**ZXing**

**Apa itu ZXing?**

Dikutip dari situs [github](https://github.com/zxing/zxing" \t "_blank)-nya bahwasanya ZXing adalah sebagai berikut.

*ZXing (“Zebra crossing”) is an open-source, multi-format 1D/2D barcode image processing library implemented in Java, with ports to other languages.*

Jadi, ZXing merupakan suatu pustaka kode terbuka untuk menangani fungsi-fungsi barcode scanner. Untuk penggunaannya di Android terdapat banyak pustaka-pustaka lain yang bisa Anda gunakan dan salah satunya yang bisa Anda gunakan adalah sebagai berikut.

**[dm77/barcodescanner](https://github.com/dm77/barcodescanner)**

[barcodescanner - Barcode Scanner Libraries for Android](https://github.com/dm77/barcodescanner)

[github.com](https://github.com/dm77/barcodescanner)

Developer tersebut telah menulis ulang fungsi-fungsi utama ZXing agar lebih mudah digunakan di Android.

**Memulai Contoh Projek**

Buat projek di Android Studio dengan nama **Scannerku** dan pastikan Anda meng-checklist Kotlin sebagai bahasa pemrogramannya.

**Konfigurasi build.gradle**

Berdasarkan dari situs github-nya <https://github.com/dm77/barcodescanner> kita harus menambahkan dependency berikut pada file **build.gradle**.

implementation 'me.dm7.barcodescanner:zxing:1.9.8'

Apakah Anda mendapatkan pesan error berikut setelah melakukan sync gradle.

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Konflik dependency build.gradle

Pada gambar diatas, pesan error tersebut terjadi dikarenakan adanya konflik antara dependency yang Anda masukkan. Dimana, konflik dependency diatas terjadi karena ada konflik antara dependency com.android.support:appcompat-v7:27.1.1 yang telah memakai versi terbaru sedangkan, dependency me.dm7.barcodescanner:zxing:1.9.8 ada memakai dependency bawaannya sendiri namun, dengan versi yang berbeda yang dari punya Anda sehingga terjadilah konflik tersebut. Jika Anda sorot kursor Anda ke pesan error-nya maka, Android Studio akan memberitahu dependency apa saja yang konflik. Contoh, diatas yang konflik itu adalah com.android.support:support-media-compat yang masih memakai versi 25.3.1. Untuk solusinya ada 2 yaitu, sebagai berikut.

1. Anda paksa dependency yang konflik tersebut ikut dengan versi Anda caranya ialah dengan menambahkan dependency konflik tersebut ke file **build.gradle**
2. Yang satu lagi ialah Anda membuat pengecualian di dependency parent-nya yang menyebabkan konflik tadi. Pada contoh diatas yang menyebabkan konflik adalah dependency me.dm7.barcodescanner:zxing:1.9.8 dan untuk membuat pengecualiannya tinggal Anda tambahkan keyword exclude seperti berikut dimana, maksud dari syntax tersebut adalah mengecualikan dependency dari com.android.support milik si me.dm7.barcodescanner:zxing:1.9.8 tidak ikut pada projek Anda.

implementation('me.dm7.barcodescanner:zxing:1.9.8') {  
 exclude group: 'com.android.support'  
}

**Permissions**

Untuk menggunakan fitur kamera Anda harus menambahkan permission kamera di **AndroidManifest.xml** seperti berikut.

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

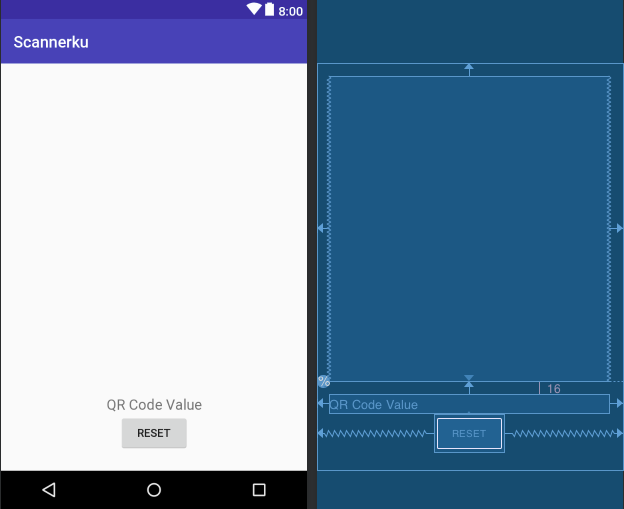
**Layout Utama**

Silakan buka file **activity\_main.xml**dan isi dengan source code berikut.

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.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:padding="16dp"  
 tools:context=".MainActivity">  
  
 <android.support.constraint.Guideline  
 android:id="@+id/guideline"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:orientation="horizontal"  
 app:layout\_constraintGuide\_percent="0.8" />  
  
 <TextView  
 android:id="@+id/text\_view\_qr\_code\_value"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="QR Code Value"  
 android:textSize="18sp"  
 android:gravity="center\_horizontal"  
 android:layout\_marginTop="16dp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/guideline" />  
  
 <Button  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:id="@+id/button\_reset"  
 android:text="Reset"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/text\_view\_qr\_code\_value"  
 />  
  
 <FrameLayout  
 android:id="@+id/frame\_layout\_camera"  
 android:layout\_width="match\_parent"  
 android:layout\_height="0dp"  
 app:layout\_constraintBottom\_toTopOf="@+id/guideline"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
</android.support.constraint.ConstraintLayout>

Dan output dari source code layout diatas adalah seperti berikut.

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Design Layout Utama

**Penambahan Fungsi Utama**

Selanjutnya, Anda buka file **MainActivity.kt** dan isi dengan source code berikut.

package com.ysn.scannerku  
  
import android.Manifest  
import android.content.pm.PackageManager  
import android.os.Build  
import android.os.Bundle  
import android.support.v7.app.AppCompatActivity  
import android.view.View  
import com.google.zxing.Result  
import kotlinx.android.synthetic.main.activity\_main.\*  
import me.dm7.barcodescanner.zxing.ZXingScannerView  
  
class MainActivity : AppCompatActivity(), ZXingScannerView.ResultHandler, View.OnClickListener {  
  
 private lateinit var mScannerView: ZXingScannerView  
 private var isCaptured = false  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.*activity\_main*)  
 initScannerView()  
 initDefaultView()  
 button\_reset.setOnClickListener(this)  
 }  
  
 private fun initScannerView() {  
 mScannerView = ZXingScannerView(this)  
 mScannerView.setAutoFocus(true)  
 mScannerView.setResultHandler(this)  
 frame\_layout\_camera.addView(mScannerView)  
 }  
  
 override fun onStart() {  
 mScannerView.startCamera()  
 doRequestPermission()  
 super.onStart()  
 }  
  
 private fun doRequestPermission() {  
 if (Build.VERSION.*SDK\_INT* >= Build.VERSION\_CODES.*M*) {  
 if (checkSelfPermission(Manifest.permission.*CAMERA*) != PackageManager.*PERMISSION\_GRANTED*) {  
 requestPermissions(*arrayOf*(Manifest.permission.*CAMERA*), 100)  
 }  
 }  
 }  
  
 override fun onRequestPermissionsResult(requestCode: Int, permissions: Array<out String>, grantResults: IntArray) {  
 when (requestCode) {  
 100 -> {  
 initScannerView()  
 }  
 else -> {  
 /\* nothing to do in here \*/  
 }  
 }  
 }  
  
 override fun onPause() {  
 mScannerView.stopCamera()  
 super.onPause()  
 }  
  
 private fun initDefaultView() {  
 text\_view\_qr\_code\_value.*text* = "QR Code Value"  
 button\_reset.*visibility* = View.*GONE* }  
  
 override fun handleResult(rawResult: Result?) {  
 text\_view\_qr\_code\_value.*text* = rawResult?.*text* button\_reset.*visibility* = View.*VISIBLE* }  
  
 override fun onClick(view: View?) {  
 when (view?.*id*) {  
 R.id.*button\_reset* -> {  
 mScannerView.resumeCameraPreview(this)  
 initDefaultView()  
 }  
 else -> {  
 /\* nothing to do in here \*/  
 }  
 }  
 }  
  
}

Penjelasan:

Untuk menambahkan fungsi scanner pada ZXing Anda harus menggunakan ZXingScannerView.ResultHandler dimana, *callback* ini berfungsi untuk menerima deteksi otomatis dari hasil scanner si ZXing. Selanjutnya, initialize object ZXingScannerView dan masukkan ke FrameLayout yang sudah Anda buat di xml-nya tadi. Kemudian, dikarenakan fitur ini menggunakan kamera jelas Anda memerlukan permission camera dimana, untuk Android versi M keatas itu memerlukan runtime permission sehingga pada kode diatas Anda ada menambahkan runtime permission. Kemudian, ketika method handleResult terpanggil maka, Anda ada melakukan setText pada text\_view\_qr\_code\_value dan menampilkan button\_reset . Selanjutnya, pada button\_reset Anda juga ada menambahkan onClickListener dimana, didalamnya ada fungsi untuk mereset kamera dan semua view-nya kembali ke awal. Dan terakhir, jangan lupa untuk menambahkan fungsi startCamera di method onStart dan stopCamera di method onPause .

**Output**

Berikut adalah output dari projek yang Anda buat.

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Output Projek

Untuk projeknya bisa Anda lihat di github.

**[CoderJava/Scannerku](https://github.com/CoderJava/Scannerku)**

[Scannerku - Example how to make Scanner Barcode use ZXing in Android](https://github.com/CoderJava/Scannerku)

[github.com](https://github.com/CoderJava/Scannerku)

**Custom View**

“Lalu bagaimana jika Anda ingin mengubah layout scanner-nya?” Bisa dong. Berikut saya berikan Anda contoh untuk membuat layout scanner-nya bisa bergerak keatas bawah pada garis indikator scanner-nya. Silakan buat satu class baru dengan nama **CustomViewFinderView.kt** dan isi dengan source code berikut.

package com.ysn.scannerku  
  
import android.content.Context  
import android.graphics.Canvas  
import android.graphics.Color  
import android.graphics.Paint  
import me.dm7.barcodescanner.core.ViewFinderView  
  
class CustomViewFinderView constructor(context: Context) : ViewFinderView(context) {  
  
 private val paint = Paint()  
 private val SCANNER\_ALPHA = *intArrayOf*(0, 64, 128, 192, 255, 192, 128, 64)  
 private var scannerAlpha: Int = 0  
 private var cntr = 0  
 private var goingup = false  
 private val POINT\_SIZE = 10  
 private val ANIMATION\_DELAY = 80L  
  
 init {  
 paint.*color* = Color.*WHITE* paint.*isAntiAlias* = true  
 setSquareViewFinder(true)  
 setBorderColor(Color.parseColor("#35B781"))  
 setLaserColor(Color.parseColor("#35B781"))  
 setLaserEnabled(true)  
 }  
  
 override fun drawLaser(canvas: Canvas?) {  
 /\*super.drawLaser(canvas)\*/  
 paint.*alpha* = SCANNER\_ALPHA[scannerAlpha]  
 scannerAlpha = (scannerAlpha + 1) % SCANNER\_ALPHA.size  
 var middle = *framingRect*.height() / 2 + *framingRect*.top  
 middle += cntr  
 if (cntr < *framingRect*.top - mBorderLineLength - 10 && !goingup) {  
 canvas?.drawRect((*framingRect*.left + 2).toFloat(), (middle - 1).toFloat(), (*framingRect*.right - 1).toFloat(), (middle + 2).toFloat(), mLaserPaint)  
 cntr += 4  
 }  
  
 if (cntr >= *framingRect*.top - mBorderLineLength - 10 && !goingup) goingup = true  
  
 if (cntr > -*framingRect*.top + mBorderLineLength + 10 && goingup) {  
 canvas?.drawRect((*framingRect*.left + 2).toFloat(), (middle - 1).toFloat(), (*framingRect*.right - 1).toFloat(), (middle + 2).toFloat(), mLaserPaint)  
 cntr -= 4  
 }  
  
 if (cntr <= -*framingRect*.top + mBorderLineLength + 10 && goingup) goingup = false  
  
 postInvalidateDelayed(ANIMATION\_DELAY,  
 *framingRect*.left - POINT\_SIZE,  
 *framingRect*.top - POINT\_SIZE,  
 *framingRect*.right + POINT\_SIZE,  
 *framingRect*.bottom + POINT\_SIZE)  
 }  
  
}

class tersebut Anda extends ke ViewFinderView milik ZXing sehingga Anda bisa mengubah layout-nya. Pada class yang barusan Anda buat ada meng-override method drawLaser dimana method ini berfungsi untuk menggambar laser pada layout-nya dan Anda ada mengubah pergerakan lasernya pada method tersebut. Selanjutnya, pada class **MainActivity.kt**silakan Anda ubah kode berikut

mScannerView = ZXingScannerView(this)

menjadi seperti berikut.

mScannerView = object : ZXingScannerView(this) {  
 override fun createViewFinderView(context: Context?): IViewFinder {  
 return CustomViewFinderView(context!!)  
 }  
}

dimana, Anda meng-inisialisasikan object mScannerView dan menambahkan class CustomViewFinderView yang tadi Anda buat. Dan berikut adalah outputnya.

https://miro.medium.com/freeze/max/34/1*AVNbJQXrh1y9PQ3KH1D6gA.gif?q=20



Output

Uri

[Kotlin](https://developer.android.com/reference/kotlin/android/net/Uri.html) |**Java**

public abstract class Uri   
extends [Object](https://developer.android.com/reference/java/lang/Object.html) implements [Parcelable](https://developer.android.com/reference/android/os/Parcelable.html), [Comparable](https://developer.android.com/reference/java/lang/Comparable.html)<[Uri](https://developer.android.com/reference/android/net/Uri.html)>

|  |  |
| --- | --- |
| [java.lang.Object](https://developer.android.com/reference/java/lang/Object.html) | |
| ↳ | android.net.Uri |

Immutable URI reference. A URI reference includes a URI and a fragment, the component of the URI following a '#'. Builds and parses URI references which conform to [RFC 2396](http://www.faqs.org/rfcs/rfc2396.html).

In the interest of performance, this class performs little to no validation. Behavior is undefined for invalid input. This class is very forgiving--in the face of invalid input, it will return garbage rather than throw an exception unless otherwise specified.

Summary

|  |  |
| --- | --- |
| Nested classes | |
| class | [Uri.Builder](https://developer.android.com/reference/android/net/Uri.Builder.html)  Helper class for building or manipulating URI references. |
| Inherited constants | |
| From interface [android.os.Parcelable](https://developer.android.com/reference/android/os/Parcelable.html) | |

|  |  |
| --- | --- |
| Fields | |
| public static final[Creator](https://developer.android.com/reference/android/os/Parcelable.Creator.html)<[Uri](https://developer.android.com/reference/android/net/Uri.html)> | [CREATOR](https://developer.android.com/reference/android/net/Uri.html#CREATOR)  Reads Uris from Parcels. |
| public static final [Uri](https://developer.android.com/reference/android/net/Uri.html) | [EMPTY](https://developer.android.com/reference/android/net/Uri.html#EMPTY)  The empty URI, equivalent to "". |
| Public methods | |
| abstract [Uri.Builder](https://developer.android.com/reference/android/net/Uri.Builder.html) | [buildUpon](https://developer.android.com/reference/android/net/Uri.html#buildUpon())()  Constructs a new builder, copying the attributes from this Uri. |
| int | [compareTo](https://developer.android.com/reference/android/net/Uri.html#compareTo(android.net.Uri))([Uri](https://developer.android.com/reference/android/net/Uri.html) other)  Compares the string representation of this Uri with that of another. |
| static [String](https://developer.android.com/reference/java/lang/String.html) | [decode](https://developer.android.com/reference/android/net/Uri.html#decode(java.lang.String))([String](https://developer.android.com/reference/java/lang/String.html) s)  Decodes '%'-escaped octets in the given string using the UTF-8 scheme. |
| static [String](https://developer.android.com/reference/java/lang/String.html) | [encode](https://developer.android.com/reference/android/net/Uri.html#encode(java.lang.String,%20java.lang.String))([String](https://developer.android.com/reference/java/lang/String.html) s, [String](https://developer.android.com/reference/java/lang/String.html) allow)  Encodes characters in the given string as '%'-escaped octets using the UTF-8 scheme. |
| static [String](https://developer.android.com/reference/java/lang/String.html) | [encode](https://developer.android.com/reference/android/net/Uri.html#encode(java.lang.String))([String](https://developer.android.com/reference/java/lang/String.html) s)  Encodes characters in the given string as '%'-escaped octets using the UTF-8 scheme. |
| boolean | [equals](https://developer.android.com/reference/android/net/Uri.html#equals(java.lang.Object))([Object](https://developer.android.com/reference/java/lang/Object.html) o)  Compares this Uri to another object for equality. |
| static [Uri](https://developer.android.com/reference/android/net/Uri.html) | [fromFile](https://developer.android.com/reference/android/net/Uri.html#fromFile(java.io.File))([File](https://developer.android.com/reference/java/io/File.html) file)  Creates a Uri from a file. |
| static [Uri](https://developer.android.com/reference/android/net/Uri.html) | [fromParts](https://developer.android.com/reference/android/net/Uri.html#fromParts(java.lang.String,%20java.lang.String,%20java.lang.String))([String](https://developer.android.com/reference/java/lang/String.html) scheme, [String](https://developer.android.com/reference/java/lang/String.html) ssp, [String](https://developer.android.com/reference/java/lang/String.html) fragment)  Creates an opaque Uri from the given components. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getAuthority](https://developer.android.com/reference/android/net/Uri.html#getAuthority())()  Gets the decoded authority part of this URI. |
| boolean | [getBooleanQueryParameter](https://developer.android.com/reference/android/net/Uri.html#getBooleanQueryParameter(java.lang.String,%20boolean))([String](https://developer.android.com/reference/java/lang/String.html) key, boolean defaultValue)  Searches the query string for the first value with the given key and interprets it as a boolean value. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getEncodedAuthority](https://developer.android.com/reference/android/net/Uri.html#getEncodedAuthority())()  Gets the encoded authority part of this URI. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getEncodedFragment](https://developer.android.com/reference/android/net/Uri.html#getEncodedFragment())()  Gets the encoded fragment part of this URI, everything after the '#'. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getEncodedPath](https://developer.android.com/reference/android/net/Uri.html#getEncodedPath())()  Gets the encoded path. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getEncodedQuery](https://developer.android.com/reference/android/net/Uri.html#getEncodedQuery())()  Gets the encoded query component from this URI. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getEncodedSchemeSpecificPart](https://developer.android.com/reference/android/net/Uri.html#getEncodedSchemeSpecificPart())()  Gets the scheme-specific part of this URI, i.e. everything between the scheme separator ':' and the fragment separator '#'. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getEncodedUserInfo](https://developer.android.com/reference/android/net/Uri.html#getEncodedUserInfo())()  Gets the encoded user information from the authority. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getFragment](https://developer.android.com/reference/android/net/Uri.html#getFragment())()  Gets the decoded fragment part of this URI, everything after the '#'. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getHost](https://developer.android.com/reference/android/net/Uri.html#getHost())()  Gets the encoded host from the authority for this URI. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getLastPathSegment](https://developer.android.com/reference/android/net/Uri.html#getLastPathSegment())()  Gets the decoded last segment in the path. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getPath](https://developer.android.com/reference/android/net/Uri.html#getPath())()  Gets the decoded path. |
| abstract [List](https://developer.android.com/reference/java/util/List.html)<[String](https://developer.android.com/reference/java/lang/String.html)> | [getPathSegments](https://developer.android.com/reference/android/net/Uri.html#getPathSegments())()  Gets the decoded path segments. |
| abstract int | [getPort](https://developer.android.com/reference/android/net/Uri.html#getPort())()  Gets the port from the authority for this URI. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getQuery](https://developer.android.com/reference/android/net/Uri.html#getQuery())()  Gets the decoded query component from this URI. |
| [String](https://developer.android.com/reference/java/lang/String.html) | [getQueryParameter](https://developer.android.com/reference/android/net/Uri.html#getQueryParameter(java.lang.String))([String](https://developer.android.com/reference/java/lang/String.html) key)  Searches the query string for the first value with the given key. |
| [Set](https://developer.android.com/reference/java/util/Set.html)<[String](https://developer.android.com/reference/java/lang/String.html)> | [getQueryParameterNames](https://developer.android.com/reference/android/net/Uri.html#getQueryParameterNames())()  Returns a set of the unique names of all query parameters. |
| [List](https://developer.android.com/reference/java/util/List.html)<[String](https://developer.android.com/reference/java/lang/String.html)> | [getQueryParameters](https://developer.android.com/reference/android/net/Uri.html#getQueryParameters(java.lang.String))([String](https://developer.android.com/reference/java/lang/String.html) key)  Searches the query string for parameter values with the given key. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getScheme](https://developer.android.com/reference/android/net/Uri.html#getScheme())()  Gets the scheme of this URI. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getSchemeSpecificPart](https://developer.android.com/reference/android/net/Uri.html#getSchemeSpecificPart())()  Gets the scheme-specific part of this URI, i.e. everything between the scheme separator ':' and the fragment separator '#'. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [getUserInfo](https://developer.android.com/reference/android/net/Uri.html#getUserInfo())()  Gets the decoded user information from the authority. |
| int | [hashCode](https://developer.android.com/reference/android/net/Uri.html#hashCode())()  Hashes the encoded string represention of this Uri consistently with[equals(java.lang.Object)](https://developer.android.com/reference/android/net/Uri.html#equals(java.lang.Object)). |
| boolean | [isAbsolute](https://developer.android.com/reference/android/net/Uri.html#isAbsolute())()  Returns true if this URI is absolute, i.e. if it contains an explicit scheme. |
| abstract boolean | [isHierarchical](https://developer.android.com/reference/android/net/Uri.html#isHierarchical())()  Returns true if this URI is hierarchical like "http://google.com". |
| boolean | [isOpaque](https://developer.android.com/reference/android/net/Uri.html#isOpaque())()  Returns true if this URI is opaque like "mailto:nobody@google.com". |
| abstract boolean | [isRelative](https://developer.android.com/reference/android/net/Uri.html#isRelative())()  Returns true if this URI is relative, i.e. if it doesn't contain an explicit scheme. |
| [Uri](https://developer.android.com/reference/android/net/Uri.html) | [normalizeScheme](https://developer.android.com/reference/android/net/Uri.html#normalizeScheme())()  Return an equivalent URI with a lowercase scheme component. |
| static [Uri](https://developer.android.com/reference/android/net/Uri.html) | [parse](https://developer.android.com/reference/android/net/Uri.html#parse(java.lang.String))([String](https://developer.android.com/reference/java/lang/String.html) uriString)  Creates a Uri which parses the given encoded URI string. |
| abstract [String](https://developer.android.com/reference/java/lang/String.html) | [toString](https://developer.android.com/reference/android/net/Uri.html#toString())()  Returns the encoded string representation of this URI. |
| static [Uri](https://developer.android.com/reference/android/net/Uri.html) | [withAppendedPath](https://developer.android.com/reference/android/net/Uri.html#withAppendedPath(android.net.Uri,%20java.lang.String))([Uri](https://developer.android.com/reference/android/net/Uri.html) baseUri, [String](https://developer.android.com/reference/java/lang/String.html) pathSegment)  Creates a new Uri by appending an already-encoded path segment to a base Uri. |
| static void | [writeToParcel](https://developer.android.com/reference/android/net/Uri.html#writeToParcel(android.os.Parcel,%20android.net.Uri))([Parcel](https://developer.android.com/reference/android/os/Parcel.html) out, [Uri](https://developer.android.com/reference/android/net/Uri.html) uri)  Writes a Uri to a Parcel. |

|  |
| --- |
| Inherited methods |
| From class [java.lang.Object](https://developer.android.com/reference/java/lang/Object.html) |
| From interface [android.os.Parcelable](https://developer.android.com/reference/android/os/Parcelable.html) |
| From interface [java.lang.Comparable](https://developer.android.com/reference/java/lang/Comparable.html) |

Fields

CREATOR

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static final [Creator](https://developer.android.com/reference/android/os/Parcelable.Creator.html)<[Uri](https://developer.android.com/reference/android/net/Uri.html)> CREATOR

Reads Uris from Parcels.

EMPTY

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static final [Uri](https://developer.android.com/reference/android/net/Uri.html) EMPTY

The empty URI, equivalent to "".

Public methods

buildUpon

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [Uri.Builder](https://developer.android.com/reference/android/net/Uri.Builder.html) buildUpon ()

Constructs a new builder, copying the attributes from this Uri.

|  |  |
| --- | --- |
| Returns | |
| [Uri.Builder](https://developer.android.com/reference/android/net/Uri.Builder.html) |  |

compareTo

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public int compareTo ([Uri](https://developer.android.com/reference/android/net/Uri.html) other)

Compares the string representation of this Uri with that of another.

|  |  |
| --- | --- |
| Parameters | |
| other | Uri |
| Returns | |
| int |  |

decode

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static [String](https://developer.android.com/reference/java/lang/String.html) decode ([String](https://developer.android.com/reference/java/lang/String.html) s)

Decodes '%'-escaped octets in the given string using the UTF-8 scheme. Replaces invalid octets with the unicode replacement character ("\\uFFFD").

|  |  |
| --- | --- |
| Parameters | |
| s | String: encoded string to decode |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the given string with escaped octets decoded, or null if s is null |

encode

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static [String](https://developer.android.com/reference/java/lang/String.html) encode ([String](https://developer.android.com/reference/java/lang/String.html) s,

[String](https://developer.android.com/reference/java/lang/String.html) allow)

Encodes characters in the given string as '%'-escaped octets using the UTF-8 scheme. Leaves letters ("A-Z", "a-z"), numbers ("0-9"), and unreserved characters ("\_-!.~'()\*") intact. Encodes all other characters with the exception of those specified in the allow argument.

|  |  |
| --- | --- |
| Parameters | |
| s | String: string to encode |
| allow | String: set of additional characters to allow in the encoded form, null if no characters should be skipped |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | an encoded version of s suitable for use as a URI component, or null if s is null |

encode

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static [String](https://developer.android.com/reference/java/lang/String.html) encode ([String](https://developer.android.com/reference/java/lang/String.html) s)

Encodes characters in the given string as '%'-escaped octets using the UTF-8 scheme. Leaves letters ("A-Z", "a-z"), numbers ("0-9"), and unreserved characters ("\_-!.~'()\*") intact. Encodes all other characters.

|  |  |
| --- | --- |
| Parameters | |
| s | String: string to encode |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | an encoded version of s suitable for use as a URI component, or null if s is null |

equals

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public boolean equals ([Object](https://developer.android.com/reference/java/lang/Object.html) o)

Compares this Uri to another object for equality. Returns true if the encoded string representations of this Uri and the given Uri are equal. Case counts. Paths are not normalized. If one Uri specifies a default port explicitly and the other leaves it implicit, they will not be considered equal.

|  |  |
| --- | --- |
| Parameters | |
| o | Object: the reference object with which to compare. |
| Returns | |
| boolean | true if this object is the same as the obj argument; false otherwise. |

fromFile

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static [Uri](https://developer.android.com/reference/android/net/Uri.html) fromFile ([File](https://developer.android.com/reference/java/io/File.html) file)

Creates a Uri from a file. The URI has the form "file://". Encodes path characters with the exception of '/'.

Example: "file:///tmp/android.txt"

|  |  |
| --- | --- |
| Parameters | |
| file | File |
| Returns | |
| [Uri](https://developer.android.com/reference/android/net/Uri.html) | a Uri for the given file |

|  |  |
| --- | --- |
| Throws | |
| [NullPointerException](https://developer.android.com/reference/java/lang/NullPointerException.html) | if file is null |

fromParts

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static [Uri](https://developer.android.com/reference/android/net/Uri.html) fromParts ([String](https://developer.android.com/reference/java/lang/String.html) scheme,

[String](https://developer.android.com/reference/java/lang/String.html) ssp,

[String](https://developer.android.com/reference/java/lang/String.html) fragment)

Creates an opaque Uri from the given components. Encodes the ssp which means this method cannot be used to create hierarchical URIs.

|  |  |
| --- | --- |
| Parameters | |
| scheme | String: of the URI |
| ssp | String: scheme-specific-part, everything between the scheme separator (':') and the fragment separator ('#'), which will get encoded |
| fragment | String: fragment, everything after the '#', null if undefined, will get encoded |
| Returns | |
| [Uri](https://developer.android.com/reference/android/net/Uri.html) | Uri composed of the given scheme, ssp, and fragment |

|  |  |
| --- | --- |
| Throws | |
| [NullPointerException](https://developer.android.com/reference/java/lang/NullPointerException.html) | if scheme or ssp is null |

**See also:**

* [if you don't want the ssp and fragment to be encoded](https://developer.android.com/reference/android/net/Uri.Builder.html)

getAuthority

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getAuthority ()

Gets the decoded authority part of this URI. For server addresses, the authority is structured as follows: [ userinfo '@' ] host [ ':' port ]

Examples: "google.com", "bob@google.com:80"

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the authority for this URI or null if not present |

getBooleanQueryParameter

Added in [API level 11](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public boolean getBooleanQueryParameter ([String](https://developer.android.com/reference/java/lang/String.html) key,

boolean defaultValue)

Searches the query string for the first value with the given key and interprets it as a boolean value. "false" and "0" are interpreted as false, everything else is interpreted as true.

|  |  |
| --- | --- |
| Parameters | |
| key | String: which will be decoded |
| defaultValue | boolean: the default value to return if there is no query parameter for key |
| Returns | |
| boolean | the boolean interpretation of the query parameter key |

getEncodedAuthority

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getEncodedAuthority ()

Gets the encoded authority part of this URI. For server addresses, the authority is structured as follows: [ userinfo '@' ] host [ ':' port ]

Examples: "google.com", "bob@google.com:80"

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the authority for this URI or null if not present |

getEncodedFragment

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getEncodedFragment ()

Gets the encoded fragment part of this URI, everything after the '#'.

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the encoded fragment or null if there isn't one |

getEncodedPath

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getEncodedPath ()

Gets the encoded path.

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the encoded path, or null if this is not a hierarchical URI (like "mailto:nobody@google.com") or the URI is invalid |

getEncodedQuery

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getEncodedQuery ()

Gets the encoded query component from this URI. The query comes after the query separator ('?') and before the fragment separator ('#'). This method would return "q=android" for "http://www.google.com/search?q=android".

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the encoded query or null if there isn't one |

getEncodedSchemeSpecificPart

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getEncodedSchemeSpecificPart ()

Gets the scheme-specific part of this URI, i.e. everything between the scheme separator ':' and the fragment separator '#'. If this is a relative URI, this method returns the entire URI. Leaves escaped octets intact.

Example: "//www.google.com/search?q=android"

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the encoded scheme-specific-part |

getEncodedUserInfo

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getEncodedUserInfo ()

Gets the encoded user information from the authority. For example, if the authority is "nobody@google.com", this method will return "nobody".

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the user info for this URI or null if not present |

getFragment

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getFragment ()

Gets the decoded fragment part of this URI, everything after the '#'.

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the decoded fragment or null if there isn't one |

getHost

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getHost ()

Gets the encoded host from the authority for this URI. For example, if the authority is "bob@google.com", this method will return "google.com".

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the host for this URI or null if not present |

getLastPathSegment

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getLastPathSegment ()

Gets the decoded last segment in the path.

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the decoded last segment or null if the path is empty |

getPath

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getPath ()

Gets the decoded path.

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the decoded path, or null if this is not a hierarchical URI (like "mailto:nobody@google.com") or the URI is invalid |

getPathSegments

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [List](https://developer.android.com/reference/java/util/List.html)<[String](https://developer.android.com/reference/java/lang/String.html)> getPathSegments ()

Gets the decoded path segments.

|  |  |
| --- | --- |
| Returns | |
| [List](https://developer.android.com/reference/java/util/List.html)<[String](https://developer.android.com/reference/java/lang/String.html)> | decoded path segments, each without a leading or trailing '/' |

getPort

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract int getPort ()

Gets the port from the authority for this URI. For example, if the authority is "google.com:80", this method will return 80.

|  |  |
| --- | --- |
| Returns | |
| int | the port for this URI or -1 if invalid or not present |

getQuery

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getQuery ()

Gets the decoded query component from this URI. The query comes after the query separator ('?') and before the fragment separator ('#'). This method would return "q=android" for "http://www.google.com/search?q=android".

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the decoded query or null if there isn't one |

getQueryParameter

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public [String](https://developer.android.com/reference/java/lang/String.html) getQueryParameter ([String](https://developer.android.com/reference/java/lang/String.html) key)

Searches the query string for the first value with the given key.

**Warning:** Prior to Jelly Bean, this decoded the '+' character as '+' rather than ' '.

|  |  |
| --- | --- |
| Parameters | |
| key | String: which will be encoded |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the decoded value or null if no parameter is found |

|  |  |
| --- | --- |
| Throws | |
| [UnsupportedOperationException](https://developer.android.com/reference/java/lang/UnsupportedOperationException.html) | if this isn't a hierarchical URI |
| [NullPointerException](https://developer.android.com/reference/java/lang/NullPointerException.html) | if key is null |

getQueryParameterNames

Added in [API level 11](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public [Set](https://developer.android.com/reference/java/util/Set.html)<[String](https://developer.android.com/reference/java/lang/String.html)> getQueryParameterNames ()

Returns a set of the unique names of all query parameters. Iterating over the set will return the names in order of their first occurrence.

|  |  |
| --- | --- |
| Returns | |
| [Set](https://developer.android.com/reference/java/util/Set.html)<[String](https://developer.android.com/reference/java/lang/String.html)> | a set of decoded names |
| Throws | |
| [UnsupportedOperationException](https://developer.android.com/reference/java/lang/UnsupportedOperationException.html) | if this isn't a hierarchical URI |

getQueryParameters

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public [List](https://developer.android.com/reference/java/util/List.html)<[String](https://developer.android.com/reference/java/lang/String.html)> getQueryParameters ([String](https://developer.android.com/reference/java/lang/String.html) key)

Searches the query string for parameter values with the given key.

|  |  |
| --- | --- |
| Parameters | |
| key | String: which will be encoded |
| Returns | |
| [List](https://developer.android.com/reference/java/util/List.html)<[String](https://developer.android.com/reference/java/lang/String.html)> | a list of decoded values |

|  |  |
| --- | --- |
| Throws | |
| [UnsupportedOperationException](https://developer.android.com/reference/java/lang/UnsupportedOperationException.html) | if this isn't a hierarchical URI |
| [NullPointerException](https://developer.android.com/reference/java/lang/NullPointerException.html) | if key is null |

getScheme

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getScheme ()

Gets the scheme of this URI. Example: "http"

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the scheme or null if this is a relative URI |

getSchemeSpecificPart

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getSchemeSpecificPart ()

Gets the scheme-specific part of this URI, i.e. everything between the scheme separator ':' and the fragment separator '#'. If this is a relative URI, this method returns the entire URI. Decodes escaped octets.

Example: "//www.google.com/search?q=android"

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the decoded scheme-specific-part |

getUserInfo

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) getUserInfo ()

Gets the decoded user information from the authority. For example, if the authority is "nobody@google.com", this method will return "nobody".

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | the user info for this URI or null if not present |

hashCode

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public int hashCode ()

Hashes the encoded string represention of this Uri consistently with [equals(java.lang.Object)](https://developer.android.com/reference/android/net/Uri.html#equals(java.lang.Object)).

|  |  |
| --- | --- |
| Returns | |
| int | a hash code value for this object. |

isAbsolute

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public boolean isAbsolute ()

Returns true if this URI is absolute, i.e. if it contains an explicit scheme.

|  |  |
| --- | --- |
| Returns | |
| boolean | true if this URI is absolute, false if it's relative |

isHierarchical

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract boolean isHierarchical ()

Returns true if this URI is hierarchical like "http://google.com". Absolute URIs are hierarchical if the scheme-specific part starts with a '/'. Relative URIs are always hierarchical.

|  |  |
| --- | --- |
| Returns | |
| boolean |  |

isOpaque

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public boolean isOpaque ()

Returns true if this URI is opaque like "mailto:nobody@google.com". The scheme-specific part of an opaque URI cannot start with a '/'.

|  |  |
| --- | --- |
| Returns | |
| boolean |  |

isRelative

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract boolean isRelative ()

Returns true if this URI is relative, i.e. if it doesn't contain an explicit scheme.

|  |  |
| --- | --- |
| Returns | |
| boolean | true if this URI is relative, false if it's absolute |

normalizeScheme

Added in [API level 16](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public [Uri](https://developer.android.com/reference/android/net/Uri.html) normalizeScheme ()

Return an equivalent URI with a lowercase scheme component. This aligns the Uri with Android best practices for intent filtering.

For example, "HTTP://www.android.com" becomes "http://www.android.com"

All URIs received from outside Android (such as user input, or external sources like Bluetooth, NFC, or the Internet) should be normalized before they are used to create an Intent.

This method does *not* validate bad URI's, or 'fix' poorly formatted URI's - so do not use it for input validation. A Uri will always be returned, even if the Uri is badly formatted to begin with and a scheme component cannot be found.

|  |  |
| --- | --- |
| Returns | |
| [Uri](https://developer.android.com/reference/android/net/Uri.html) | normalized Uri (never null) |

**See also:**

* [Intent.setData(Uri)](https://developer.android.com/reference/android/content/Intent.html#setData(android.net.Uri))
* [Intent.setDataAndNormalize(Uri)](https://developer.android.com/reference/android/content/Intent.html#setDataAndNormalize(android.net.Uri))

parse

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static [Uri](https://developer.android.com/reference/android/net/Uri.html) parse ([String](https://developer.android.com/reference/java/lang/String.html) uriString)

Creates a Uri which parses the given encoded URI string.

|  |  |
| --- | --- |
| Parameters | |
| uriString | String: an RFC 2396-compliant, encoded URI |
| Returns | |
| [Uri](https://developer.android.com/reference/android/net/Uri.html) | Uri for this given uri string |

|  |  |
| --- | --- |
| Throws | |
| [NullPointerException](https://developer.android.com/reference/java/lang/NullPointerException.html) | if uriString is null |

toString

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public abstract [String](https://developer.android.com/reference/java/lang/String.html) toString ()

Returns the encoded string representation of this URI. Example: "http://google.com/"

|  |  |
| --- | --- |
| Returns | |
| [String](https://developer.android.com/reference/java/lang/String.html) | a string representation of the object. |

withAppendedPath

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static [Uri](https://developer.android.com/reference/android/net/Uri.html) withAppendedPath ([Uri](https://developer.android.com/reference/android/net/Uri.html) baseUri,

[String](https://developer.android.com/reference/java/lang/String.html) pathSegment)

Creates a new Uri by appending an already-encoded path segment to a base Uri.

|  |  |
| --- | --- |
| Parameters | |
| baseUri | Uri: Uri to append path segment to |
| pathSegment | String: encoded path segment to append |
| Returns | |
| [Uri](https://developer.android.com/reference/android/net/Uri.html) | a new Uri based on baseUri with the given segment appended to the path |

|  |  |
| --- | --- |
| Throws | |
| [NullPointerException](https://developer.android.com/reference/java/lang/NullPointerException.html) | if baseUri is null |

writeToParcel

Added in [API level 1](https://developer.android.com/guide/topics/manifest/uses-sdk-element.html#ApiLevels)

public static void writeToParcel ([Parcel](https://developer.android.com/reference/android/os/Parcel.html) out,

[Uri](https://developer.android.com/reference/android/net/Uri.html) uri)

Writes a Uri to a Parcel.

|  |  |
| --- | --- |
| Parameters | |
| out | Parcel: parcel to write to |
| uri | Uri: to write, can be null |