaScanIntent);

}

**private** Bitmap decodeBitmapUri(Context ctx, Uri uri) **throws** FileNotFoundException {

**int** targetW = 600;

**int** targetH = 600;

BitmapFactory.Options bmOptions = new BitmapFactory.Options();

bmOptions.inJustDecodeBounds = **true**;

BitmapFactory.decodeStream(ctx.getContentResolver().openInputStream(uri), **null**, bmOptions);

**int** photoW = bmOptions.outWidth;

**int** photoH = bmOptions.outHeight;

**int** scaleFactor = Math.min(photoW / targetW, photoH / targetH);

bmOptions.inJustDecodeBounds = **false**;

bmOptions.inSampleSize = scaleFactor;

**return** BitmapFactory.decodeStream(ctx.getContentResolver()

.openInputStream(uri), **null**, bmOptions);

}

}