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學習

Xamarin.Android

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#xamarin.an

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1: Xamarin.Android

Xamarin.AndroidJavaUIAndroidC.NETBCLIDE - Xamarin StudioVisual Studio - ◦

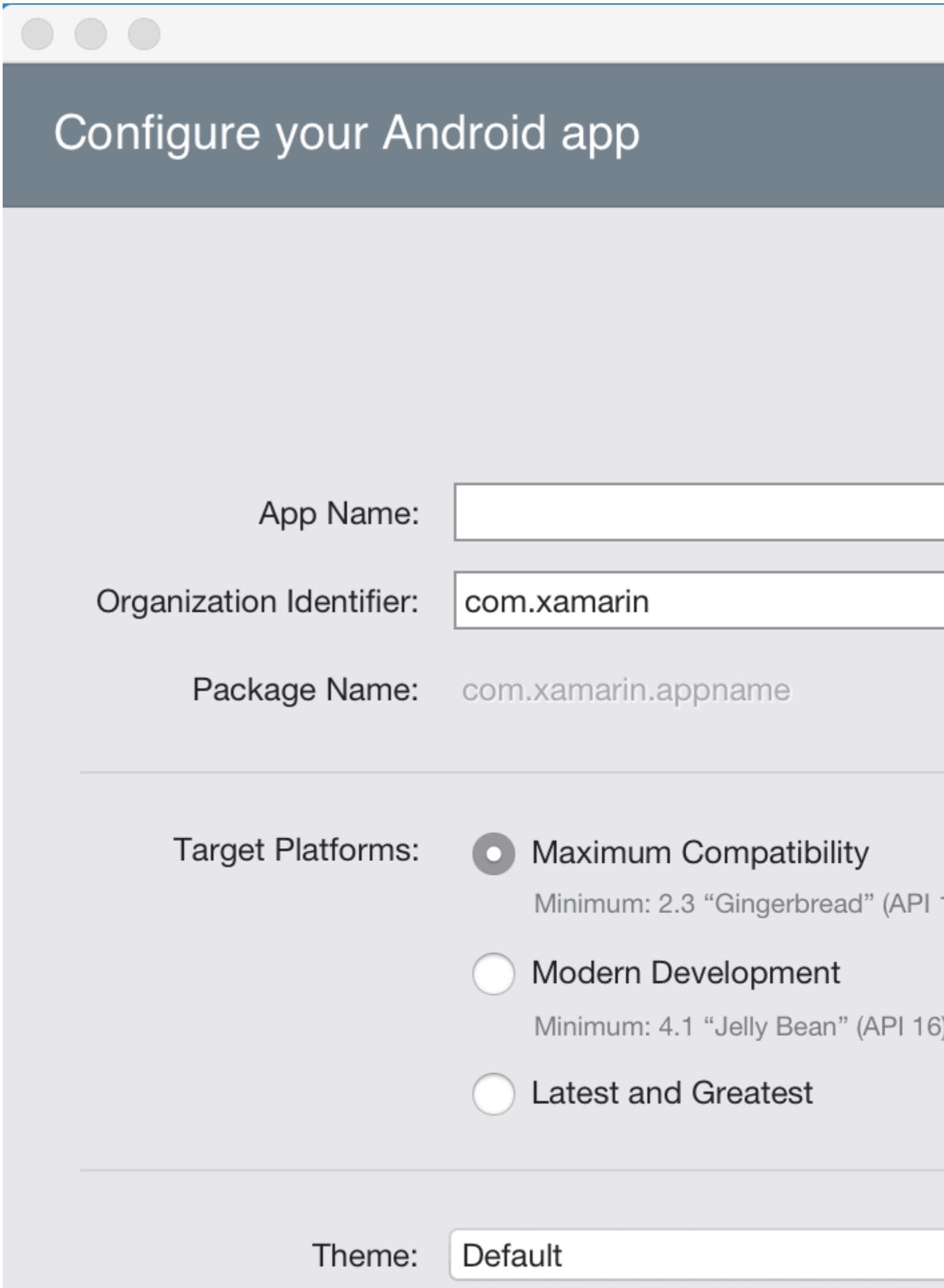
MacWindowsXamarin.AndroidXamarin

		API	
1.0		1	2008-09-23
1.1		2	2009-02-09
1.5		3	2009-04-27
1.6		4	2009-09-15
2.0-2.1		5-7	2009-10-26
2.2-2.2.3	Froyo	8	2010-05-20
2.3-2.3.7		9-10	2010-12-06
3.0-3.2.6		11-13	2011-02-22
4.0-4.0.4		14-15	2011-10-18
4.1-4.3.1		16-18	2012-07-09
4.4-4.4.4,4.4W-4.4W.2		19-20	20131031
5.0-5.1.1		21-22	20141112
6.0-6.0.1		23	2015105
7		24	2016822

Examples

Xamarin Studio

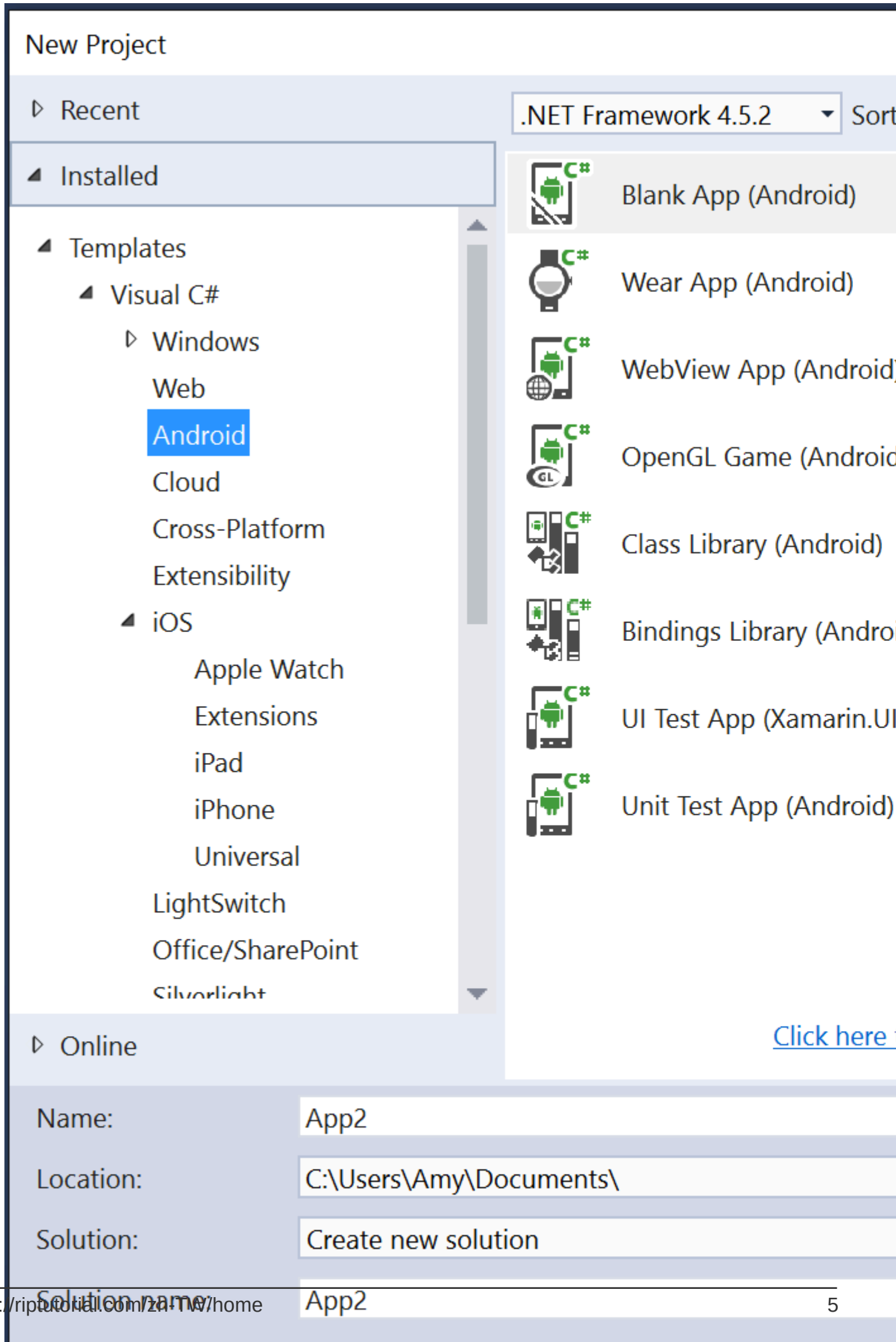
1. **>>**◦
2. **Android App** “ ” ◦
3. ID◦ ◦


Configure your Android app
App Name:
Organization Identifier:
com.xamarin
Package Name:
com.xamarin.appname
Target Platforms:
Maximum Compatibility
Minimum: 2.3 “Gingerbread” (API
Modern Development
Minimum: 4.1 “Jelly Bean” (API 16)
Latest and Greatest
Theme:
Default

4. 。“”。
5.
6. **Debug**“” 

Visual Studio

1. **>>**“”。
2. **Visual C> Android**Blank App


New Project
Recent
.NET Framework 4.5.2
Sort
Installed
Templates
Visual C#
Windows
Web
Android
Cloud
Cross-Platform
Extensibility
iOS
Apple Watch
Extensions
iPad
iPhone
Universal
LightSwitch
Office/SharePoint
Silverlight
Online
Blank App (Android)
Wear App (Android)
WebView App (Android)
OpenGL Game (Android
Class Library (Android)
Bindings Library (Andro
UI Test App (Xamarin.UI
Unit Test App (Android)
Click here
Name:
App2
Location:
C:\Users\Amy\Documents\
Solution:
Create new solution
Solution name:
App2

3. ◦
4.
5. “ ”“ ”

Xamarin.Android https://riptutorial.com/zh-TW/xamarin-android/topic/403/xamarin-android

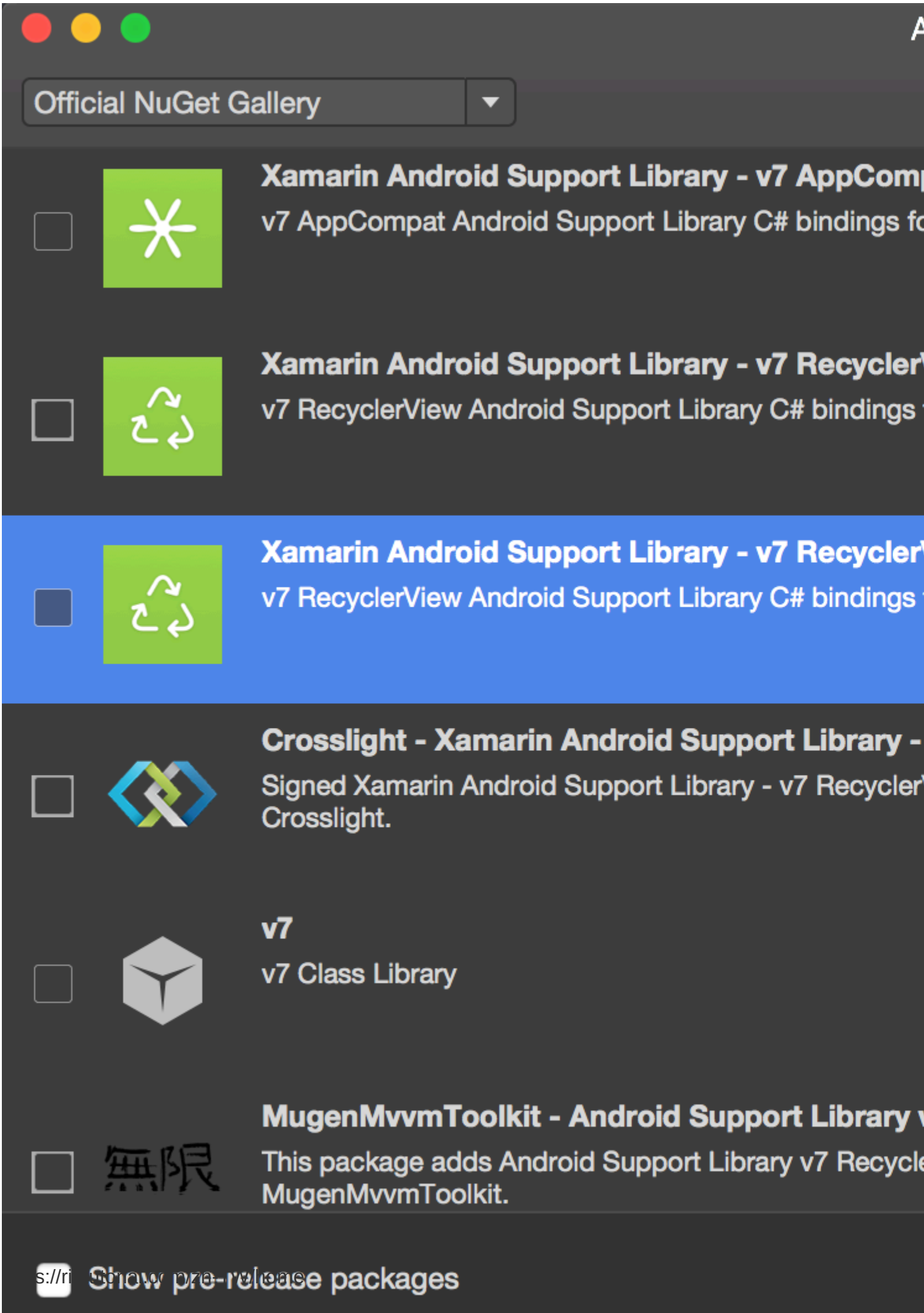
2: RecyclerView

Examples

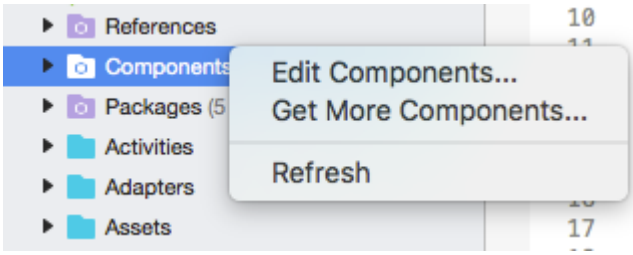
RecyclerView

Android Support Library V7 RecyclerView。 UI。

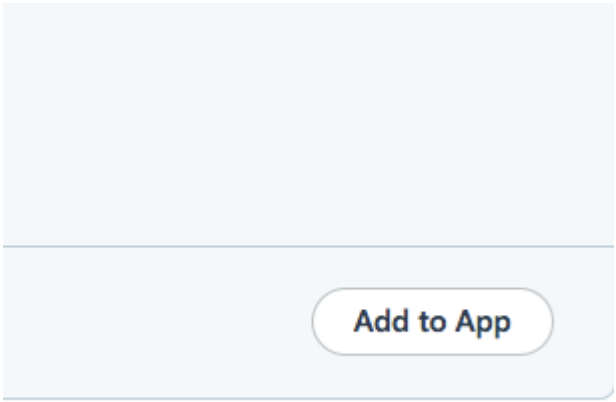
RecyclerView Nuget。 v7 recyclerview 。 Xamarin Android Support Library – v7 RecyclerView 。 。


Official NuGet Gallery
Xamarin Android Support Library - v7 AppCom
v7 AppCompat Android Support Library C# bindings fo
Xamarin Android Support Library - v7 Recycler
v7 RecyclerView Android Support Library C# bindings
Xamarin Android Support Library - v7 Recycler
v7 RecyclerView Android Support Library C# bindings
Crosslight - Xamarin Android Support Library -
Signed Xamarin Android Support Library - v7 Recycler
Crosslight.
v7
v7 Class Library
MugenMvvmToolkit - Android Support Library
This package adds Android Support Library v7 Recycle
MugenMvvmToolkit.
Show pre-release packages

Get More Components。



Component StoreRecyclerView。 Android Support Library V7 RecyclerView。 “Add to App。 。



RecyclerView。 axml RecyclerView。

```
<android.support.v7.widget.RecyclerView
        android:id="@+id/recyclerView"
        android:scrollbars="vertical"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
```

RecyclerView AdapterViewHolder。 AdapterRecyclerView。 ViewHolder。 。

Adapter Class

```
public class MyAdapter : RecyclerView.Adapter
{
    string [] items;

    public MyAdapter (string [] data)
    {
        items = data;
    }

    // Create new views (invoked by the layout manager)
    public override RecyclerView.ViewHolder OnCreateViewHolder (ViewGroup parent, int
viewType)
    {
        // set the view's size, margins, paddings and layout parameters
        var tv = new TextView (parent.Context);
        tv.SetWidth (200);
        tv.Text = "";
```

```
        var vh = new MyViewHolder (tv);
        return vh;
    }

    // Replace the contents of a view (invoked by the layout manager)
    public override void OnBindViewHolder (RecyclerView.ViewHolder viewHolder, int position)
    {
        var item = items [position];

        // Replace the contents of the view with that element
        var holder = viewHolder as MyViewHolder;
        holder.TextView.Text = items[position];
    }

    public override int ItemCount {
        get {
            return items.Length;
        }
    }
}
```

`OnCreateViewHolder`ViewViewHolder。 。 ViewHolder。 。 RecyclerViewViewView。

`OnBindViewHolder`。 itemView。

`TextView` ViewHolder。

```
public class MyViewHolder : RecyclerView.ViewHolder
{
    public TextView TextView { get; set; }


    public MyViewHolder (TextView v) : base (v)
    {
        TextView = v;
    }
}
```

`Activity`。

```
RecyclerView mRecyclerView;
MyAdapter mAdapter;
protected override void OnCreate (Bundle bundle)
{
    base.OnCreate (bundle);
    SetContentView (Resource.Layout.Main);
    mRecyclerView = FindViewById<RecyclerView> (Resource.Id.recyclerView);

    // Plug in the linear layout manager:
    var layoutManager = new LinearLayoutManager (this) { Orientation =
LinearLayoutManager.Vertical };
    mRecyclerView.SetLayoutManager (layoutManager);
    mRecyclerView.HasFixedSize = true;

    var recyclerViewData = GetData();
    // Plug in my adapter:
    mAdapter = new MyAdapter (recyclerViewData);
```

```
    mRecyclerView.SetAdapter (mAdapter);
}

string[] GetData()
{
     string[] data;
     .
     .
     .
     return data;
}
```

LayoutManagerRecyclerView。 `RecyclerViewListViewGridView`。 LayoutMangerRecyclerView。 `LinearLayoutManager`ListView `GridLayoutManager`。

ClickRecyclerView

Xamarin.Android RecyclerViewClick EventHandlers。

Android Java ClickonClickListener

```
ImageView picture = findViewById(R.id.item_picture);
picture.setOnClickListener(new View.OnClickListener() {
    public void onClick(View v) {
        // do stuff
    }
});
```

Xamarin.Android Click EventHandler

1。

```
ImageView picture = FindViewById<ImageView>(Resource.Id.item_picture);
picture.Click += delegate {
    // do stuff
};
```

2。

```
ImageView picture = FindViewById<ImageView>(Resource.Id.item_picture);
picture.Click += async delegate {
    // await DoAsyncMethod();
    // do async stuff
};
```

3。

```
ImageView picture = FindViewById<ImageView>(Resource.Id.item_picture);
picture.Click += Picture_Click;
... // rest of your method

private void Picture_Click(object sender, EventArgs e)
{
```

```
    // do stuff
}
```

EventHandler。GridView / ListViewGetViewClick EventHandlerRecyclerView.Adapter OnBindViewHolderEventHandler。EventHandler。

EventHandlersGetViewOnBindViewHolder。**3.**EventHandlerEventHandler。

ClickRecyclerView.Adapter

```
public class ViewHolderPerson : Android.Support.V7.Widget.RecyclerView.ViewHolder
{
    public View Item { get; private set; }
    public ImageView Picture { get; private set; }
    public TextView Name { get; private set; }

    public ViewHolderPerson(View itemView) : base(itemView)
    {
        this.Item = itemView;
        this.Picture = itemView.FindViewById<ImageView>(Resource.Id.Item_Person_Picture);
        this.Name = itemView.FindViewById<TextView>(Resource.Id.Item_Person_Name);
    }
}

public class AdapterPersons : Android.Support.V7.Widget.RecyclerView.Adapter
{
    private Context context;
    private Android.Support.V7.Widget.RecyclerView recyclerView;
    private List<Person> persons;

    public AdapterPersons(Context context, Android.Support.V7.Widget.RecyclerView
recyclerView, List<Person> persons)
    {
        this.context = context;
        this.recyclerView = recyclerView;
        this.persons = persons;
    }

    public override int ItemCount => persons.Count;

    public override void OnBindViewHolder(RecyclerView.ViewHolder holder, int position)
    {
        Person person = this.persons[position];
        ((ViewHolderPerson)holder).Name.Text = person.Name;
        ((ViewHolderPerson)holder).Picture.SetImageBitmap(person.Picture);

        // Unsubscribe and subscribe the method, to avoid setting multiple times.
        ((ViewHolderPerson)holder).Item.Click -= Person_Click;
        ((ViewHolderPerson)holder).Item.Click += Person_Click;
    }

    private void Person_Click(object sender, EventArgs e)
    {
        int position = this.recyclerView.GetChildAdapterPosition((View)sender);
        Person personClicked = this.persons[position];
        if(personClicked.Gender == Gender.Female)
        {
            Toast.MakeText(this.context, "The person clicked is a female!",
ToastLength.Long).Show();
```

```
        }
        else if(personClicked.Gender == Gender.Male)
        {
            Toast.MakeText(this.context, "The person clicked is a male!",
ToastLength.Long).Show();
        }
    }

    public override RecyclerView.ViewHolder OnCreateViewHolder(ViewGroup parent, int viewType)
    {
        View itemView =
LayoutInflater.From(parent.Context).Inflate(Resource.Layout.item_person, parent, false);
        return new ViewHolderPerson(itemView);
    }

}
```

RecyclerView https://riptutorial.com/zh-TW/xamarin-android/topic/3452/recyclerview

3: Xamarin.Android -

Android

https://developer.android.com/reference/android/support/v7/widget/Toolbar.html

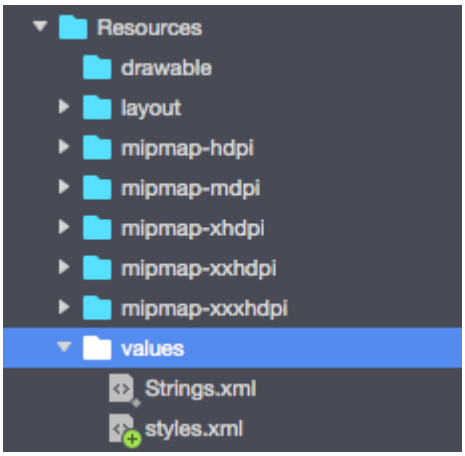
Android.Support.v7

https://developer.android.com/training/appbar/index.html

Examples

Xamarin.Android

NuGetXamarin.Android.Support.V7.AppCompat https
//www.nuget.org/packages/Xamarin.Android.Support.v7.AppCompat/

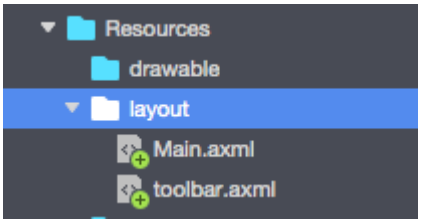
“Resources”“values”“styles.xml”xml 

“styles.xml”

```
<?xml version="1.0" encoding="utf-8" ?>
<resources>
<style name="MyTheme" parent="MyTheme.Base">
</style>

<!-- Base theme applied no matter what API -->
<style name="MyTheme.Base" parent="Theme.AppCompat.Light.DarkActionBar">
<item name="windowNoTitle">true</item>
<!--We will be using the toolbar so no need to show ActionBar-->
<item name="windowActionBar">false</item>
<!-- Set theme colors from http://www.google.com/design/spec/style/color.html#color-color-
palette-->
<!-- colorPrimary is used for the default action bar background -->
<item name="colorPrimary">#2196F3</item>
<!-- colorPrimaryDark is used for the status bar -->
<item name="colorPrimaryDark">#1976D2</item>
<!-- colorAccent is used as the default value for colorControlActivated
     which is used to tint widgets -->
<item name="colorAccent">#FF4081</item>
```

```
<item name="colorControlHighlight">#FF4081</item>
<!-- You can also set colorControlNormal, colorControlActivated
     colorControlHighlight and colorSwitchThumbNormal. -->
```

“toolbar.axml”“layout”




```
<?xml version="1.0" encoding="utf-8"?>
<android.support.v7.widget.Toolbar xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
android:id="@+id/toolbar"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:minHeight="?attr/actionBarSize"
android:background="?attr/colorPrimary"
android:theme="@style/ThemeOverlay.AppCompat.Dark.ActionBar"
app:popupTheme="@style/ThemeOverlay.AppCompat.Light" />
```

“Main.axml”。

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
android:orientation="vertical"
android:layout_width="match_parent"
android:layout_height="match_parent">

    <include android:id="@+id/toolbar" layout="@layout/toolbar" />

</LinearLayout>
```

。“AndroidManifest”“application”

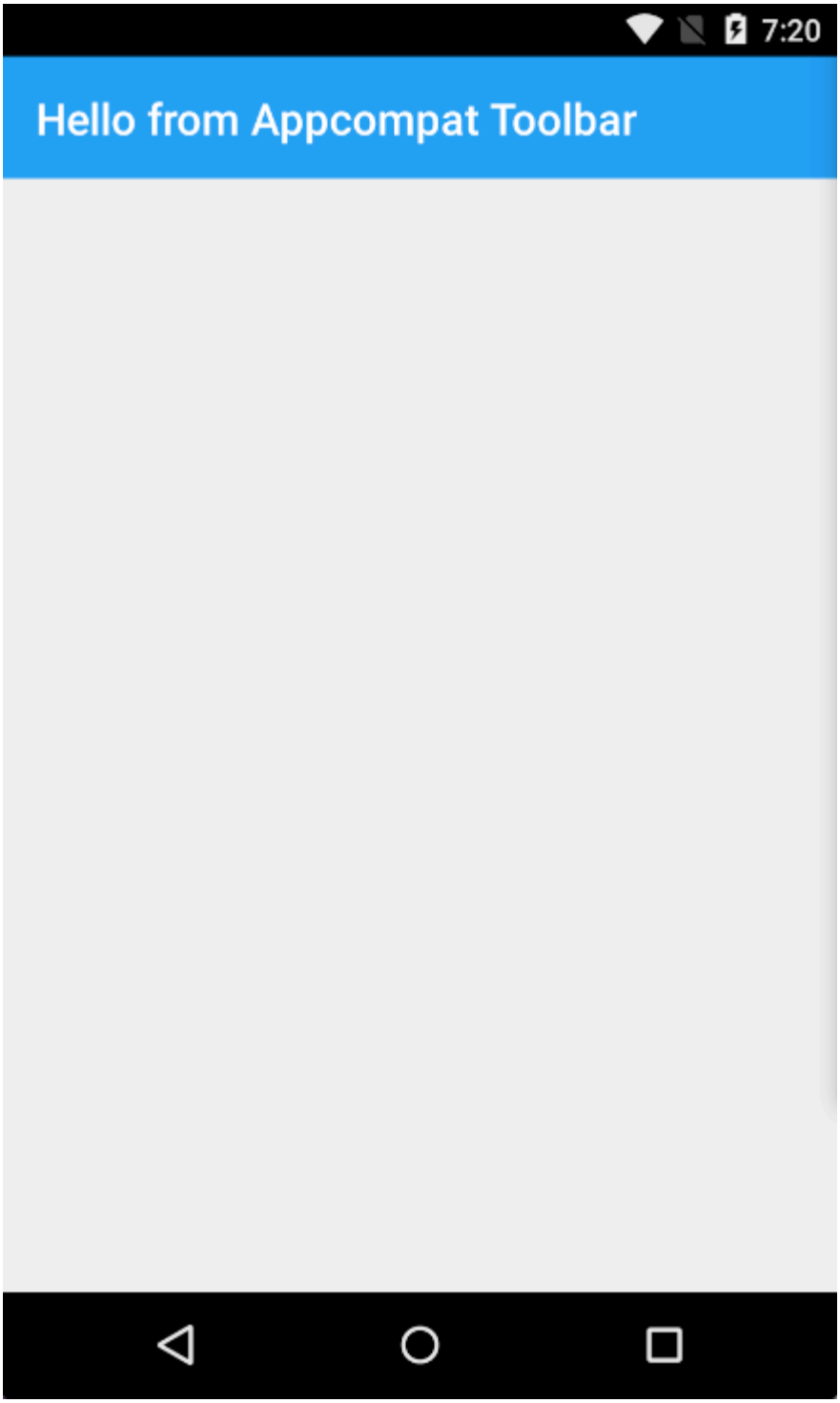
```
<application android:theme="@style/MyTheme" android:allowBackup="true"
android:icon="@mipmap/icon" android:label="@string/app_name">
```

Activity。“MainActivity.cs”。“”“AppCompatActivity”。“OnCreate”。

```
var toolbar = FindViewById<Android.Support.V7.Widget.Toolbar>(Resource.Id.toolbar);
        SetSupportActionBar(toolbar);
        SupportActionBar.Title = "Hello from Appcompat Toolbar";
```

```
protected override void OnCreate(Bundle savedInstanceState)
    {
        base.OnCreate(savedInstanceState);
        SetContentView(Resource.Layout.Main);

        var toolbar = FindViewById<Android.Support.V7.Widget.Toolbar>(Resource.Id.toolbar);
        SetSupportActionBar(toolbar);
```

```
        SupportActionBar.Title = "Hello from Appcompat Toolbar";
    }
```



Xamarin.Android - https://riptutorial.com/zh-TW/xamarin-android/topic/4755/xamarin-android----

4: Xamarin.Android -

Xamarin.Android BluetoothSocket.InputStreamBluetoothSocket.OutputStream System.IO.Stream 。 System.IO.Stream。

	BluetoothSocket。 。
CMD	BT。
_mx	。 System.Threading.Mutex。
	。

Examples

Android.Runtime.InputStreamInvokerAndroid.Runtime.OutputStreamInvokerJava.IO.InputStream Java.IO.OutputStream 。 **java.io.InputStream.Available.Read**

```
byte[] Talk2BTsocket(BluetoothSocket socket, byte[] cmd, Mutex _mx, int timeOut = 150)
{
    var buf = new byte[0x20];

    _mx.WaitOne();
    try
    {
        using (var ost = socket.OutputStream)
        {
            var _ost = (ost as OutputStreamInvoker).BaseOutputStream;
            _ost.Write(cmd, 0, cmd.Length);
        }

        // needed because when skipped, it can cause no or invalid data on input stream
        Thread.Sleep(timeOut);

        using (var ist = socket.InputStream)
        {
            var _ist = (ist as InputStreamInvoker).BaseInputStream;
            var aa = 0;
            if ((aa = _ist.Available()) > 0)
            {
                var nn = _ist.Read(buf, 0, aa);
                System.Array.Resize(ref buf, nn);
            }
        }
    }
    catch (System.Exception ex)
    {
        DisplayAlert(ex.Message);
    }
    finally
    {
```

```
        _mx.ReleaseMutex();     // must be called here !!!
    }

    return buf;
}
```

Xamarin.Android - https://riptutorial.com/zh-TW/xamarin-android/topic/10844/xamarin-android----

5: XamarinZXing

Zxing。 Zxingjava.Netxamarin。 。 http://zxingnet.codeplex.com/

libarry。

1ZXing.Net.Mobile。

MobileBarcodeScanner。

3。

Examples

```
button.Click +=async delegate
{
var MScanner = new MobileBarcodeScanner();
var Result = await MScanner.Scan();
if(Result == null)
{
    return;
}
//get the bar code text here
string BarcodeText = Result.text;
}
```

XamarinZXing https://riptutorial.com/zh-TW/xamarin-android/topic/9526/xamarinzxing

6: Android

1. GitHub

https://github.com/Daniel-Krzyczkowski/XamarinAndroid/tree/master/AndroidPictureOrientation/PictureOrientationApp

2. Xamarin Mobile

https://components.xamarin.com/view/xamarin.mobile

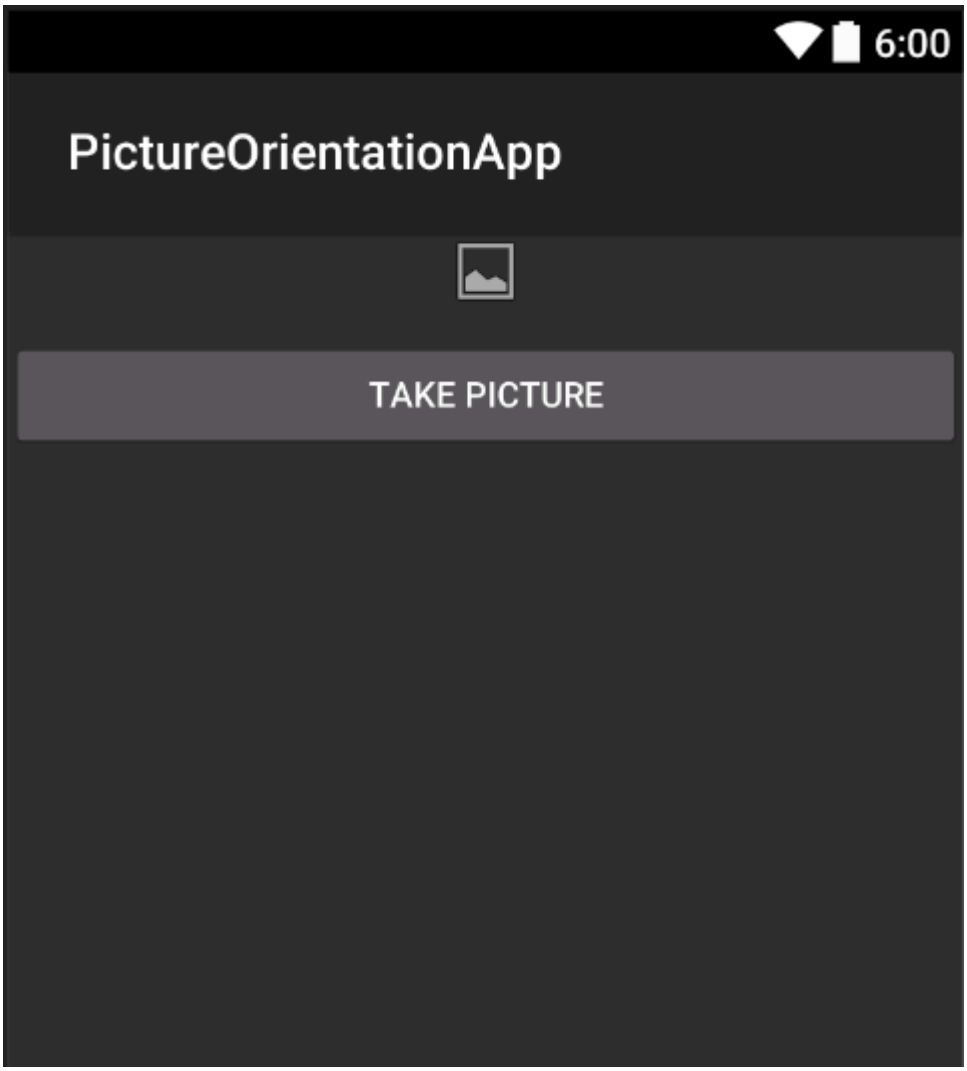
Examples

Android

Android。

imageview。 。

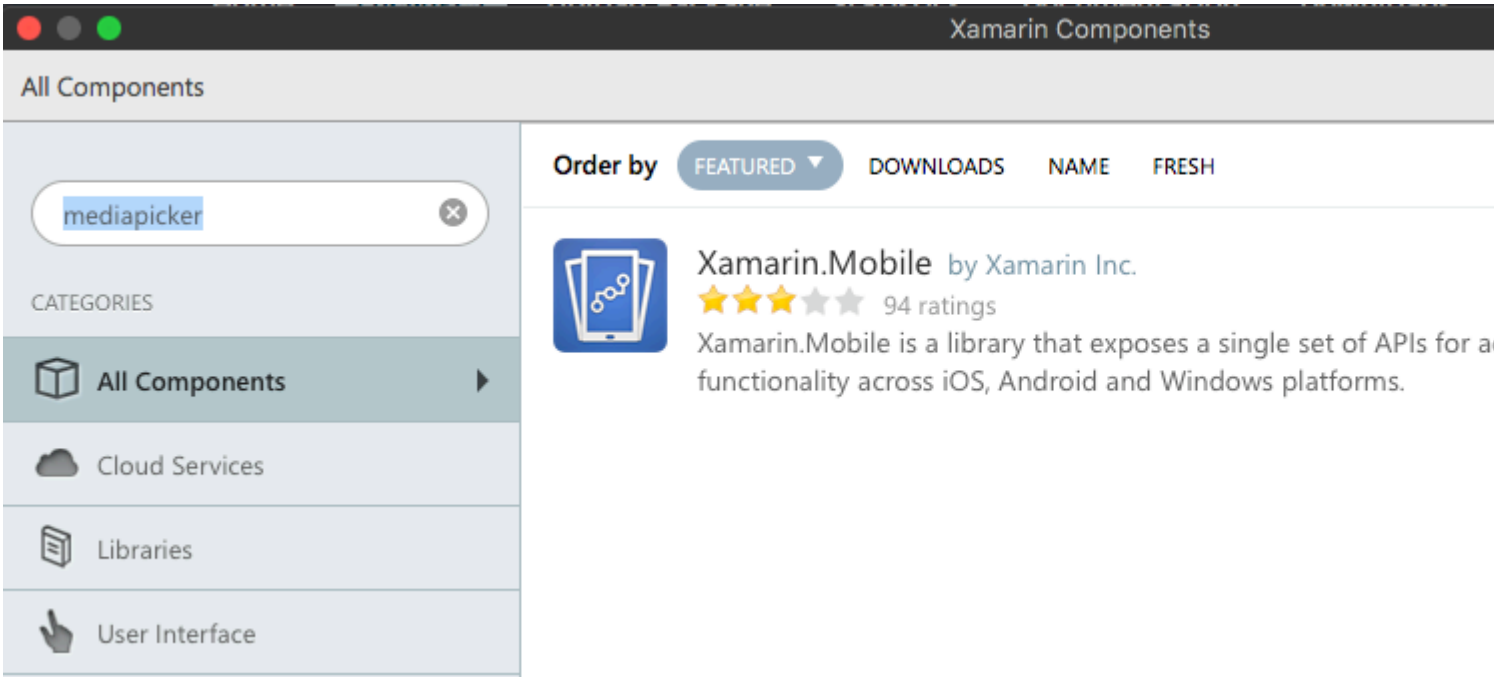
1. “TakePictureButton”“TakenPictureImageView”imageview



2.

```
ImageView _takenPictureImageView;
Button _takePictureButton;

    protected override void OnCreate(Bundle savedInstanceState)
    {
        base.OnCreate(savedInstanceState);
        SetContentView(Resource.Layout.Main);

        _takenPictureImageView = FindViewById<ImageView>(Resource.Id.TakenPictureImageView);
        _takePictureButton = FindViewById<Button>(Resource.Id.TakePictureButton);

        _takePictureButton.Click += delegate
        {
            takePicture();
        };
    }
```

3. Components StoreXamarin Mobile



4. ◦ ◦

```
void takePicture()
 {
     var picker = new MediaPicker(this);
     DateTime now = DateTime.Now;
     var intent = picker.GetTakePhotoUI(new StoreCameraMediaOptions
     {
         Name = "picture_" + now.Day + "_" + now.Month + "_" + now.Year + ".jpg",
         Directory = null
     });
     StartActivityForResult(intent, 1);
 }
```

5. ◦ ◦ exif

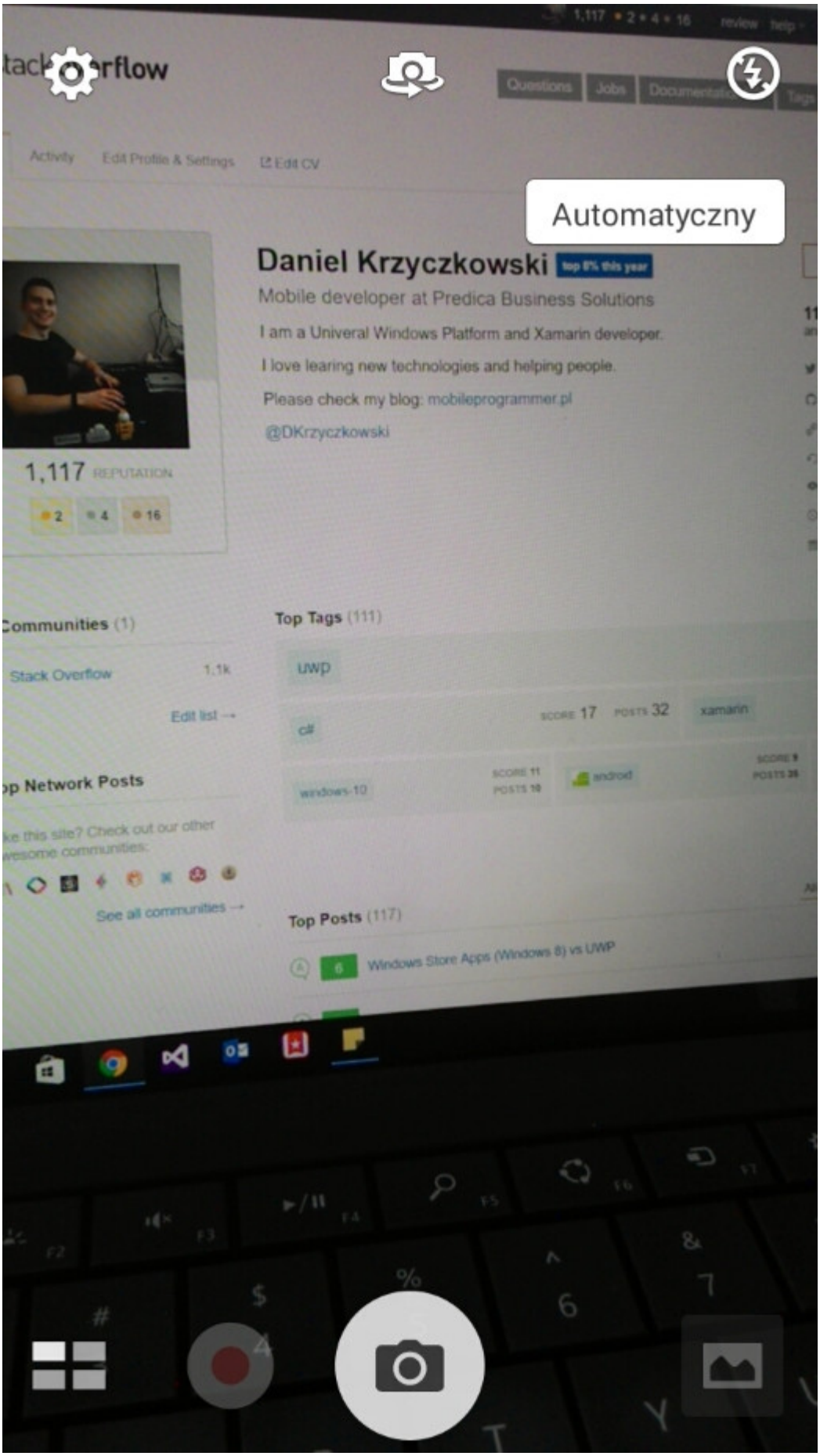
```
Bitmap loadAndResizeBitmap(string filePath)
 {
     BitmapFactory.Options options = new BitmapFactory.Options { InJustDecodeBounds =
true };
     BitmapFactory.DecodeFile(filePath, options);

     int REQUIRED_SIZE = 100;
     int width_tmp = options.OutWidth, height_tmp = options.OutHeight;
     int scale = 4;
     while (true)
     {
         if (width_tmp / 2 < REQUIRED_SIZE || height_tmp / 2 < REQUIRED_SIZE)
             break;
         width_tmp /= 2;
         height_tmp /= 2;
         scale++;
     }

     options.InSampleSize = scale;
     options.InJustDecodeBounds = false;
     Bitmap resizedBitmap = BitmapFactory.DecodeFile(filePath, options);

     ExifInterface exif = null;
     try
     {
         exif = new ExifInterface(filePath);
         string orientation = exif.GetAttribute(ExifInterface.TagOrientation);

         Matrix matrix = new Matrix();
         switch (orientation)
         {
             case "1": // landscape
                 break;
             case "3":
                 matrix.PreRotate(180);
                 resizedBitmap = Bitmap.CreateBitmap(resizedBitmap, 0, 0,
resizedBitmap.Width, resizedBitmap.Height, matrix, false);
                 matrix.Dispose();
                 matrix = null;
                 break;
             case "4":
                 matrix.PreRotate(180);
                 resizedBitmap = Bitmap.CreateBitmap(resizedBitmap, 0, 0,
resizedBitmap.Width, resizedBitmap.Height, matrix, false);
                 matrix.Dispose();
                 matrix = null;
                 break;
             case "5":
                 matrix.PreRotate(90);
                 resizedBitmap = Bitmap.CreateBitmap(resizedBitmap, 0, 0,
resizedBitmap.Width, resizedBitmap.Height, matrix, false);
                 matrix.Dispose();
                 matrix = null;
                 break;
             case "6": // portrait
                 matrix.PreRotate(90);
                 resizedBitmap = Bitmap.CreateBitmap(resizedBitmap, 0, 0,
resizedBitmap.Width, resizedBitmap.Height, matrix, false);
                 matrix.Dispose();
                 matrix = null;
                 break;
```

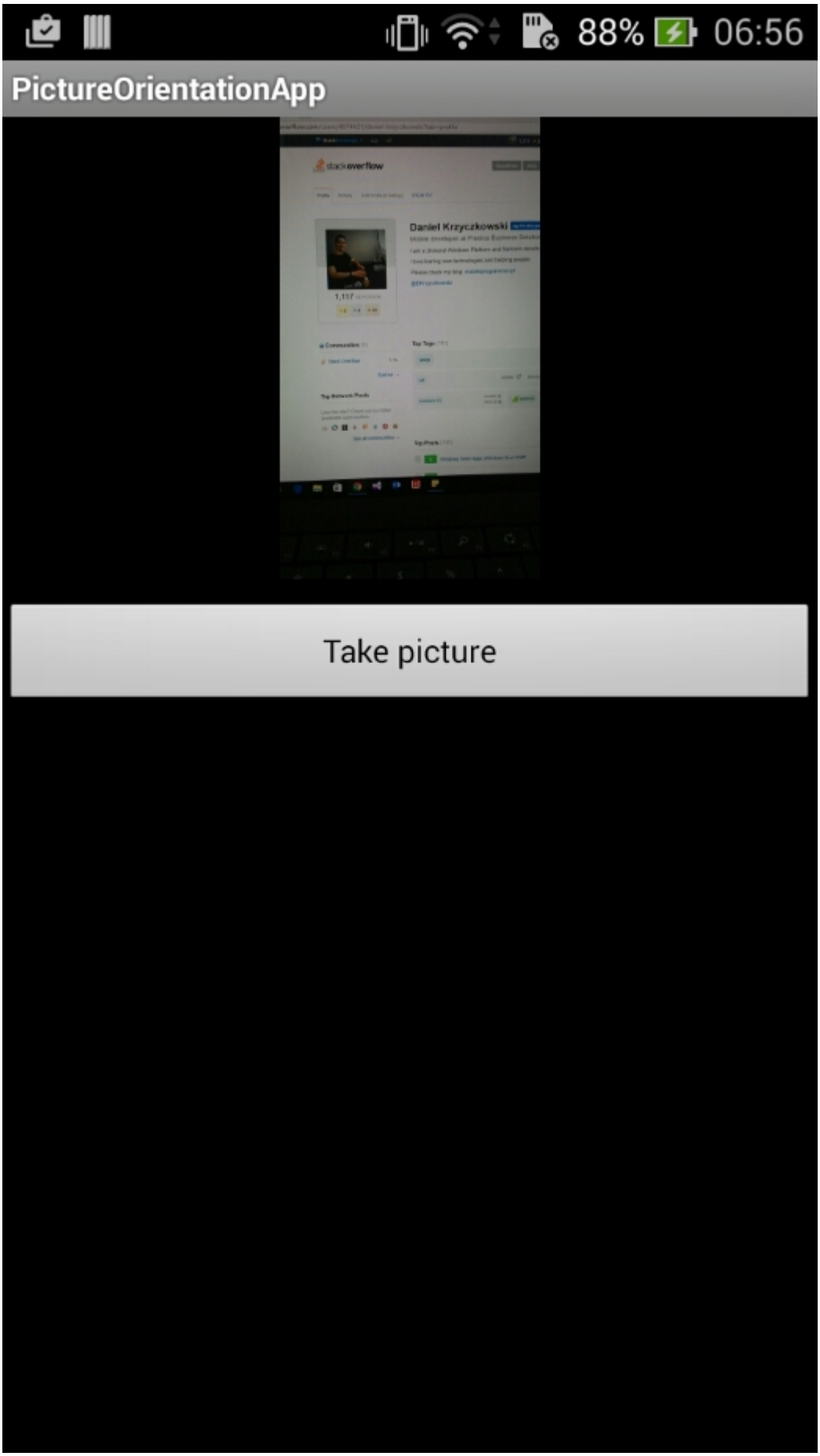
```
            case "7":
                matrix.PreRotate(-90);
                resizedBitmap = Bitmap.CreateBitmap(resizedBitmap, 0, 0,
resizedBitmap.Width, resizedBitmap.Height, matrix, false);
                matrix.Dispose();
                matrix = null;
                break;
            case "8":
                matrix.PreRotate(-90);
                resizedBitmap = Bitmap.CreateBitmap(resizedBitmap, 0, 0,
resizedBitmap.Width, resizedBitmap.Height, matrix, false);
                matrix.Dispose();
                matrix = null;
                break;
        }

        return resizedBitmap;
    }

    catch (IOException ex)
    {
        Console.WriteLine("An exception was thrown when reading exif from media
file...:" + ex.Message);
        return null;
    }
 }
```

6. OnActivityResult

```
protected override void OnActivityResult(int requestCode, Result resultCode, Intent data)
 {
     base.OnActivityResult(requestCode, resultCode, data);

     if (requestCode == 1)
     {
         if (resultCode == Result.Ok)
         {
             data.GetMediaFileExtraAsync(this).ContinueWith(t =>
             {
                 using (Bitmap bmp = loadAndResizeBitmap(t.Result.Path))
                 {
                     if (bmp != null)
                     _takenPictureImageView.SetImageBitmap(bmp);
                 }

             }, TaskScheduler.FromCurrentSynchronizationContext());
         }
     }
 }
```

7. ◦


Automatyczny
Daniel Krzyczkowski
Mobile developer at Predica Business Solutions
I am a Univeral Windows Platform and Xamarin developer.
I love learing new technologies and helping people.
Please check my blog: mobileprogrammer.pl
@DKrzyczkowski
1,117 REPUTATION
Communities (1)
Stack Overflow
Top Tags (111)
uwp
xamarin
Top Posts (117)
Windows Store Apps (Windows 8) vs UWP


88%
06:56
PictureOrientationApp
Daniel Krzyczkowski
Take picture

。 。

Android https://riptutorial.com/zh-TW/xamarin-android/topic/6683/android

7:

Context

ActiviyDialog this。

```
AlertDialog.Builder builder = new AlertDialog.Builder(this);
```

FragmentsContext 。

```
AlertDialog.Builder builder = new AlertDialog.Builder(Context);
```

SetNeutralButton()。 SetPositiveButton()"" SetNegativeButton()。

SetCanceable(false) 。 。

---

okcancel。 。

DialogFragment 。

Examples

```
AlertDialog.Builder builder = new AlertDialog.Builder(Context);
builder.SetIcon(Resource.Drawable.Icon);
builder.SetTitle(title);
builder.SetMessage(message);

builder.SetNeutralButton("Neutral", (evt, args) => {
    // code here for handling the Neutral tap
});

builder.SetPositiveButton("Ok", (evt, args) => {
    // code here for handling the OK tap
});

builder.SetNegativeButton("Cancel", (evt, args) => {
    // code here for handling the Cancel tap
});

builder.SetCancelable(false);
builder.Show();
```

https://riptutorial.com/zh-TW/xamarin-android/topic/2510/

8:

setTitle	
SetIcon	
SetMessage	。
SetNegativeButtonStringEventHandler	。
SetPositiveButtonStringEventHandler	。
SetNeutralButtonStringEventHandler	。
SetOnCancelListenerIDialogInterfaceOnCancelListener	。
SetOnDismissListenerIDialogInterfaceOnDismissListener	。
	AlertDialogDialog.Show。

Android.App

Mono.AndroidMono.Android.dll

0.0.0.0

AlertDialog.BuilderContext -

AlertDialog。

AlertDialog.BuilderContextInt32 -

AlertDialog。

Material Design AlertDialog

AlertDialog

1. NuGetSupport v7 AppCompat
2. AlertDialogAndroid.Support.V7.App.AlertDialog。

```
        using AlertDialog = Android.Support.V7.App.AlertDialog;
```

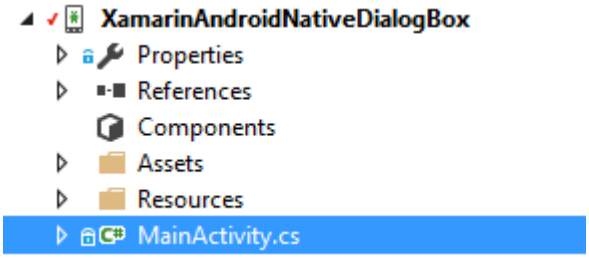
Examples

AlertDialog

```
// 1. Instantiate an AlertDialog.Builder with its constructor
// the parameter this is the context (usually your activity)
AlertDialog.Builder builder = new AlertDialog.Builder(this);

// 2. Chain together various setter methods to set the dialog characteristics
builder.SetMessage(Resource.String.dialog_message)
       .SetTitle(Resource.String.dialog_title);

// 3. Get the AlertDialog from create()
AlertDialog dialog = builder.Create();

dialog.Show();
```

Xamarin.Android

。

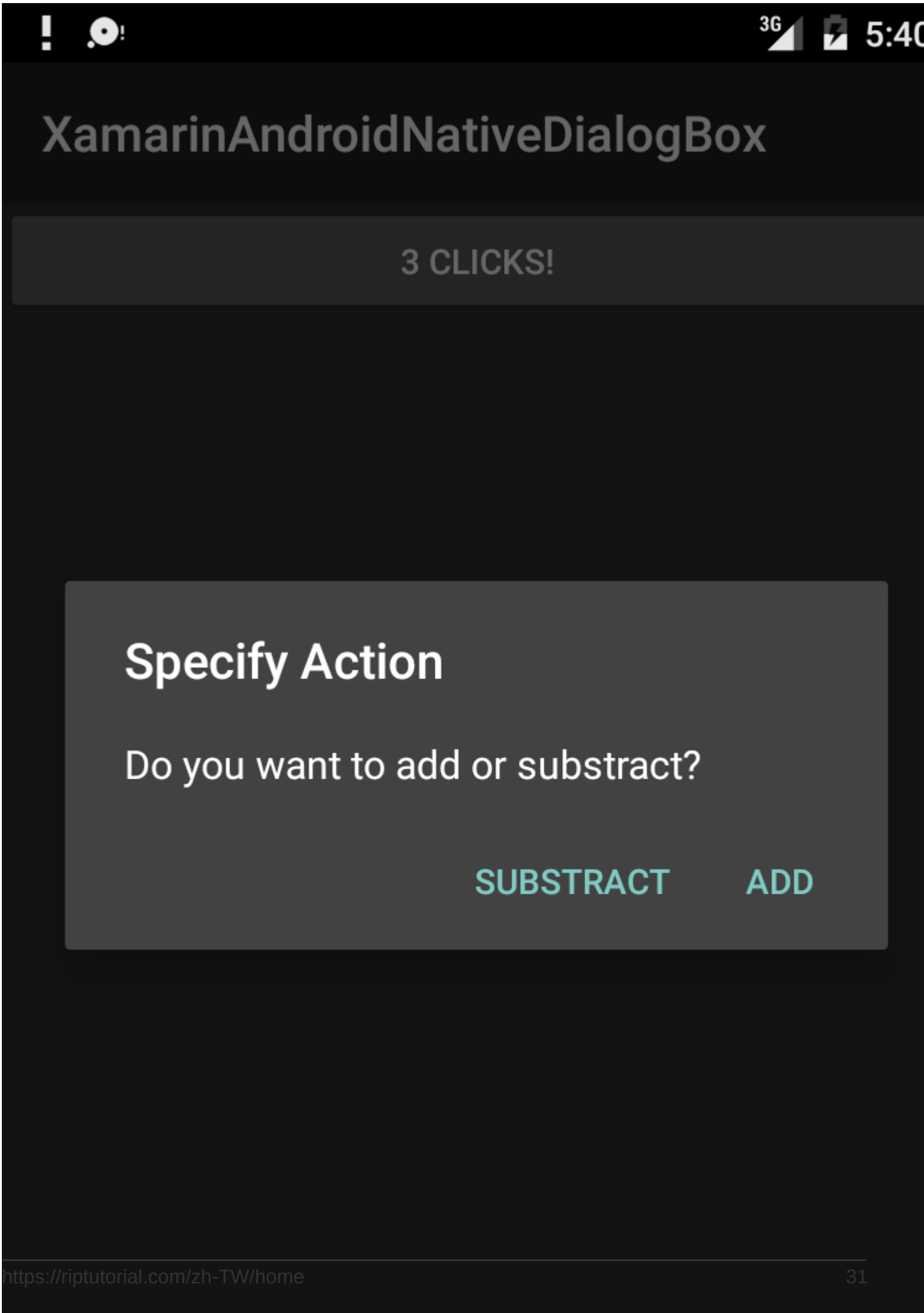



```
public class MainActivity : Activity
{
int count = 1;

protected override void OnCreate(Bundle bundle)
{
base.OnCreate(bundle);

// Set our view from the "main" layout resource
SetContentView(Resource.Layout.Main);

// Get our button from the layout resource,
// and attach an event to it
Button button = FindViewById<Button>(Resource.Id.MyButton);

button.Click += delegate { button.Text = string.Format("{0} clicks!", count++); };
}
}
```

“”“”。

```
button.Click += delegate {
AlertDialog.Builder alert = new AlertDialog.Builder(this);
alert.SetTitle("Specify Action");
alert.SetMessage("Do you want to add or substract?");
```

```
alert.SetPositiveButton("Add", (senderAlert, args) =>
{
count++;
button.Text = string.Format("{0} clicks!", count);
 });

 alert.SetNegativeButton("Substract", (senderAlert, args) =>
 {
 count--;
 button.Text = string.Format("{0} clicks!", count);
 });

 Dialog dialog = alert.Create();
     dialog.Show();
};
```


XamarinAndroidNativeDialogBox
3 CLICKS!
Specify Action
Do you want to add or substract?
SUBSTRACT
ADD

9: - Xamarin.Andorid

Xamarin.AndroidAndroid。 。

。 AndroidXamarinWeb。

Android

https://developer.android.com/reference/android/app/Activity.html

http://www.vogella.com/tutorials/AndroidLifeCycle/article.html

https://github.com/xxv/android-lifecycle

https://developer.android.com/guide/components/fragments.html

https://developer.xamarin.com/guides/android/platform_features/fragments/part_1_-_creating_a_fragment/

https://developer.android.com/guide/components/activities/activity-lifecycle.html

Examples

Android.Application

- OnCreate - MainActivity。
- OnTerminate - 。 Android;。 https //developer.android.com/reference/android/app/Application.html#onTerminate

Xamarin.AndroidApplication。“MyApplication.cs”

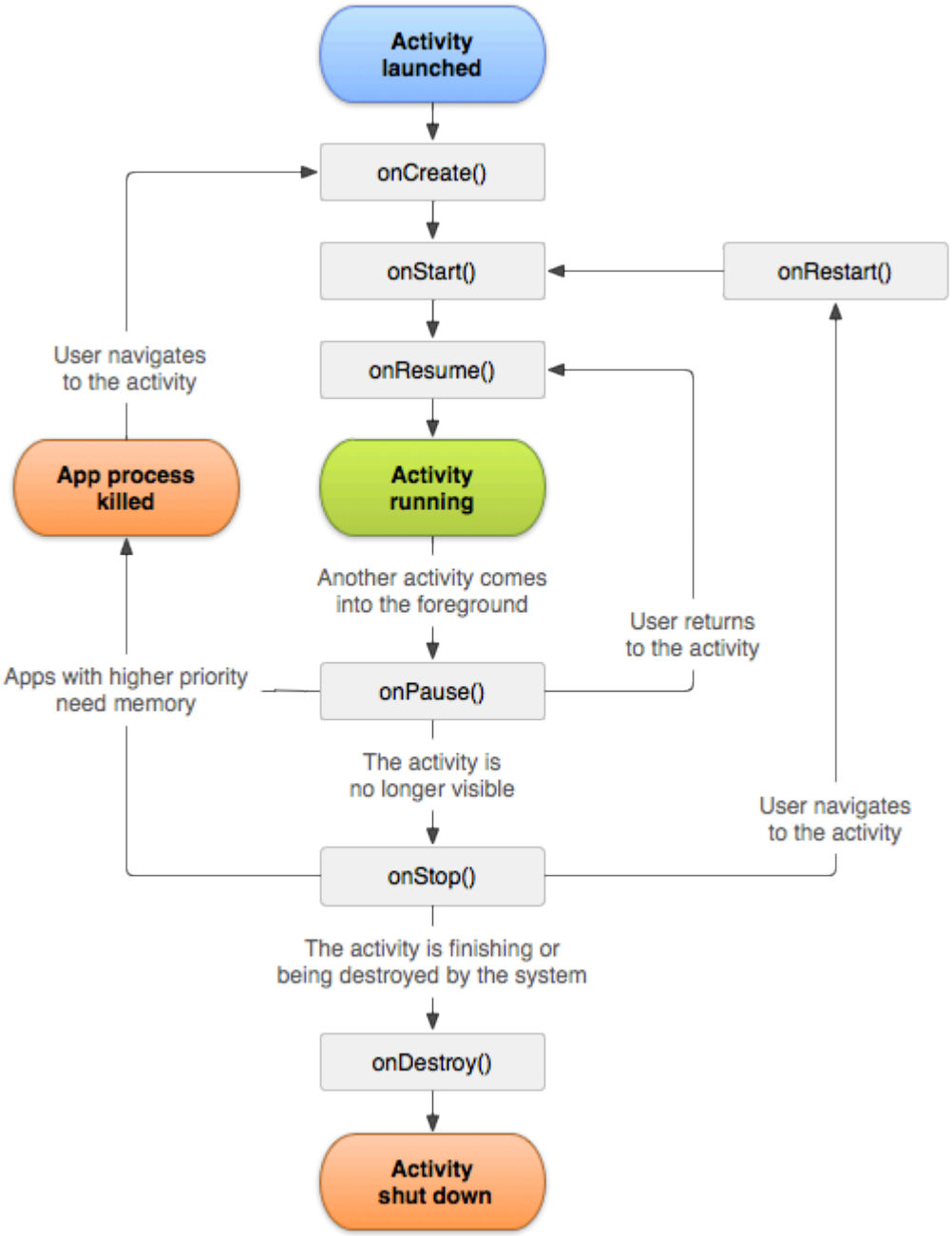
```
[Application]
public class MyApplication : Application
{
    public MyApplication(IntPtr handle, JniHandleOwnership ownerShip) : base(handle,
ownerShip)
    {
    }

    public override void OnCreate()
    {
        base.OnCreate();
    }

    public override void OnTerminate()
    {
        base.OnTerminate();
    }
}
```

OnCreate。。

OnConfigurationChangedOnLowMemory。

。ActivityAndroid。

Android Activity



Activity。Activity

```
[Activity(Label = "LifecycleApp", MainLauncher = true, Icon = "@mipmap/icon")]
public class MainActivity : Activity
{
    protected override void OnCreate(Bundle savedInstanceState)
    {
        base.OnCreate(savedInstanceState);
```

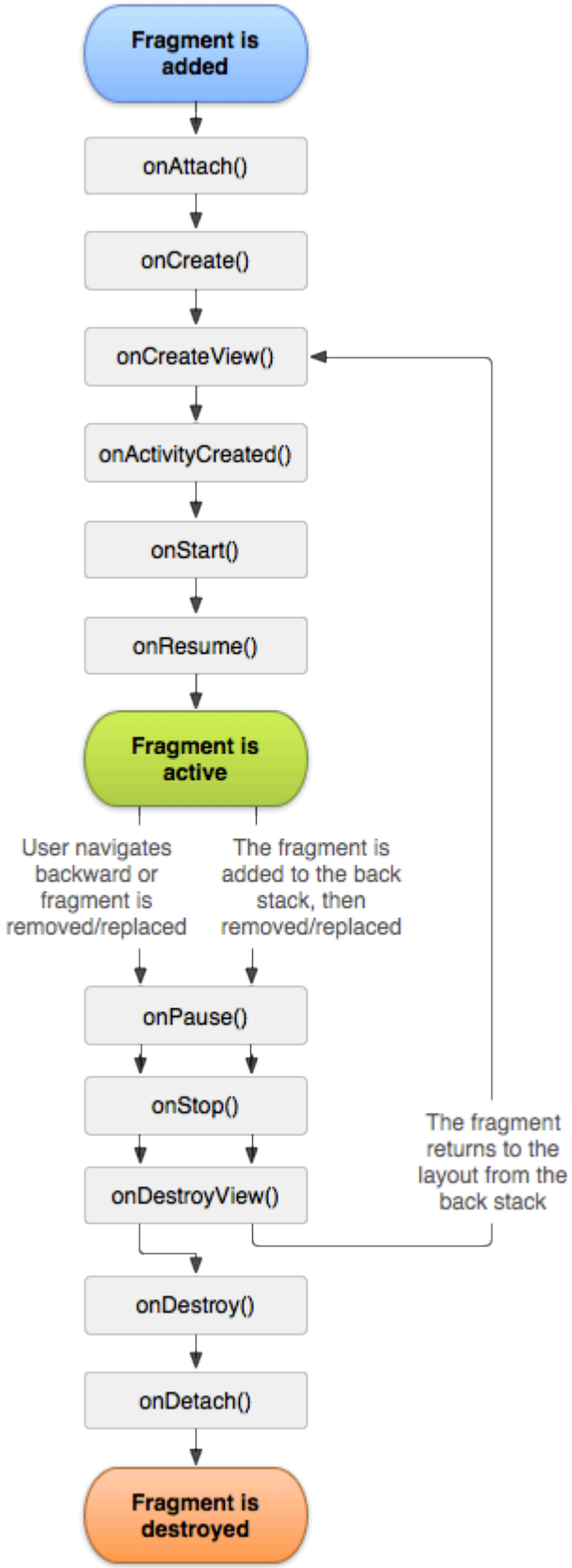
```
        Log.Debug("OnCreate", "OnCreate called, Activity components are being created");

        // Set our view from the "main" layout resource
        SetContentView(Resource.Layout.MainActivity);
    }

    protected override void OnStart()
    {
        Log.Debug("OnStart", "OnStart called, App is Active");
        base.OnStart();
    }

    protected override void OnResume()
    {
        Log.Debug("OnResume", "OnResume called, app is ready to interact with the user");
        base.OnResume();
    }

    protected override void OnPause()
    {
        Log.Debug("OnPause", "OnPause called, App is moving to background");
        base.OnPause();
    }

    protected override void OnStop()
    {
        Log.Debug("OnStop", "OnStop called, App is in the background");
        base.OnStop();
    }

    protected override void OnDestroy()
    {
        base.OnDestroy();
        Log.Debug("OnDestroy", "OnDestroy called, App is Terminating");
    }
}
```

Android

- onCreateBundleonDestroy。onCreate“”onDestroy。onCreateonDestroy。
- onStartonStop。。。onStartBroadcastReceiverUIonStop。 onStartonStop。
- onResumeonPause。。 - - 。

。。

Android



Android

- OnCreate - 。 。
- OnCreateView - 。 UI。 UInull。

- OnPause - 。 。

Xamarin.Android

```
public class MainFragment : Fragment
{
    public override void OnCreate(Bundle savedInstanceState)
    {
        base.OnCreate(savedInstanceState);

        // Create your fragment here
        // You should initialize essential components of the fragment
        // that you want to retain when the fragment is paused or stopped, then resumed.
    }

    public override View OnCreateView(LayoutInflater inflater, ViewGroup container, Bundle
savedInstanceState)
    {
        // Use this to return your custom view for this Fragment
        // The system calls this when it's time for the fragment to draw its user interface
for the first time.

        var mainView = inflater.Inflate(Resource.Layout.MainFragment, container, false);
        return mainView;
    }

    public override void OnPause()
    {
        // The system calls this method as the first indication that the user is leaving the
fragment

        base.OnPause();
    }
}
```

。

GitHub

GitHubXamarin.Android。

-
-
-

https://github.com/Daniel-Krzyczkowski/XamarinAndroid/tree/master/AndroidLifecycle/LifecycleApp

- Xamarin.Andorid https://riptutorial.com/zh-TW/xamarin-android/topic/8842/----xamarin-andorid

10: Xamarin.Android APK

Xamarin.Android。

Examples

Visual StudioAPK

◦ Google Play◦

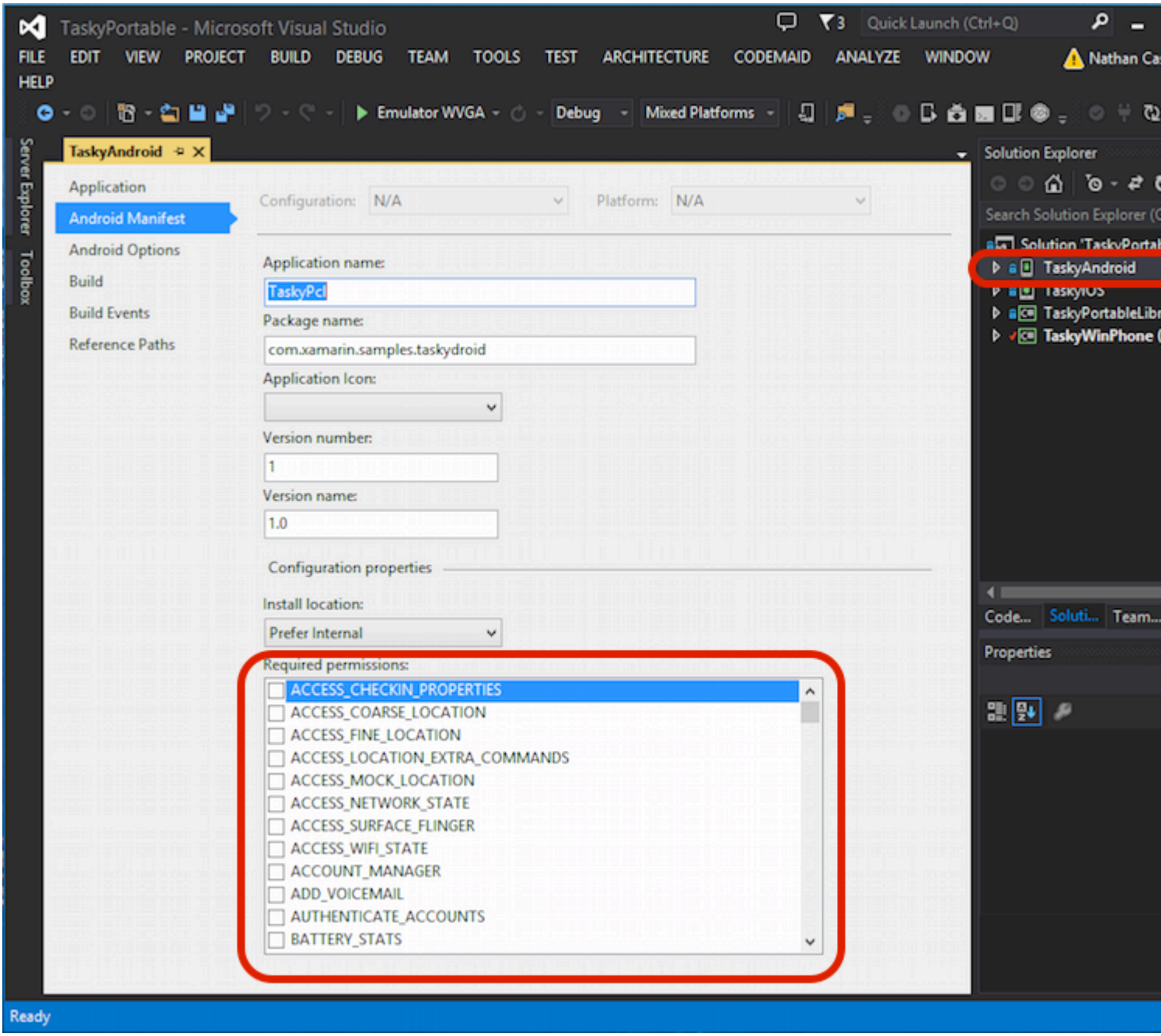
Xamarin

https://developer.xamarin.com/guides/android/deployment,_testing,_and_metrics/publishing_an_applicati

---

Android Manifest

Visual StudioXamarin.Android“”。 Android Manifest

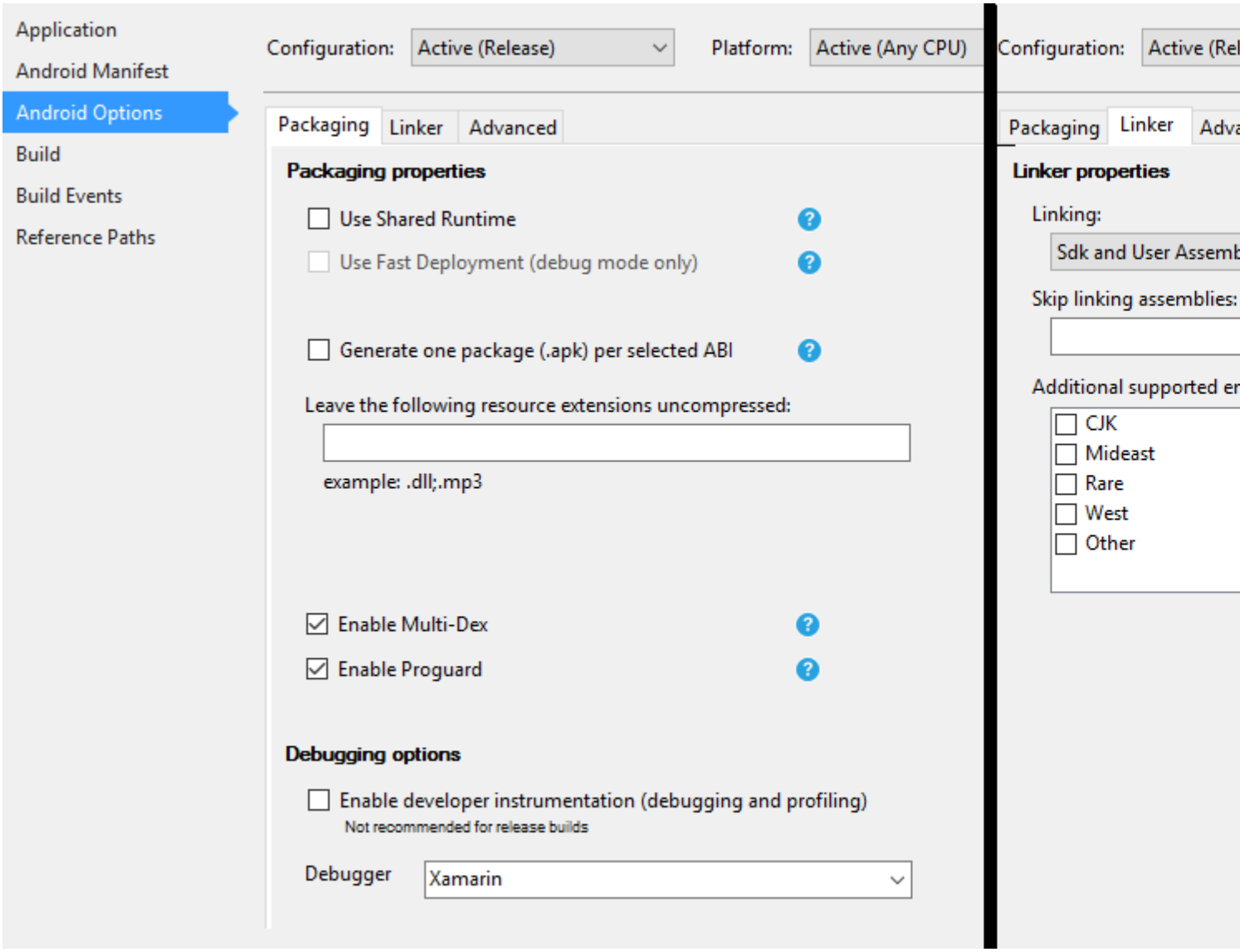


Android StudioEclipseAndroidManifest.xml; XamarinVisual Studio。BroadcastReceiversAndroid Manifest 。

- 。
- 。 Google Play。
- Android StudioEclipse@ drawable / ic_launcher。
- Google Play。APK1。
- 。
- APK SD。
- 。

Android

。APK。



- 。
- **CPU** 。Google PlayAPK。“”“”Google Play。
- **false** 。trueAPKMono Runtime。USBMono RuntimeRelease APK。Mono RuntimeRelease APKtrue。
- **ABI.apk false** 。APK。
- **Multi-Dex true** 65536 false。
- **Proguard true** 。ProguardJava。.NET;.NETDotfuscator 。Proguard for Xamarin.Android 。
- Release APK**false** 。
- **SDK** 。XamarinSDKAPK。

Xamarin.LinkerCorePCL。“Sdk”“”

PreserveAttribute.cs

```
namespace My_App_Core.Models
{
```

```
    public sealed class PreserveAttribute : System.Attribute
    {
        public bool AllMembers;
        public bool Conditional;
    }
}
```

```
using System;

namespace My_App_Core.Models
{
    [Preserve(AllMembers = true)]
    public class ServiceException : Exception
    {
        public int errorCode;

        [Preserve(AllMembers = true)]
        public ServiceException() { }

        [Preserve(AllMembers = true)]
        public ServiceException(int errorCode)
        {
            this.errorCode = errorCode;
        }
    }
}
```

- **all** 。

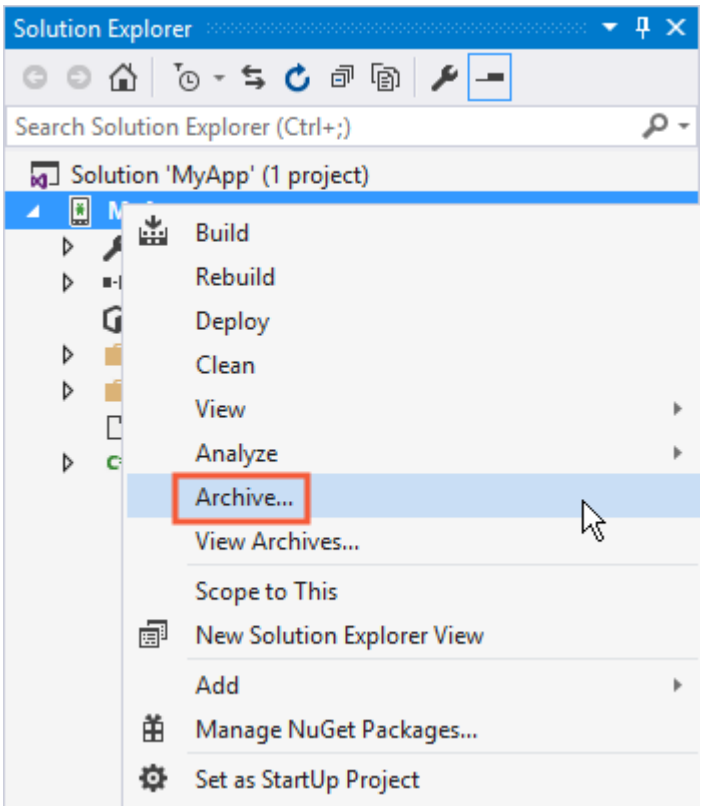
。

APK

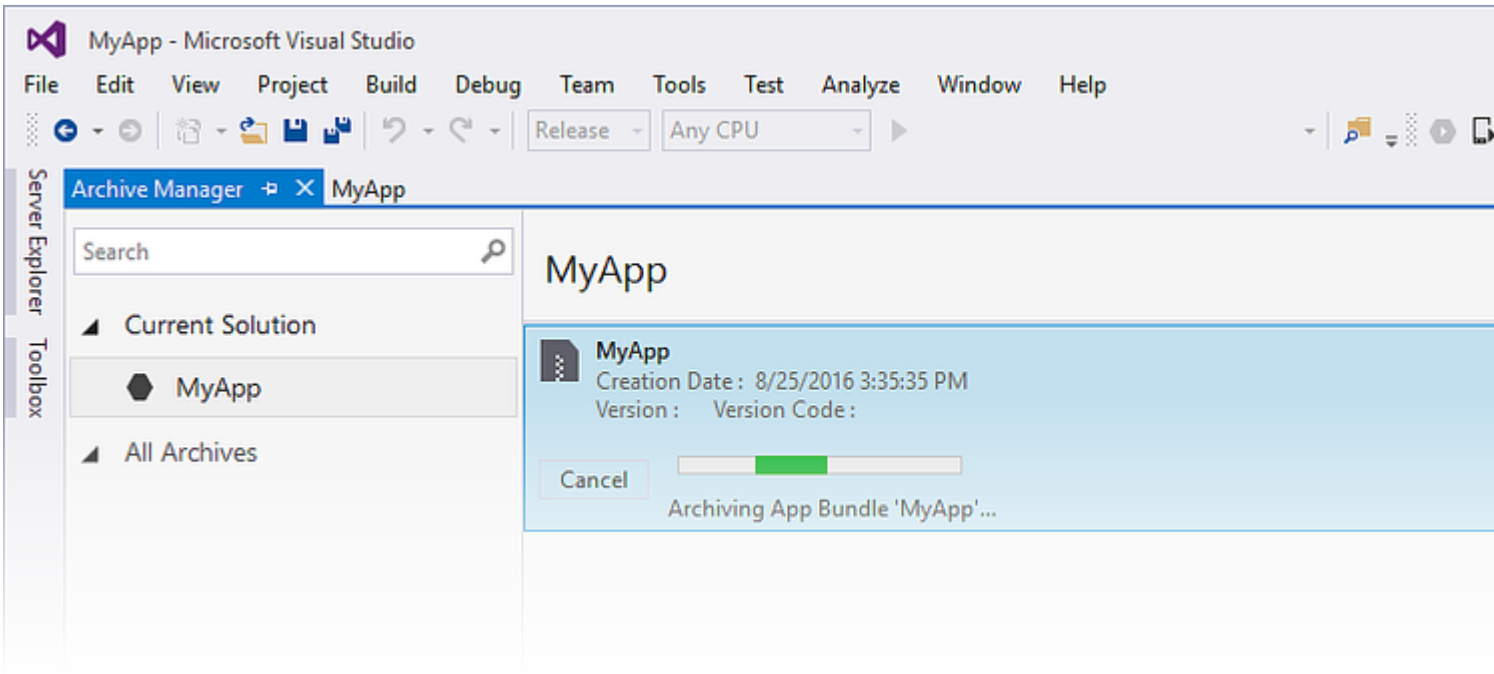
ReleaseAndroid。Visual StudioAPK。Xamarin

https://developer.xamarin.com/guides/android/deployment,_testing,_and_metrics/publishing_an_applicati
_signing_the_android_application_package/

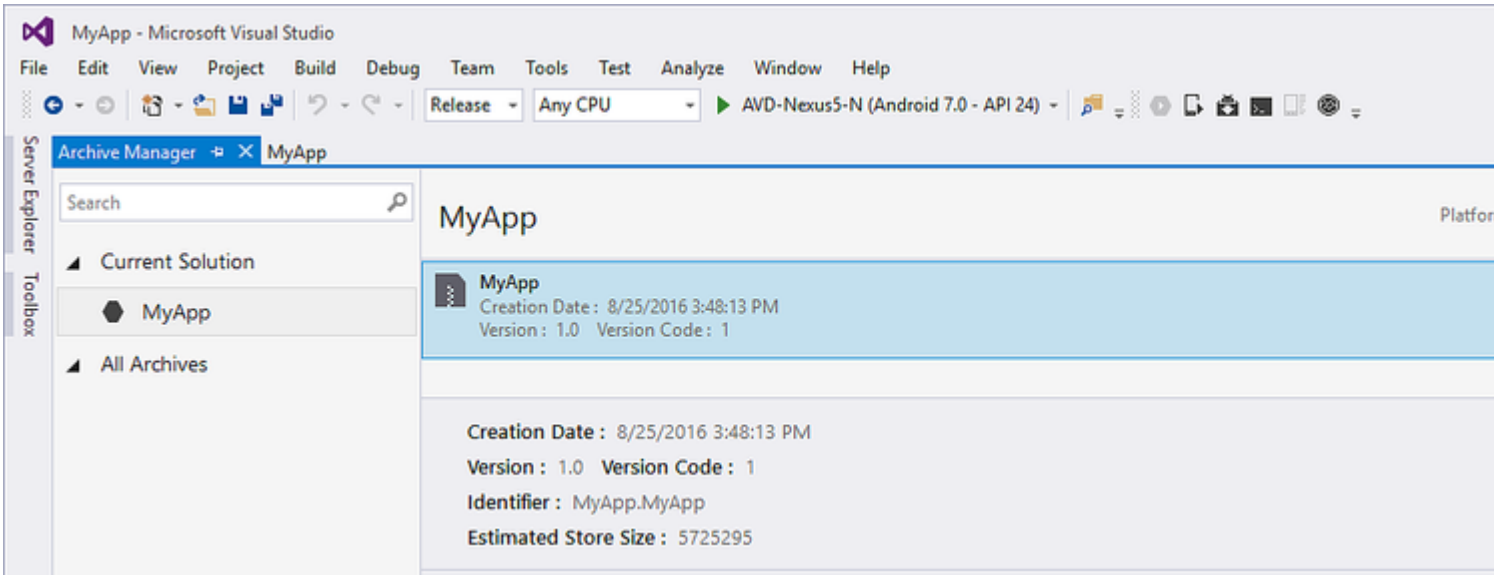
APKXamarin.Android...


Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyApp' (1 project)
Build
Rebuild
Deploy
Clean
View
Analyze
Archive...
View Archives...
Scope to This
New Solution Explorer View
Add
Manage NuGet Packages...
Set as StartUp Project

APK。

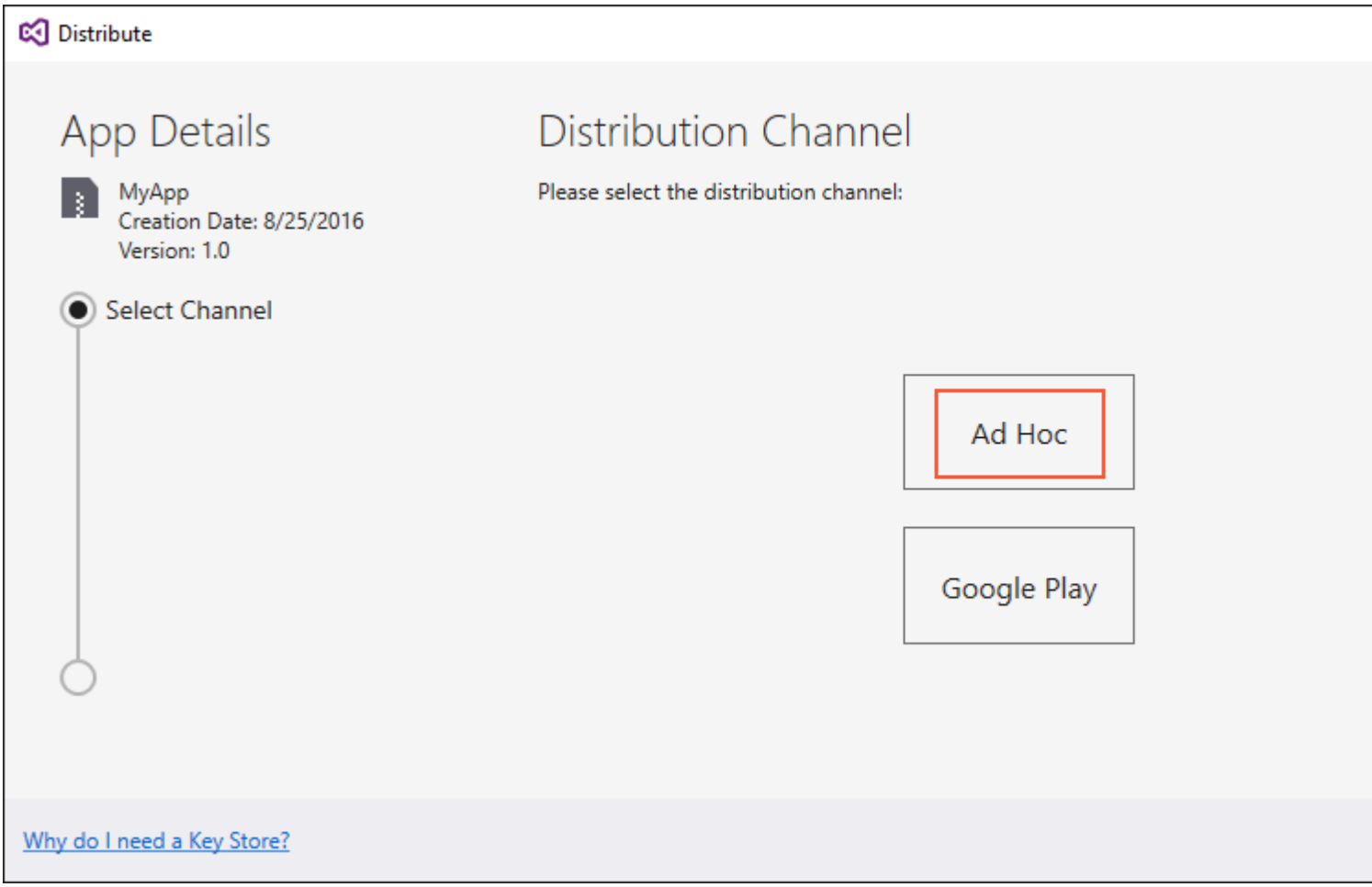

MyApp - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Release
Any CPU
Archive Manager
MyApp
Server Explorer
Toolbox
Search
Current Solution
MyApp
All Archives
MyApp
MyApp
Creation Date : 8/25/2016 3:35:35 PM
Version : Version Code :
Cancel
Archiving App Bundle 'MyApp'...

“...”。

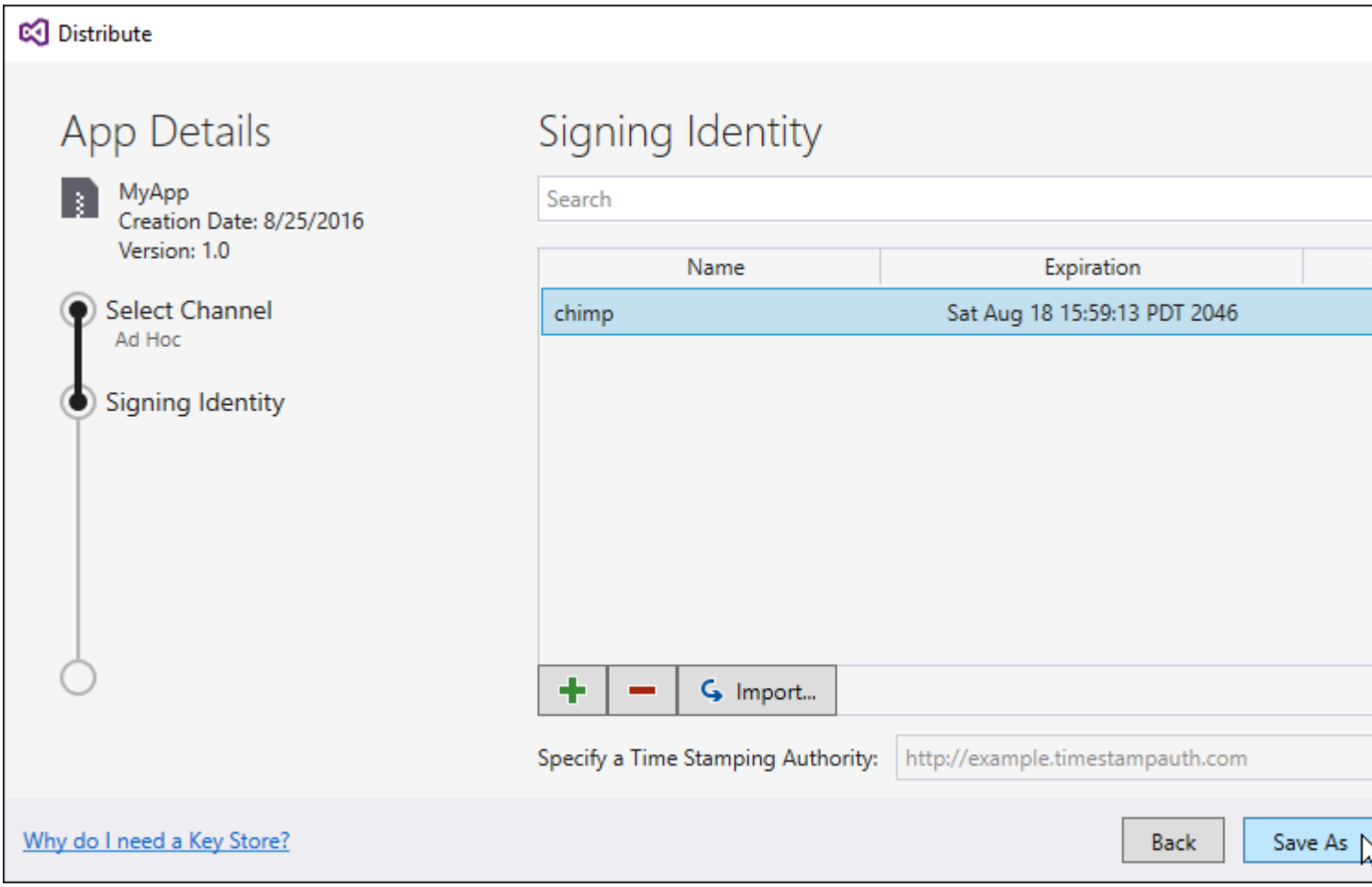


DistributeAd-hocGoogle Play。APK。Google Play。

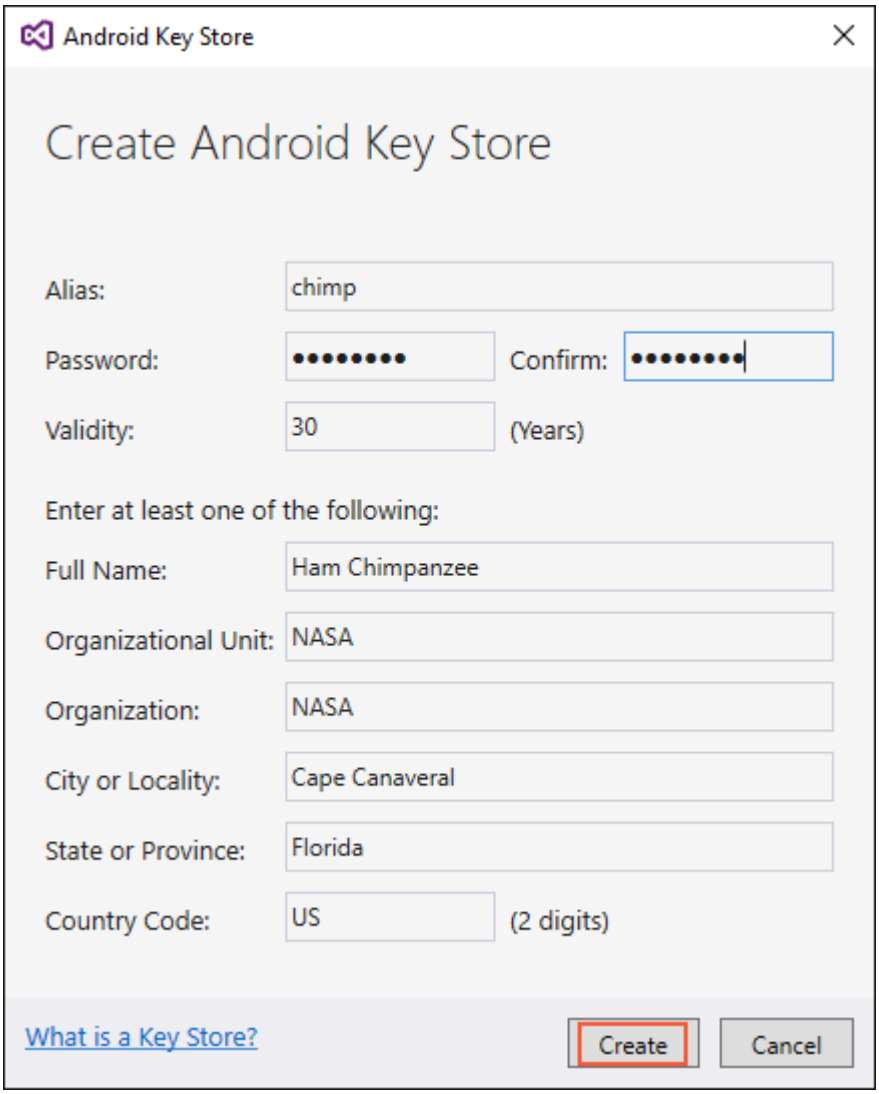
APK。



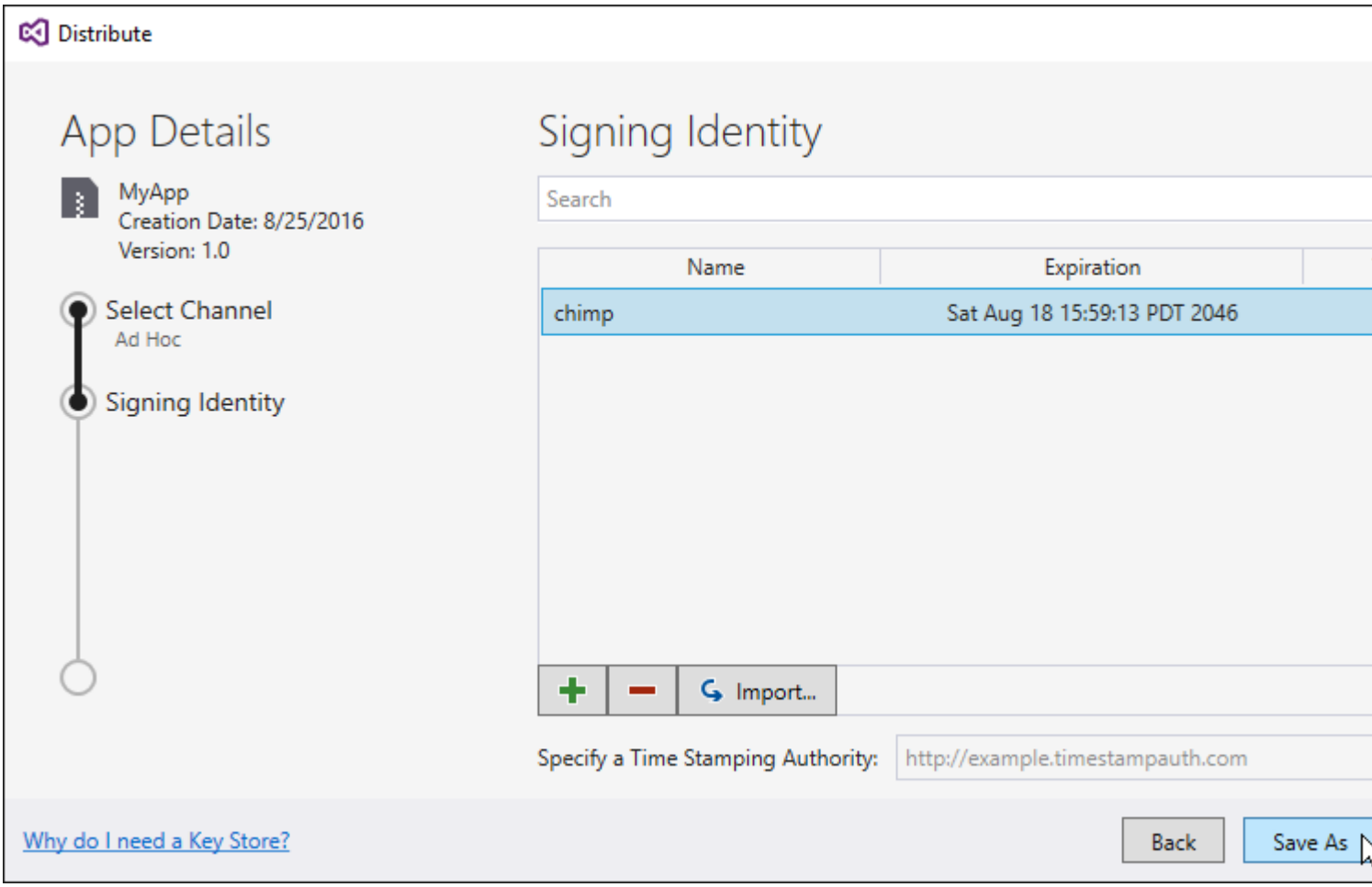
AndroidAPK。...;+Android。

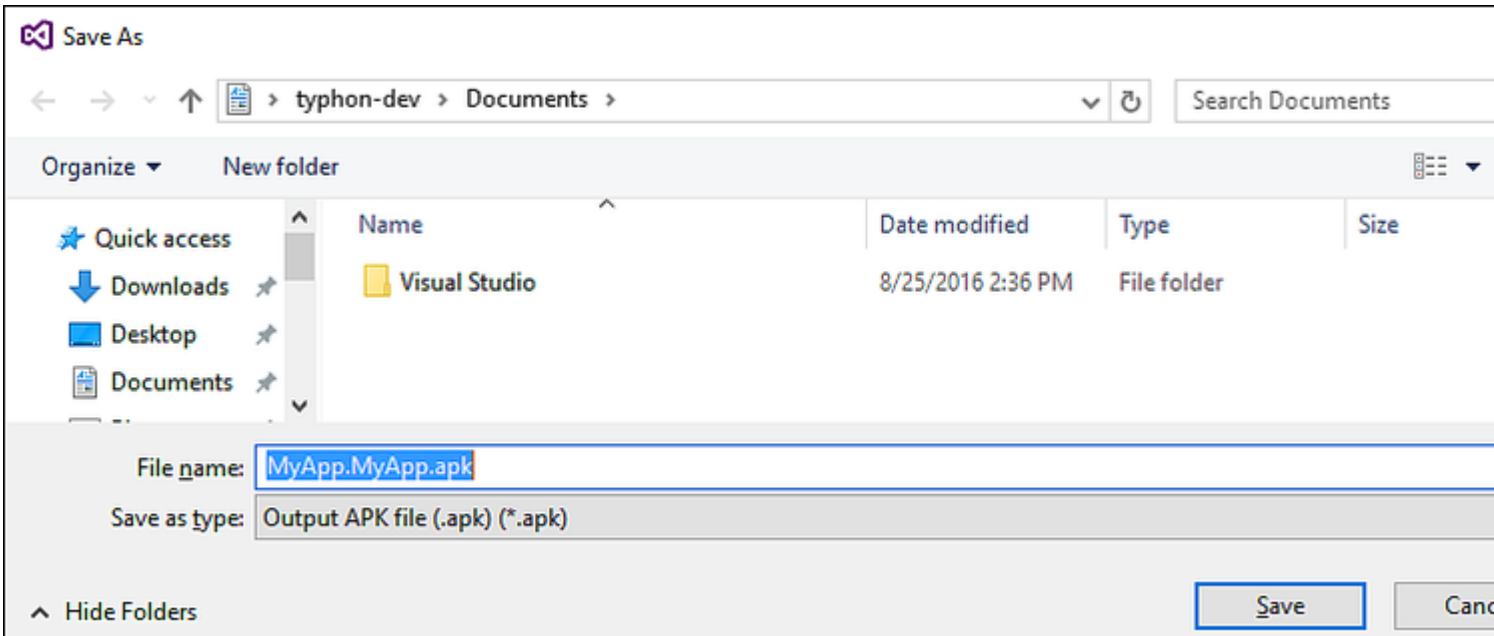


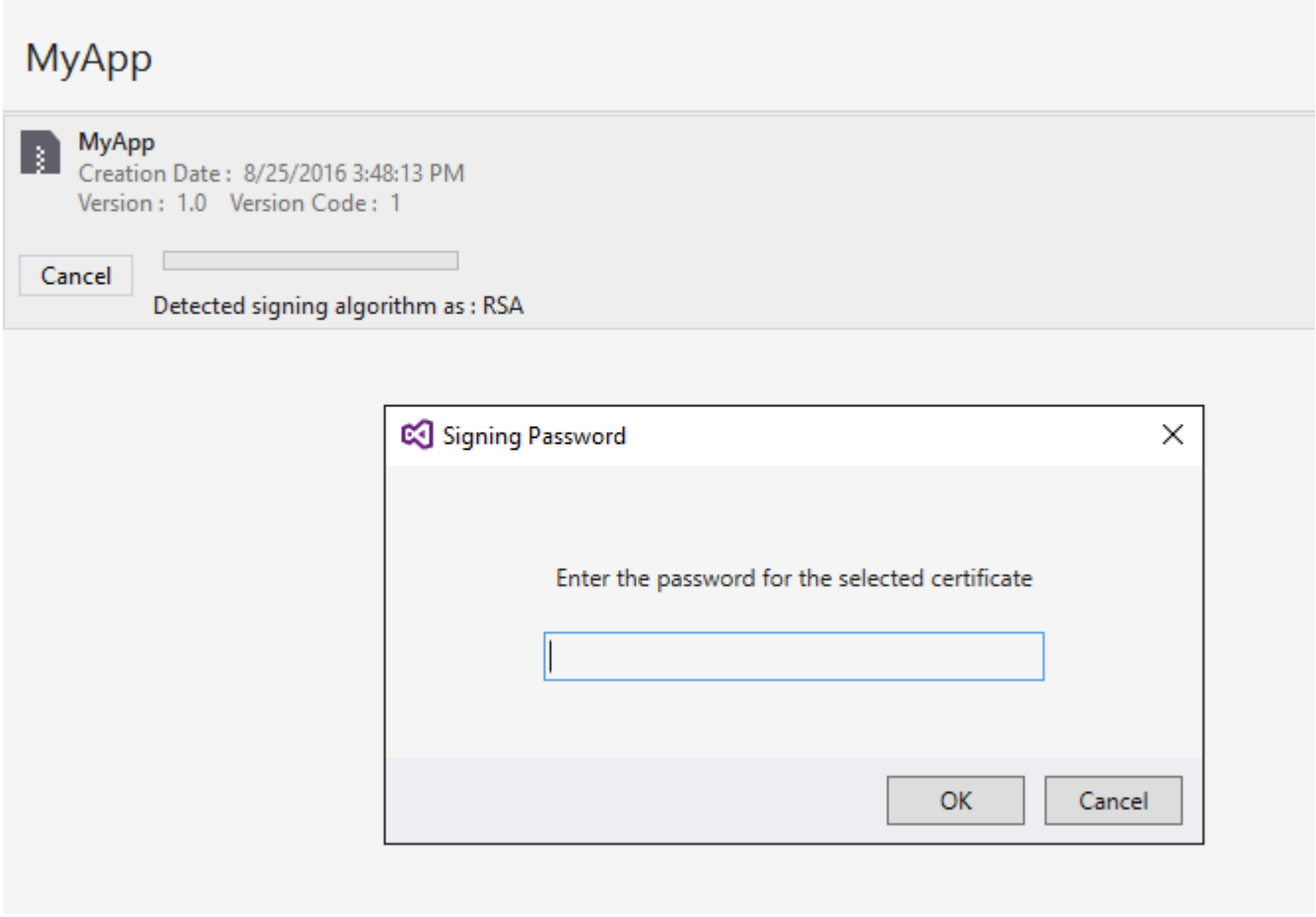
Android Key Store


Android Key Store
Create Android Key Store
Alias:
chimp
Password:
Confirm:
Validity:
30
(Years)
Enter at least one of the following:
Full Name:
Ham Chimpanzee
Organizational Unit:
NASA
Organization:
NASA
City or Locality:
Cape Canaveral
State or Province:
Florida
Country Code:
US
(2 digits)
What is a Key Store?
Create
Cancel

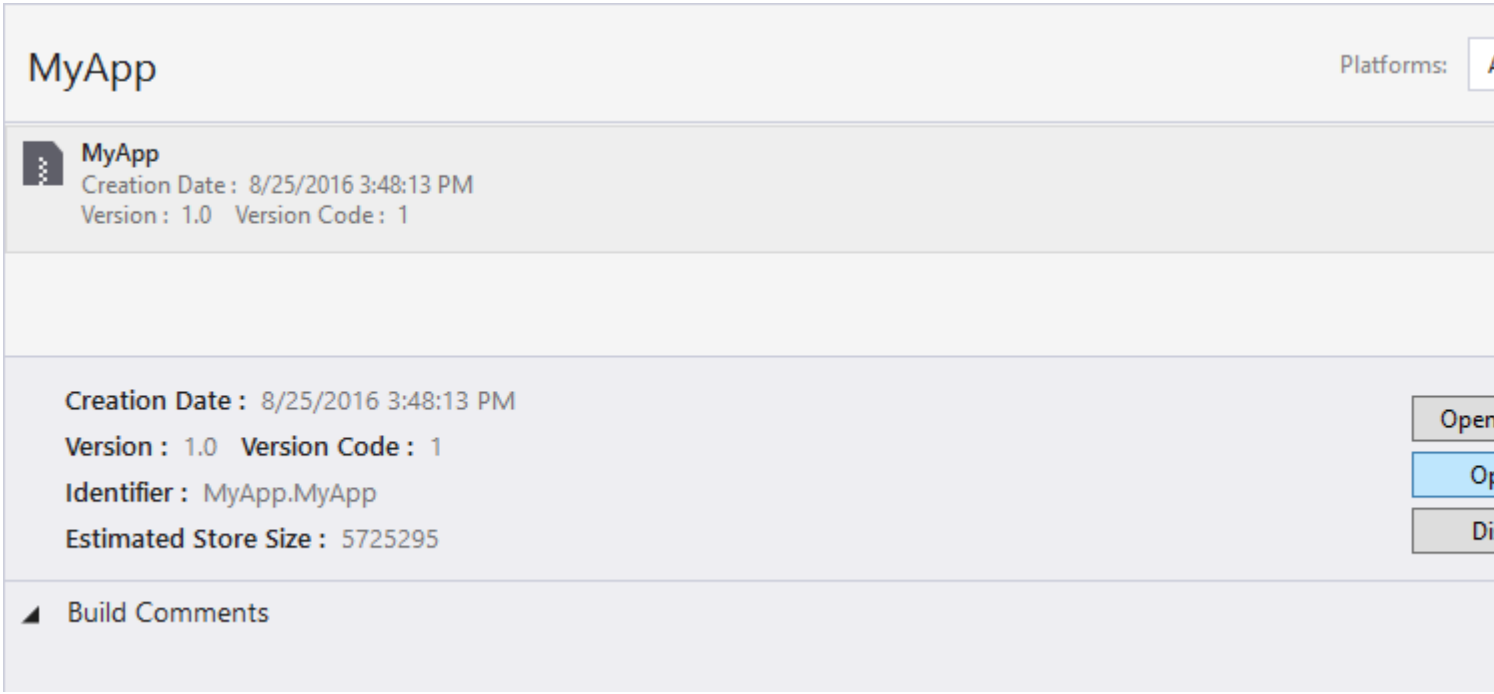
APK“”。。

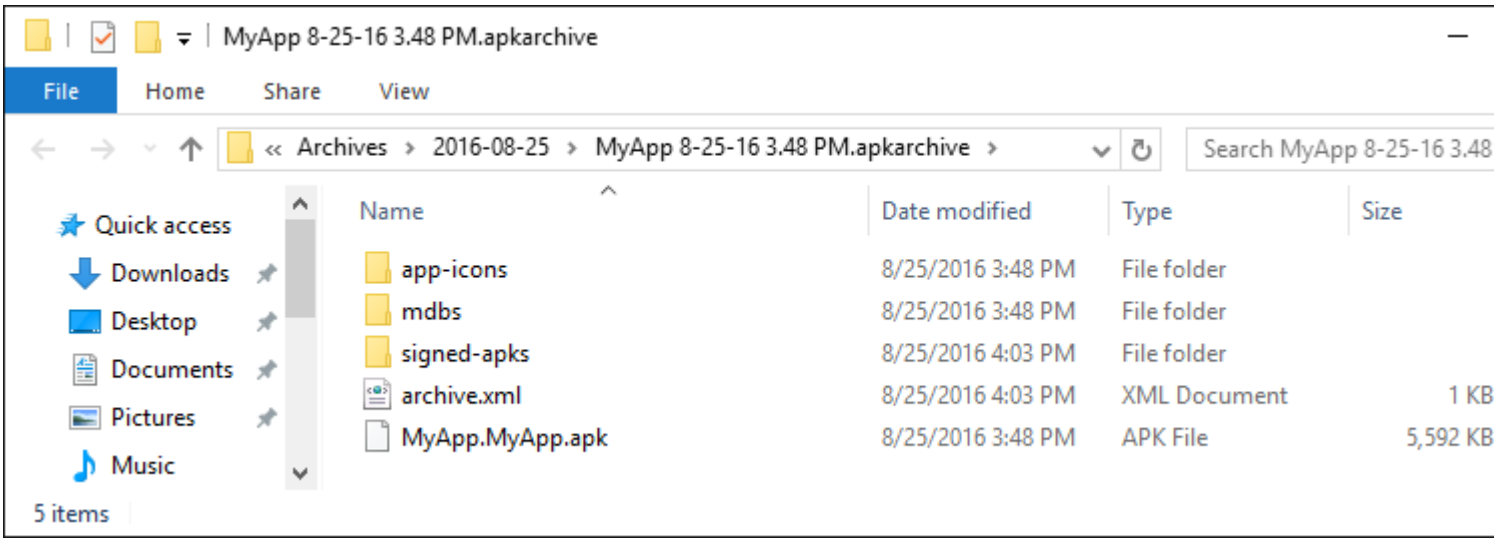

Distribute
App Details
MyApp
Creation Date: 8/25/2016
Version: 1.0
Select Channel
Ad Hoc
Signing Identity
Signing Identity
Search
Name
Expiration
chimp
Sat Aug 18 15:59:13 PDT 2046
Import...
Specify a Time Stamping Authority:
http://example.timestampauth.com
Why do I need a Key Store?
Back
Save As


Save As
typhon-dev
Documents
Search Documents
Organize
New folder
Quick access
Downloads
Desktop
Documents
Name
Date modified
Type
Size
Visual Studio
8/25/2016 2:36 PM
File folder
File name:
MyApp.MyApp.apk
Save as type:
Output APK file (.apk) (*.apk)
Hide Folders
Save


MyApp
MyApp
Creation Date : 8/25/2016 3:48:13 PM
Version : 1.0 Version Code : 1
Cancel
Detected signing algorithm as : RSA
Signing Password
Enter the password for the selected certificate
OK
Cancel

“”“”APK。


MyApp
Platforms:
MyApp
Creation Date : 8/25/2016 3:48:13 PM
Version : 1.0 Version Code : 1
Creation Date : 8/25/2016 3:48:13 PM
Version : 1.0 Version Code : 1
Identifier : MyApp.MyApp
Estimated Store Size : 5725295
Build Comments



Xamarin.Android APKMultiDex

MultiDexAndroid APK65,536。

Android APKDalvik.dexJava。.dex65,5362 ^ 16。

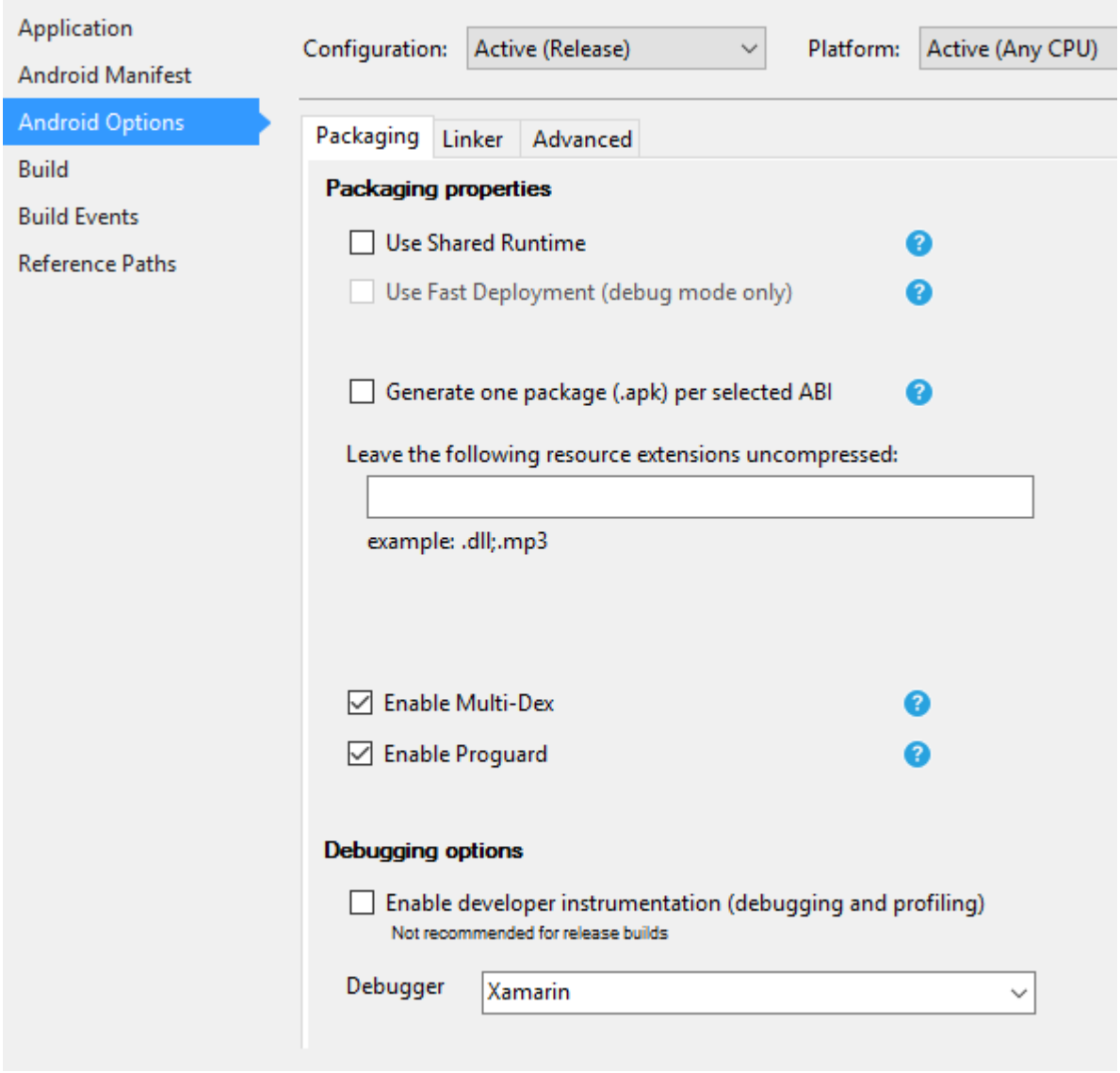
Android 5.0 LollipopAPI 21Android OSDalvikAPK.dexAPK65,536。Android 5.0AndroidARTAPK .dex。

API 21Android65kMultiDex。MultiDexclasses.dexclasses.dexclasses2.dexclasses3.dex...。MultiDexApplication.dex。

AndroidAPI 21Android 5.0 LollipopSDKMultiDex.dex。Android/MultiDex。

Xamarin.AndroidMultiDex

Xamarin.AndroidMultiDex - > Android - > - >Multi-Dex



MultiDexApplication。.. - >Shift + Alt + C。SampleXamarin.Android。

```
using System;
using Android.App;
using Android.Runtime;
using Java.Interop;

namespace Sample
{
    [Register("android/support/multidex/MultiDexApplication", DoNotGenerateAcw = true)]
    public class MultiDexApplication : Application
    {
        internal static readonly JniPeerMembers _members =
        new XAPeerMembers("android/support/multidex/MultiDexApplication", typeof
(MultiDexApplication));

        internal static IntPtr java_class_handle;

        private static IntPtr id_ctor;

        [Register(".ctor", "()V", "", DoNotGenerateAcw = true)]
        public MultiDexApplication()
        : base(IntPtr.Zero, JniHandleOwnership.DoNotTransfer)
        {
```

```
            if (Handle != IntPtr.Zero)
                return;

            try
            {
                if (GetType() != typeof (MultiDexApplication))
                {
                    SetHandle(
                        JNIEnv.StartCreateInstance(GetType(), "()V"),
                        JniHandleOwnership.TransferLocalRef);
                        JNIEnv.FinishCreateInstance(Handle, "()V");
                    return;
                }

                if (id_ctor == IntPtr.Zero)
                    id_ctor = JNIEnv.GetMethodID(class_ref, "<init>", "()V");
                SetHandle(
                    JNIEnv.StartCreateInstance(class_ref, id_ctor),
                    JniHandleOwnership.TransferLocalRef);
                JNIEnv.FinishCreateInstance(Handle, class_ref, id_ctor);
            }
            finally
            {
            }
        }

        protected MultiDexApplication(IntPtr javaReference, JniHandleOwnership transfer)
            : base(javaReference, transfer)
        {
        }

        internal static IntPtr class_ref
        {
            get { return JNIEnv.FindClass("android/support/multidex/MultiDexApplication", ref
java_class_handle); }
        }

        protected override IntPtr ThresholdClass
        {
            get { return class_ref; }
        }

        protected override Type ThresholdType
        {
            get { return typeof (MultiDexApplication); }
        }
    }
}
```

。

Visual Studio for WindowsAndroid SDKclasses.dex。

Android SDKbuild-toolsAndroid SDK

C\ AndroidSDK \\ 23.0.3 \

C\ AndroidSDK \\ 24.0.1 \

C\ AndroidSDK \\ 25.0.2 \

mainClassesDex.batclasses.dex。 NotepadNotepad ++mainClassesDex.bat

```
if DEFINED output goto redirect
call "%java_exe%" -Djava.ext.dirs="%frameworkdir%" com.android.multidex.MainDexListBuilder
"%disableKeepAnnotated%" "%tmpJar%" "%params%"
goto afterClassReferenceListBuilder
:redirect
call "%java_exe%" -Djava.ext.dirs="%frameworkdir%" com.android.multidex.MainDexListBuilder
"%disableKeepAnnotated%" "%tmpJar%" "%params%" 1>"%output%"
:afterClassReferenceListBuilder
```

```
SET params=%params:'=%
if DEFINED output goto redirect
call "%java_exe%" -Djava.ext.dirs="%frameworkdir%" com.android.multidex.MainDexListBuilder
%disableKeepAnnotated% "%tmpJar%" %params%
goto afterClassReferenceListBuilder
:redirect
call "%java_exe%" -Djava.ext.dirs="%frameworkdir%" com.android.multidex.MainDexListBuilder
%disableKeepAnnotated% "%tmpJar%" %params% 1>"%output%"
:afterClassReferenceListBuilder
```

。

mainClassesDex.bat。

MultiDexXamarin.Android。

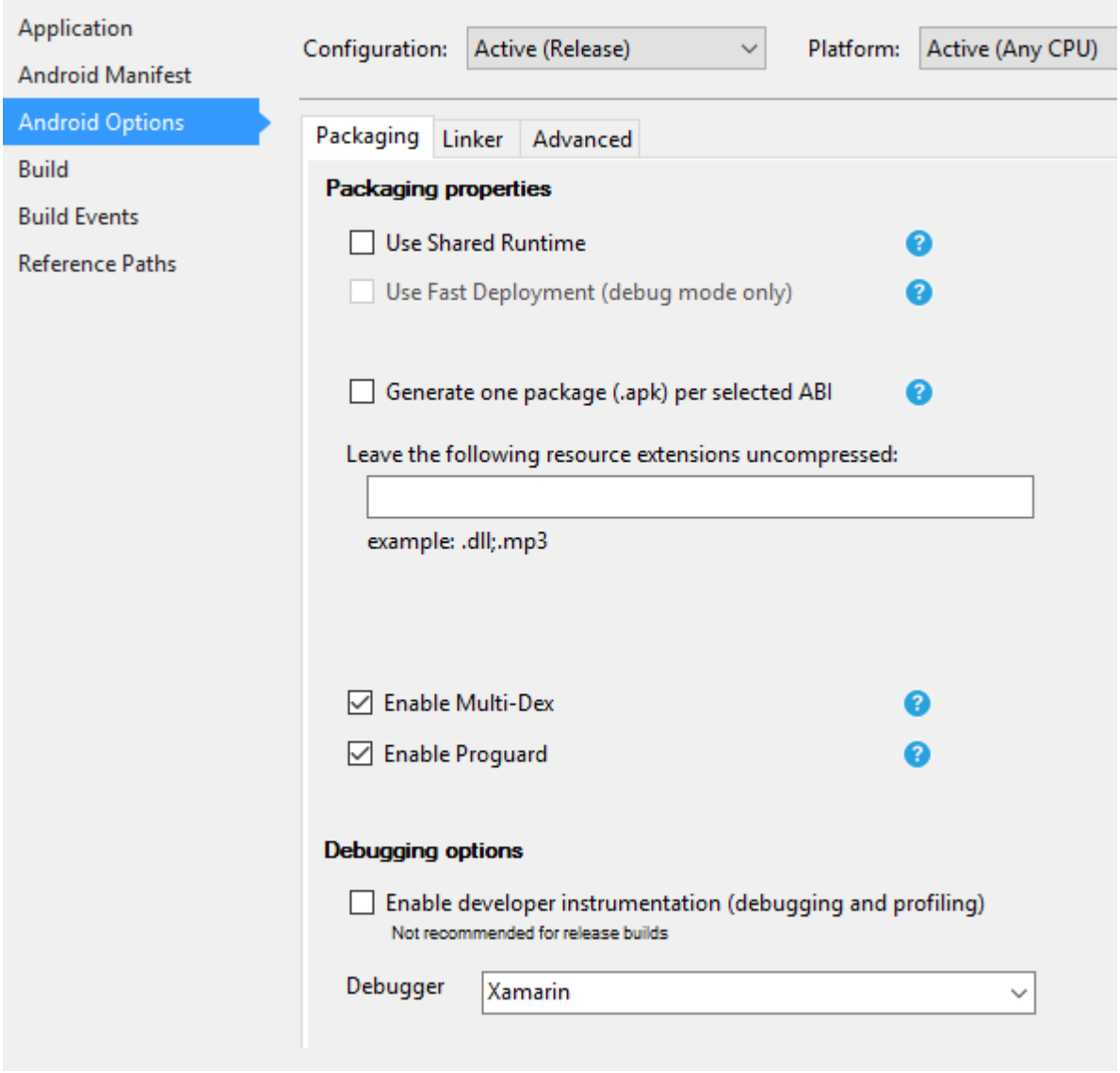
Xamarin.Android APKProGuard

ProGuardAPKJava。 ProGuardAPK。

ProGuardXamarin.AndroidAPKJava。 ProGuardJava。 .NETDotfuscator。

Xamarin.AndroidProGuard

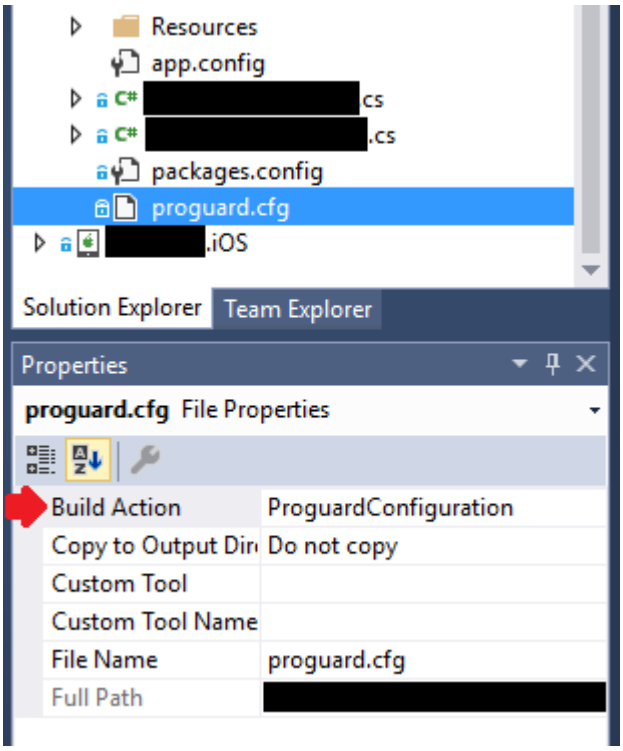
Xamarin.AndroidProGuard - > Android - > - >ProGuard



ProGuard。

Xamarin.AndroidProGuard`proguard_project_primary.cfg proguard_project_references.cfg proguard_xamarin.cfgobj/Debug/proguardobj/Release/proguard`。 ProGuardXamarin。

ProGuard/`proguard.cfg` .cfgBuild ActionProguardConfiguration



ProGuard`-dontwarn -dontwarn -keep class` ◦

20174Android SDKProGuardJava 1.8◦

```
Error
Can't read [C:\Program Files (x86)\Reference
Assemblies\Microsoft\Framework\MonoAndroid\v7.0\mono.android.jar]
(Can't process class [android/app/ActivityTracker.class]  (Unsupported class version number
[52.0] (maximum 51.0, Java 1.7))) [CREATEMULTIDEXMAINDEXCLASSLIST]
```

◦

ProGuard .zip`android-sdk\tools\proguard\` ◦ ProGuard◦

ProGuardXamarin.Android◦

ProGuardLinker“”

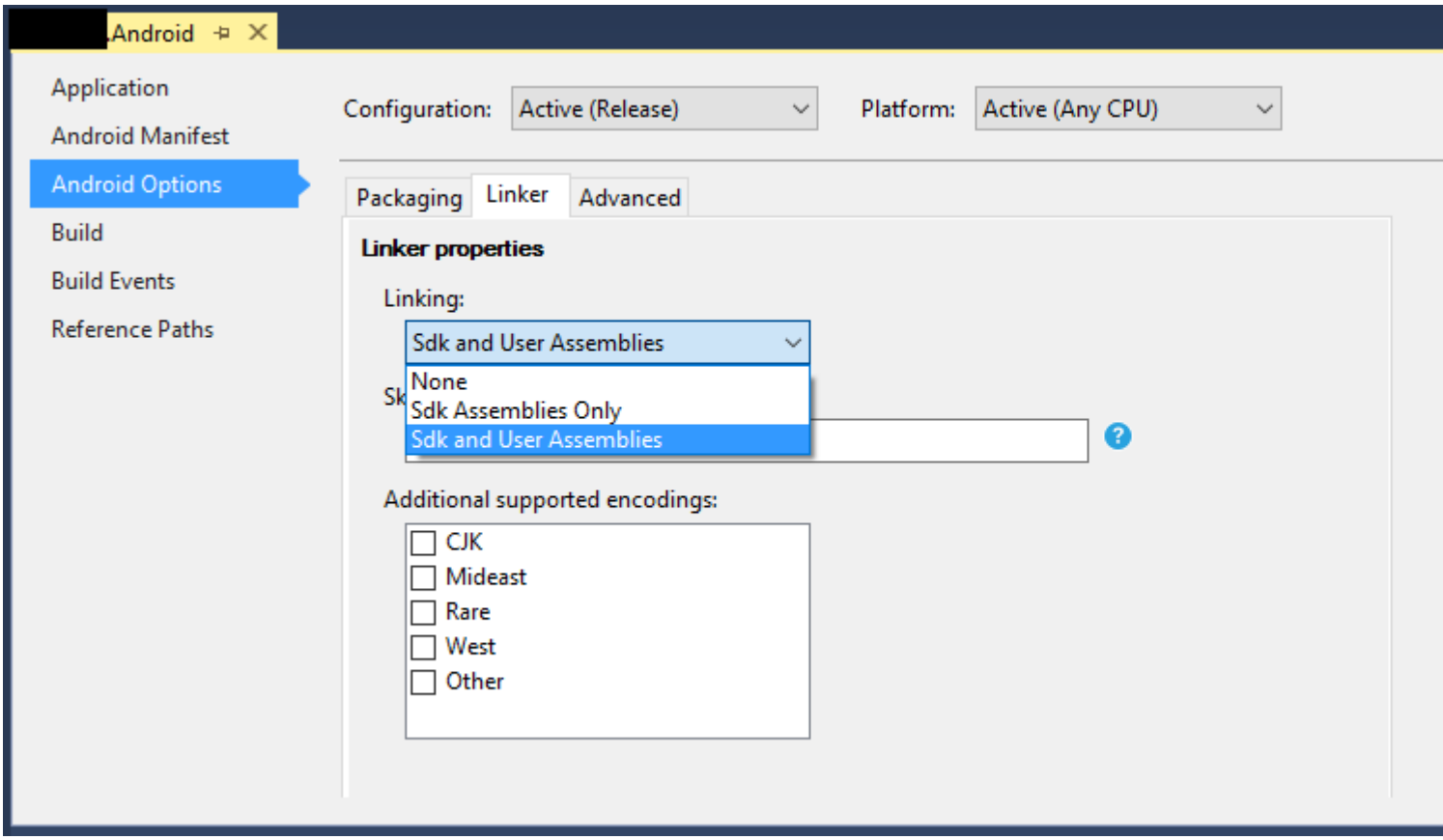
Debug◦

◦ MultiDexProGuardLinker◦

ProGuardLinker◦

Xamarin.Linker

Xamarin.Linker**.NETJava** ◦ - > Android - >



。

Sdk Xamarin.LinkerXamarin。 。

Sdk Xamarin.LinkerXamarinPCLXamarinNuGet。

SdkXamarin.Linker。

Xamarin.Linker3

1. “”“Sdk”;
2. ;
3. “”。

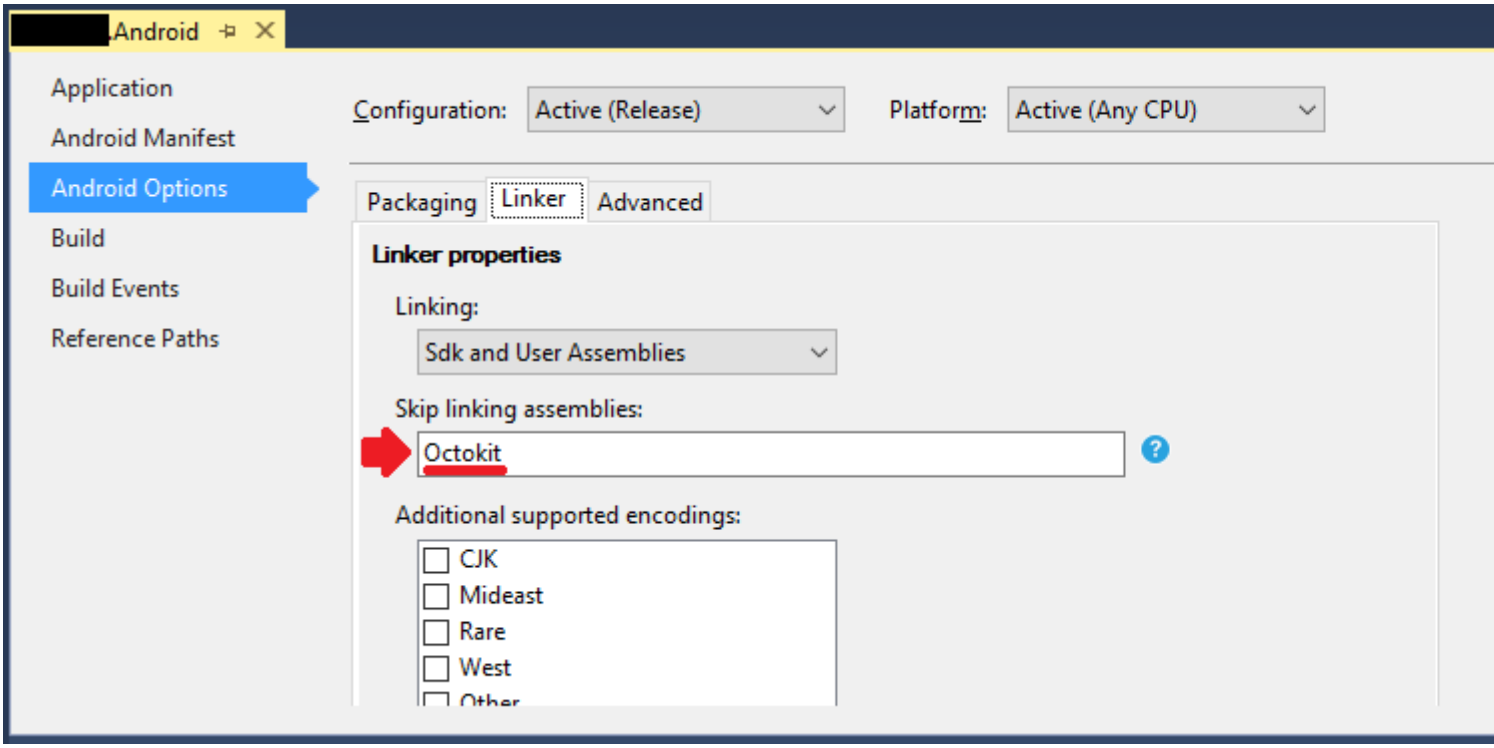
2.

Xamarin.LinkerNuGet Octokit Internet

```
[0:] ERROR
[0:] SOURCE: mscorlib
[0:] MESSAGE: Object reference not set to an instance of an object.
[0:] STACK TRACE:   at Octokit.PocoJsonSerializerStrategy.DeserializeObject (System.Object
value, System.Type type) [0x003d8] in D:\repos\octokit.net\Octokit\SimpleJson.cs:1472
  at Octokit.Internal.SimpleJsonSerializer+GitHubSerializerStrategy.DeserializeObject
(System.Object value, System.Type type) [0x001c3] in
D:\repos\octokit.net\Octokit\Http\SimpleJsonSerializer.cs:165
  at Octokit.SimpleJson.DeserializeObject (System.String json, System.Type type,
Octokit.IJsonSerializerStrategy jsonSerializerStrategy) [0x00007] in
D:\repos\octokit.net\Octokit\SimpleJson.cs:583
```

```
  at Octokit.SimpleJson.DeserializeObject[T] (System.String json,
Octokit.IJsonSerializerStrategy jsonSerializerStrategy) [0x00000] in
D:\repos\octokit.net\Octokit\SimpleJson.cs:595
  at Octokit.Internal.SimpleJsonSerializer.Deserialize[T] (System.String json) [0x00000] in
D:\repos\octokit.net\Octokit\Http\SimpleJsonSerializer.cs:21
  at Octokit.Internal.JsonHttpPipeline.DeserializeResponse[T] (Octokit.IResponse response)
[0x000a7] in D:\repos\octokit.net\Octokit\Http\JsonHttpPipeline.cs:62
  at Octokit.Connection+<Run>d__54`1[T].MoveNext () [0x0009c] in
D:\repos\octokit.net\Octokit\Http\Connection.cs:574
--- End of stack trace from previous location where exception was thrown ---
```

Skip links assemblies - > Properties - > Android Options - > Linker



。

3.Preserve

Xamarin.Linker。

“”。

PreserveAttribute.cs

PreserveAttribute.cs

```
namespace My_App_Core.Models
{
    public sealed class PreserveAttribute : System.Attribute
    {
        public bool AllMembers;
        public bool Conditional;
    }
}
```

Preserve

Country.cs

```
using System;
using System.Collections.Generic;

namespace My_App_Core.Models
{
    [Preserve(AllMembers = true)]
    public class Country
    {
        public String name { get; set; }
        public String ISOcode { get; set; }

        [Preserve(AllMembers = true)]
        public Country(String name, String ISOCode)
        {
            this.name = name;
            this.ISOCode = ISOCode;
        }
    }
}
```

。

ProGuard

ProGuard**Java**。。

ProGuard。AndroidVisual StudioProGuard。

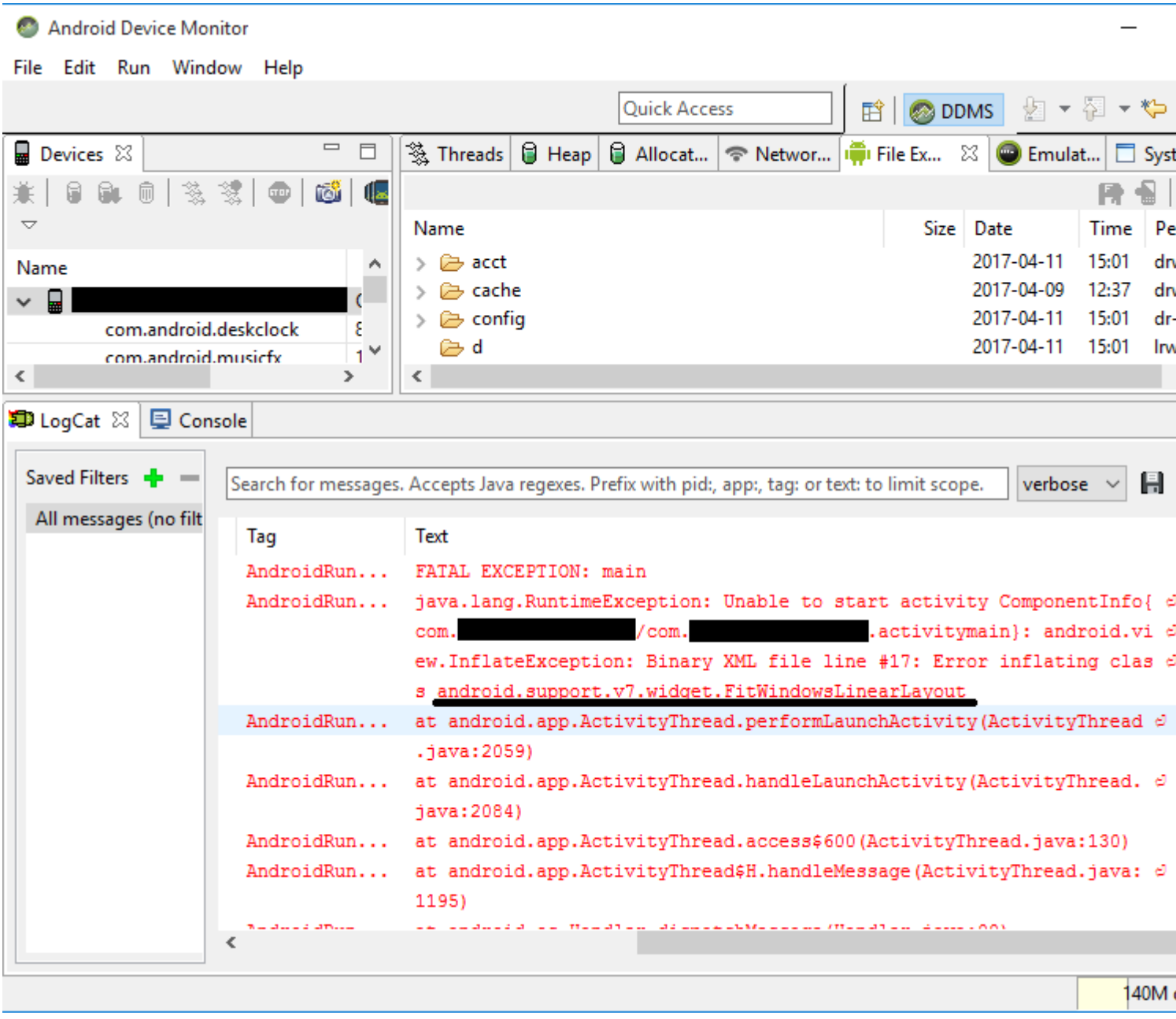
ProGuardAXMLAndroid.Support.V7.Widget.FitWindowsLinearLayout
Android.Support.Design.Widget.AppBarLayout。JavaClassNotFoundException

layout_activitymain.axml

```
<?xml version="1.0" encoding="utf-8"?>
<android.support.v4.widget.DrawerLayout
    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:id="@+id/activitymain_drawerlayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:fitsSystemWindows="true" <!-- ### HERE ### -->
    tools:openDrawer="start">
    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:fitsSystemWindows="true">
        <!-- ### HERE ## -->
        <android.support.design.widget.AppBarLayout
            android:id="@+id/activitymain_appbarlayout"
```

```
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:theme="@style/AppTheme.AppBarOverlay">
...
```

SetContentViewLogCat



ProGuard

```
-keep public class android.support.v7.widget.FitWindowsLinearLayout
-keep public class android.support.design.widget.AppBarLayout
```

。

ProGuard

ProGuard。。

PicassoProGuard`okio.Okio: can't find referenced class (...)can't write resource [META-INF/MANIFEST.MF] (Duplicate zip entry [okhttp.jar:META-INF/MANIFEST.MF]) (...)`。

Xamarin.Android APK https://riptutorial.com/zh-TW/xamarin-android/topic/9601/xamarin-android-apk

11:

Examples

Toast

`MakeText()` Toast。 `Context` Toast。 Toast。 `Show()` Toast

```
Context context = Application.Context;
string text = "Hello toast!";
ToastLength duration = ToastLength.Short;

var toast = Toast.MakeText(context, text, duration);
toast.Show();
```

Toast。 。 。 。

Toast

```
Toast.MakeText(Application.Context, "Hello toast!", ToastLength.Short).Show();
```

Android 。

ColorMatrixColorFilter

```
Toast t = Toast.MakeText(context, message, duration);
Color c = */your color/*;
ColorMatrixColorFilter CM = new ColorMatrixColorFilter(new float[]
    {
        0,0,0,0,c.R,
        0,0,0,0,c.G,
        0,0,0,0,c.B,
        0,0,0,1,0
    });
t.View.Background.SetColorFilter(CM);
t.Show();
```

```
if ((((float)(c.R) + (float)(c.G) + (float)(c.B)) / 3) >= 128)
    t.View.FindViewById<TextView>(Android.Resource.Id.Message).SetTextColor(Color.Black);
else
//text color is white by default
```

SetGravity。

```
//Toast at bottom left corner of screen
Toast t = Toast.MakeText(context, message, duration);
t.SetGravity(GravityFlags.Bottom | GravityFlags.Left, 0, 0);
t.Show();

//Toast at a custom position on screen
```

```
Toast t = Toast.MakeText(context, message, duration);
t.SetGravity(GravityFlags.Top | GravityFlags.Left, x, y);
t.Show();
```

https://riptutorial.com/zh-TW/xamarin-android/topic/3550/

12:

Examples

Xamarin.Android Bindings GeneratorJava。 `remove-node` XMLmetadata.xml

```
<remove-node path="/api/package[@name='{package_name}']/class[@name='{name}']" />
```

Java

java`View.IOnClickListener`callbacks`Java.Lang.ObjectJava.Lang.Throwable`。

'MyListener'Android.Runtime.IJavaObjectJava.Lang.Object。。

。

```
class MyListener : View.IOnClickListener
{
    public IntPtr Handle { get; }

    public void Dispose()
    {
    }


    public void OnClick(View v)
    {
        // ...
    }
}
```

```
class MyListener :
    Java.Lang.Object, // this is the important part
    View.IOnClickListener
{
    public void OnClick(View v)
    {
        // ...
    }
}
```

CJava。

C“I”Java。 Java`SomeInterfaceISomeInterface`。

JavaC。 Java gettersetter。 Java

```
public int getX() { return someInt; }

public int setX(int someInt) { this.someInt = someInt; }
```

```
public int X { get; set; }
```

https://riptutorial.com/zh-TW/xamarin-android/topic/771/

13: ListView

Examples

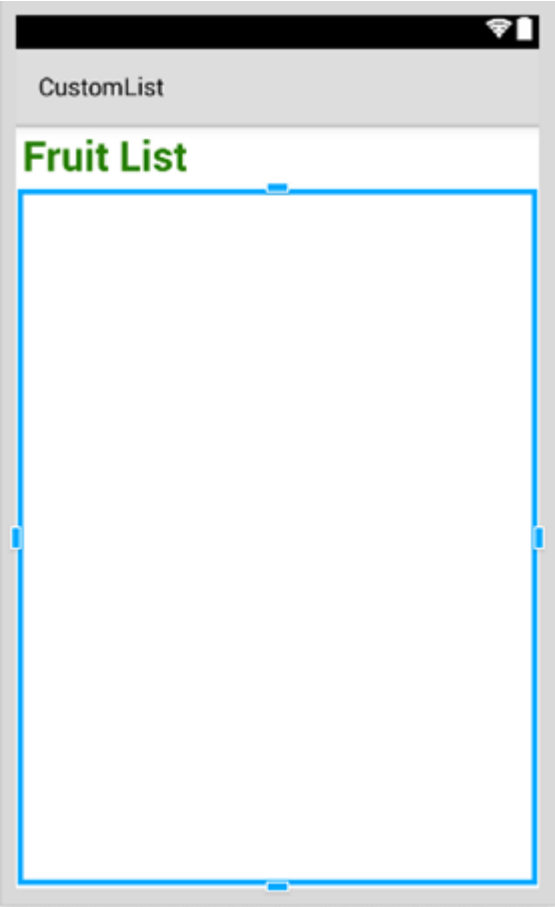
◦

customrow.axml

```
    <?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:padding="8dp">
    <ImageView
        android:id="@+id/Image"
        android:layout_width="80dp"
        android:layout_height="80dp"
        android:layout_alignParentLeft="true"
        android:layout_marginRight="8dp"
        android:src="@drawable/icon" />
    <TextView
        android:id="@+id/Text1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignTop="@id/Image"
        android:layout_toRightOf="@id/Image"
        android:layout_marginTop="5dip"
        android:text="This is Line1"
        android:textSize="20dip"
        android:textStyle="bold" />
    <TextView
        android:id="@+id/Text2"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/Text1"
        android:layout_marginTop="1dip"
        android:text="This is line2"
```

```
        android:textSize="15dip"
        android:layout_toRightOf="@id/Image" />
</RelativeLayout>
```

main.axml。



.....

Data.cs

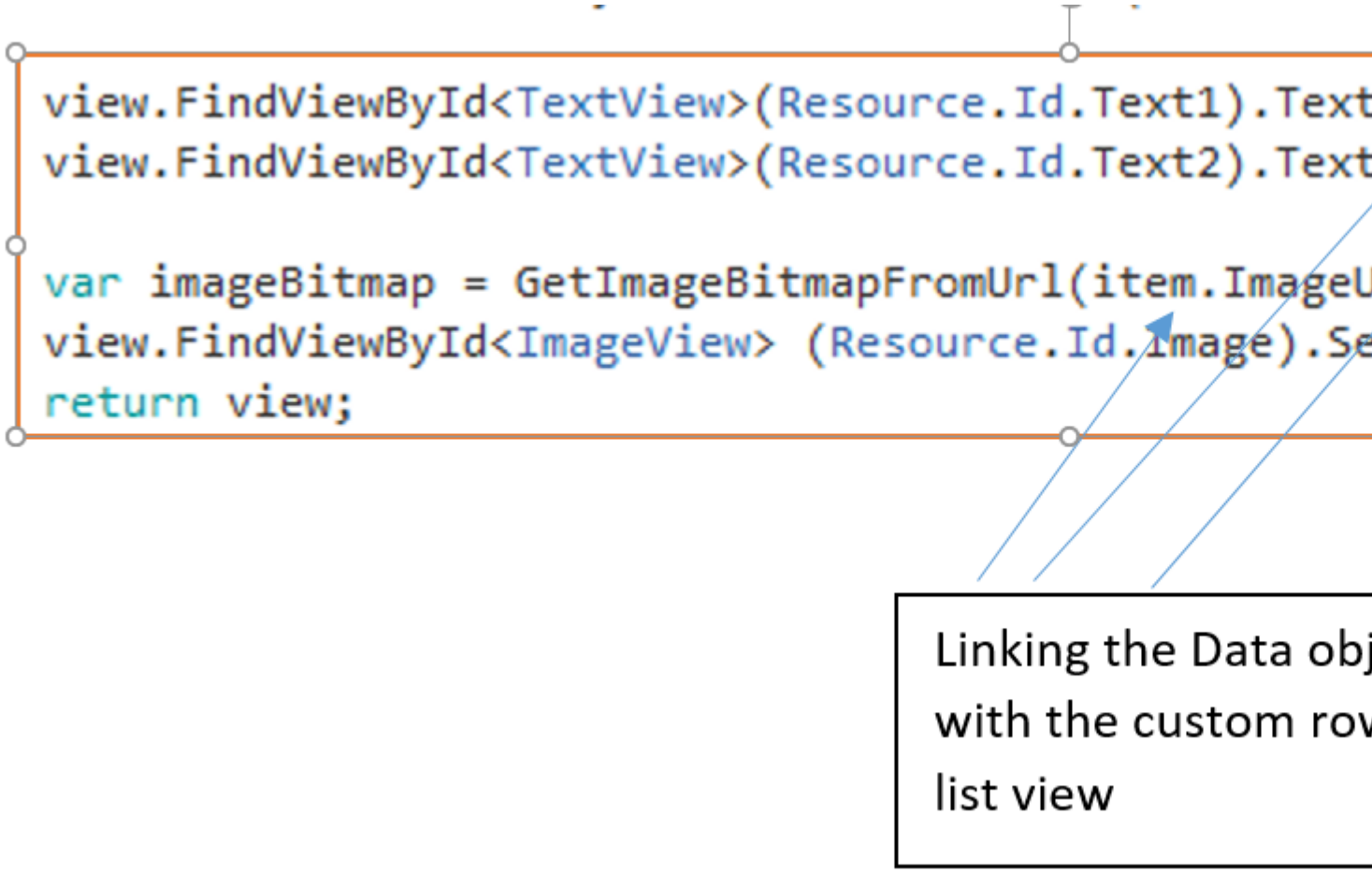
```
public class Data
{
    public string Heading;
    public string SubHeading;
    public string ImageURI;

    public Data ()
    {
        Heading = "";
        SubHeading = "";
        ImageURI = "";
    }
}
```

DataAdapter.csAdapters

```
public class DataAdapter : BaseAdapter<Data> {

    List<Data> items;
```

```
    Activity context;
    public DataAdapter(Activity context, List<Data> items)
        : base()
    {
        this.context = context;
        this.items = items;
    }
    public override long GetItemId(int position)
    {
        return position;
    }
    public override Data this[int position]
    {
        get { return items[position]; }
    }
    public override int Count
    {
        get { return items.Count; }
    }
    public override View GetView(int position, View convertView, ViewGroup parent)
    {
        var item = items[position];
        View view = convertView;
        if (view == null) // no view to re-use, create new
            view = context.LayoutInflater.Inflate(Resource.Layout.CustomRow, null);

        view.FindViewById<TextView>(Resource.Id.Text1).Text = item.Heading;
        view.FindViewById<TextView>(Resource.Id.Text2).Text = item.SubHeading;

        var imageBitmap = GetImageBitmapFromUrl(item.ImageURI);
        view.FindViewById<ImageView> (Resource.Id.Image).SetImageBitmap (imageBitmap);
        return view;
    }

    private Bitmap GetImageBitmapFromUrl(string url)
    {
        Bitmap imageBitmap = null;
        if(!(url=="null"))
            using (var webClient = new WebClient())
            {
                var imageBytes = webClient.DownloadData(url);
                if (imageBytes != null && imageBytes.Length > 0)
                {
                    imageBitmap = BitmapFactory.DecodeByteArray(imageBytes, 0,
imageBytes.Length);
                }
            }

        return imageBitmap;
    }

}
```

GetView。



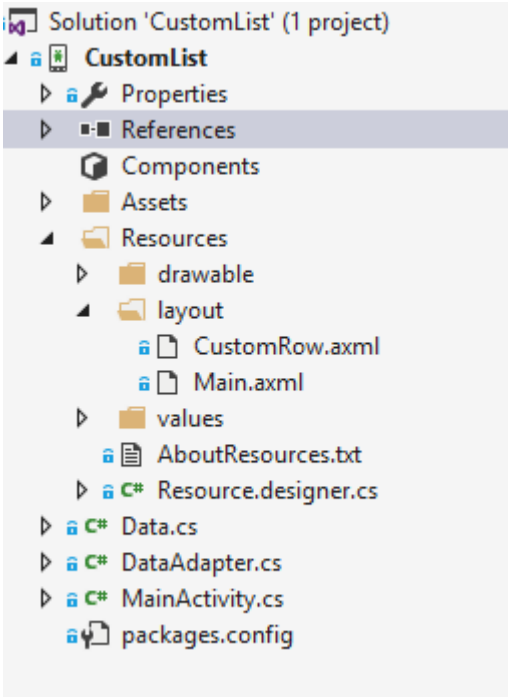
GetImageBitmapFromUrldataadapter。

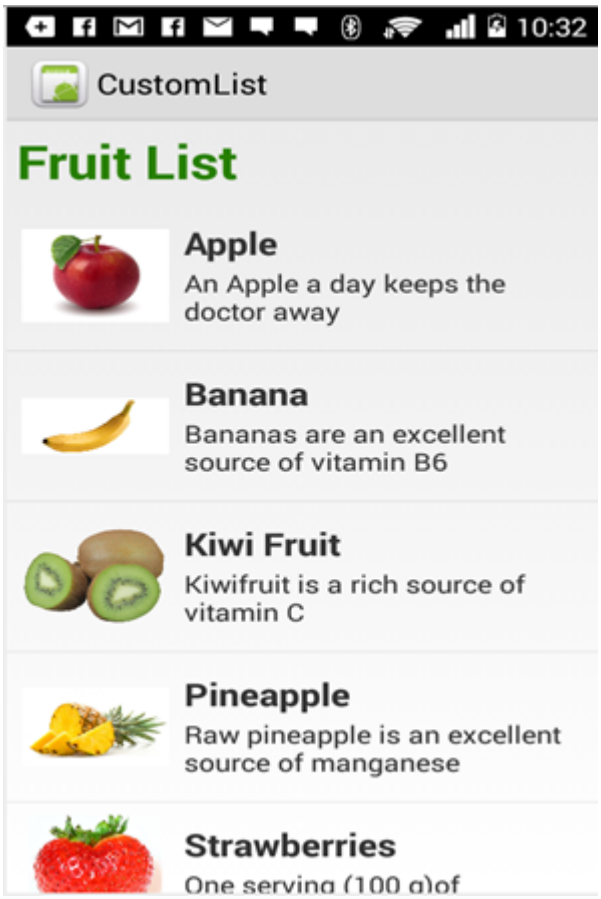
MainActivity.cs

```
public class MainActivity : Activity
{

    ListView listView;

    protected override void OnCreate (Bundle bundle)
    {
        base.OnCreate (bundle);

        // Set our view from the "main" layout resource
        SetContentView (Resource.Layout.Main);
        listView = FindViewById<ListView>(Resource.Id.List);

        List<Data> myList = new List<Data> ();

        Data obj = new Data ();
        obj.Heading = "Apple";
        obj.SubHeading = "An Apple a day keeps the doctor away";
        obj.ImageURI =
"http://www.thestar.com/content/dam/thestar/opinion/editorials/star_s_view_/2011/10/12/an_apple_a_day_r



        myList.Add (obj);

        Data obj1 = new Data();
        obj1.Heading = "Banana";
```

```
        obj1.SubHeading = "Bananas are an excellent source of vitamin B6 ";
        obj1.ImageURI =
"http://www.bbcgoodfood.com/sites/bbcgoodfood.com/files/glossary/banana-crop.jpg";

        myList.Add(obj1);

        Data obj2 = new Data();
        obj2.Heading = "Kiwi Fruit";
        obj2.SubHeading = "Kiwifruit is a rich source of vitamin C";
        obj2.ImageURI = "http://www.wiffens.com/wp-content/uploads/kiwi.png";

        myList.Add(obj2);

        Data obj3 = new Data();
        obj3.Heading = "Pineapple";
        obj3.SubHeading = "Raw pineapple is an excellent source of manganese";
        obj3.ImageURI =
"http://www.medicalnewstoday.com/images/articles/276/276903/pineapple.jpg";

        myList.Add(obj3);

        Data obj4 = new Data();
        obj4.Heading = "Strawberries";
        obj4.SubHeading = "One serving (100 g)of strawberries contains approximately 33
kilocalories";
        obj4.ImageURI = "https://ecs3.tokopedia.net/newimg/product-
1/2014/8/18/5088/5088_8dac78de-2694-11e4-8c99-6be54908a8c2.jpg";

        myList.Add (obj4);
        listView.Adapter = new DataAdapter(this,myList);

    }
```

。





ListView https://riptutorial.com/zh-TW/xamarin-android/topic/6406/listview

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