Android Tab Layout with Swipeable Views

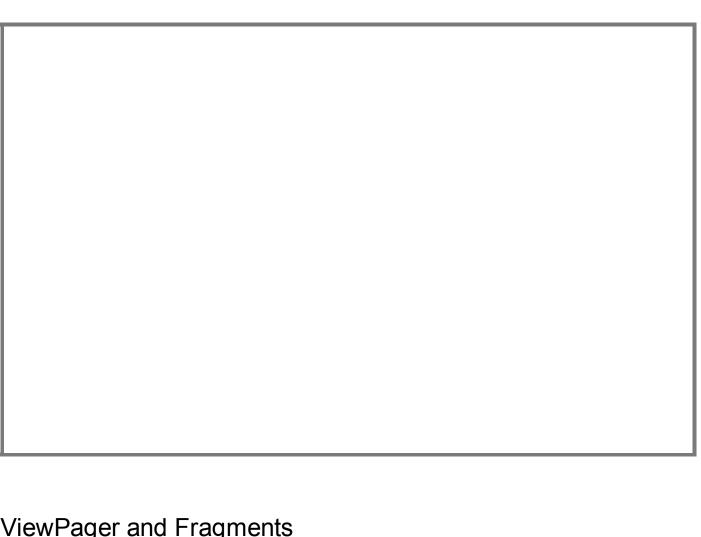


My previous article explains about Android Tab Layout and it got very good ranking in search engines. But unfortunately TabHost is deprecated by android in favor of fragments. So it is suggested that use fragment to achieve tab layout.

This article shows you how to create tab layout using fragments and viewpager. Also you can swipe between tab view as it is the functionality of viewpager which is not possible when using TabHost.

DOWNLOAD CODE

VIDEO DEMO

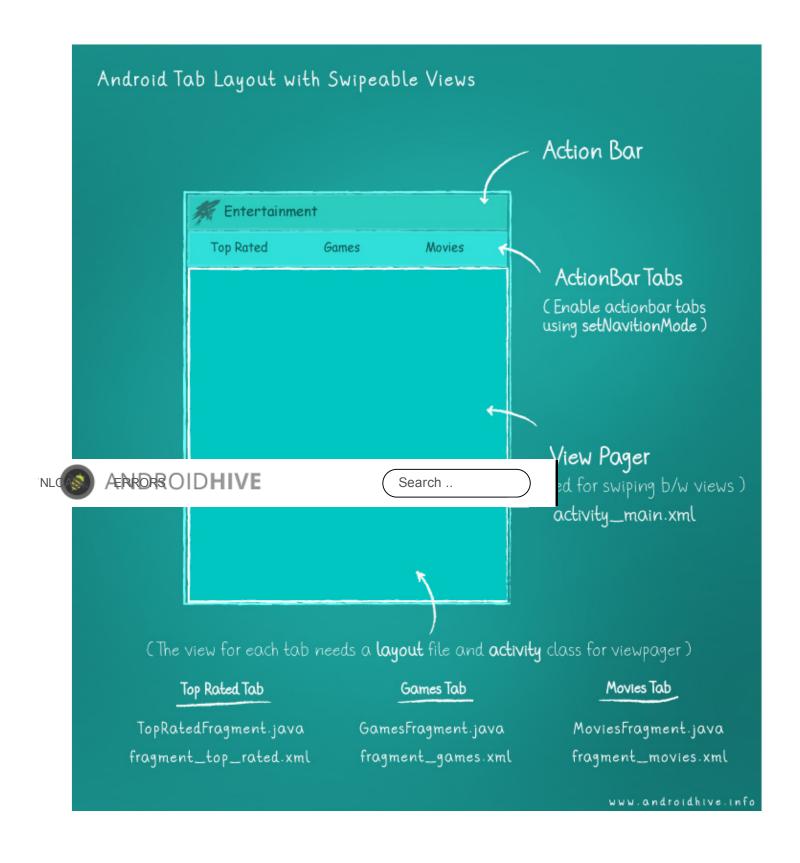


ViewPager and Fragments

Before getting into this tutorial it is suggested to have knowledge on Fragments and ViewPager as these two are main concepts used here. Unfortunately I haven't covered about fragements and viewpager on androidhive (2)

Layout Overview

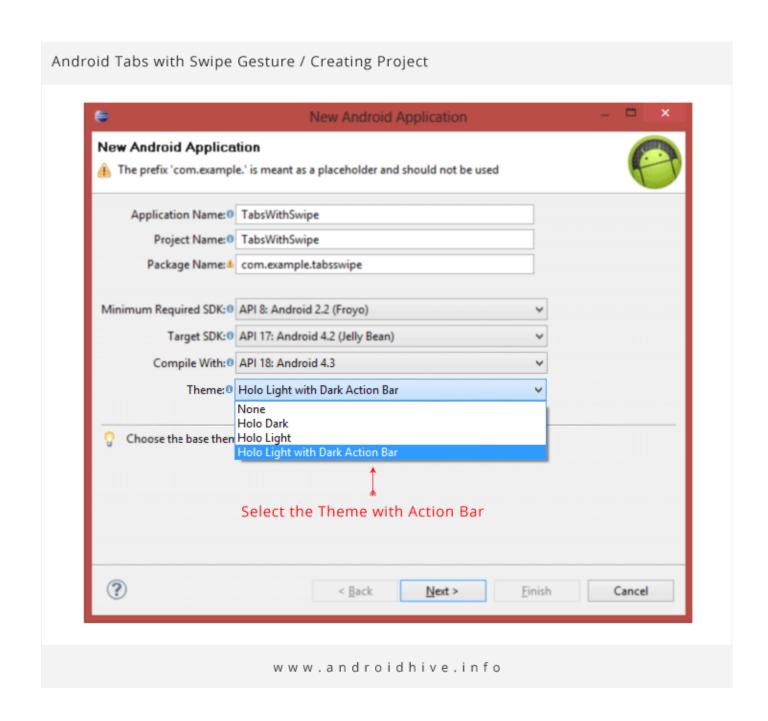
Checkout the following pic which explains the complete overview of layout architecture. Basically we are using ViewPager as main layout and for individual pager views we use Fragments. The tabs are part of Action Bar.



Creating new Project

Even though you are not familiar with ViewPager or Fragments, don't worry. You will get an idea about what those are and how to use them once you are done through this article. So let's start by creating a new project.

1. Create a new project in Eclipse from $File \Rightarrow New \Rightarrow Android \Rightarrow Application Project.$ While creating the project select the app theme which has Action Bar as shown in the below image.



2. As we are going to use Fragments, **extend** your main activity from FragmentActivity. Also **implement** this class from ActionBar.TabListener as we are adding Tabs too.

3. Open main activity layout file and add ViewPager element. (My layout file for main activity is activity_main.xml)

```
activity_main.xml

<android.support.v4.view.ViewPager xmlns:android="http://schemas.android.com/apk
    android:id="@+id/pager"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
</android.support.v4.view.ViewPager>
```

- **4**. I normally prefer to create a separate package for adapter classes just to separate them from activity classes. So create a new package named your_package_name.adapter. I named my new package as **info.androidhive.tabsswipe.adapter**
- **5**. I am creating a FragmentPagerAdapter class to provide views to tab fragments. Create a class called **TabsPagerAdapter.java** under adapter package. This adapter provides fragment views to tabs which we are going to create them later in this tutorial.

```
TabsPagerAdapter.java
package info.androidhive.tabsswipe.adapter;
import info.androidhive.tabsswipe.GamesFragment;
import info.androidhive.tabsswipe.MoviesFragment;
import info.androidhive.tabsswipe.TopRatedFragment;
import android.support.v4.app.Fragment;
import android.support.v4.app.FragmentManager;
import android.support.v4.app.FragmentPagerAdapter;
public class TabsPagerAdapter extends FragmentPagerAdapter {
    public TabsPagerAdapter(FragmentManager fm) {
        super(fm);
    }
    @Override
    public Fragment getItem(int index) {
        switch (index) {
        case 0:
            // Top Rated fragment activity
            return new TopRatedFragment();
        case 1:
            // Games fragment activity
            return new GamesFragment();
        case 2:
            // Movies fragment activity
            return new MoviesFragment();
        }
        return null;
    }
    @Override
    public int getCount() {
```

```
// get item count - equal to number of tabs
    return 3;
}
```

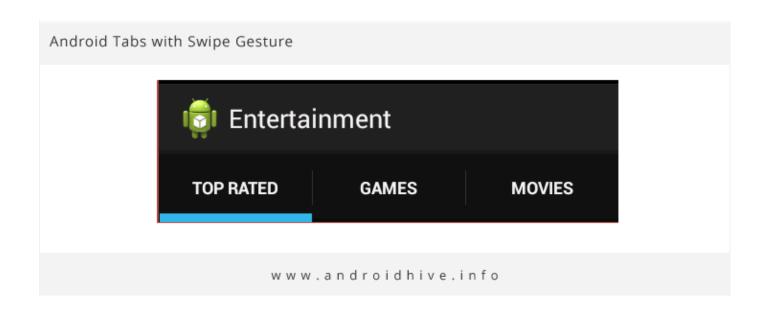
Adding Tabs to Action Bar

6. In order to display tabs we don't have to use any other UI element like **TabHost**. Action bar has the inbuilt capability of adding tabs. All we have to do is enable it using **setNavigationMode(ActionBar.NAVIGATION_MODE_TABS)** method. Open your **MainActivity.java** do the following.

Here I am adding three tabs **Top Rated**, **Games**, **Movies** to action bar. So I just stored all the tab names in a String array and added them to action bar using a for loop.

```
MainActivity.java
public class MainActivity extends FragmentActivity implements
        ActionBar.TabListener {
    private ViewPager viewPager;
    private TabsPagerAdapter mAdapter;
    private ActionBar actionBar;
    // Tab titles
    private String[] tabs = { "Top Rated", "Games", "Movies" };
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
        // Initilization
        viewPager = (ViewPager) findViewById(R.id.pager);
        actionBar = getActionBar();
        mAdapter = new TabsPagerAdapter(getSupportFragmentManager());
        viewPager.setAdapter(mAdapter);
        actionBar.setHomeButtonEnabled(false);
        actionBar.setNavigationMode(ActionBar.NAVIGATION MODE TABS);
        // Adding Tabs
        for (String tab_name : tabs) {
            actionBar.addTab(actionBar.newTab().setText(tab_name)
                    .setTabListener(this));
        }
```

If you run the project, you can see the tabs displaying under action bar.



Adding Views for Tabs

We already returned respected fragments for tabs in the adapter class. To make it simple I am creating very simple layout for each tab and leaving it to you to build your own UI depending on your requirement. For now I just displayed a label in the view with some background color.

» First Tab View

7. The first tab I added is **Top Rated**. Create a new layout file under **src** ⇒ **res** folder named **fragment top rated.xml** and paste the following code.

```
fragment_top_rated.xml

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="#fa6a6a" >

<TextView android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    android:text="Design Top Rated Screen"
    android:textSize="20dp"
    android:layout_centerInParent="true"/>

<pre
```

8. Also create respected Fragment activity class for this view. Create a new class named **TopRatedFragment.java** under your main package.

```
TopRatedFragment.java
package info.androidhive.tabsswipe;
import info.androidhive.tabsswipe.R;
import android.os.Bundle;
import android.support.v4.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class TopRatedFragment extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
            Bundle savedInstanceState) {
        View rootView = inflater.inflate(R.layout.fragment top rated, container,
        return rootView;
    }
}
```

» Second Tab View

The second tab in the list is **Games**. Just like above create a layout file and activity file for this tab.

9. Create a new layout file under src ⇒ res folder named fragment_games.xml

```
fragment_games.xml

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

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="#ff8400" >

<TextView android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    android:text="Design Games Screen"
    android:textSize="20dp"
    android:layout_centerInParent="true"/>

</RelativeLayout>
```

10. Create a new class named **GamesFragment.java** with following code.

» Third Tab View

This third tab is **Movies**. This one need a layout file and activity class.

11. Create a layout file called **fragment_movies.xml**

```
fragment_movies.xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:orientation="vertical"
    android:background="#17df0d">

    <TextView android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="Design Movies Screen"
        android:textSize="20dp"
        android:layout_centerInParent="true"/>

</RelativeLayout>
```

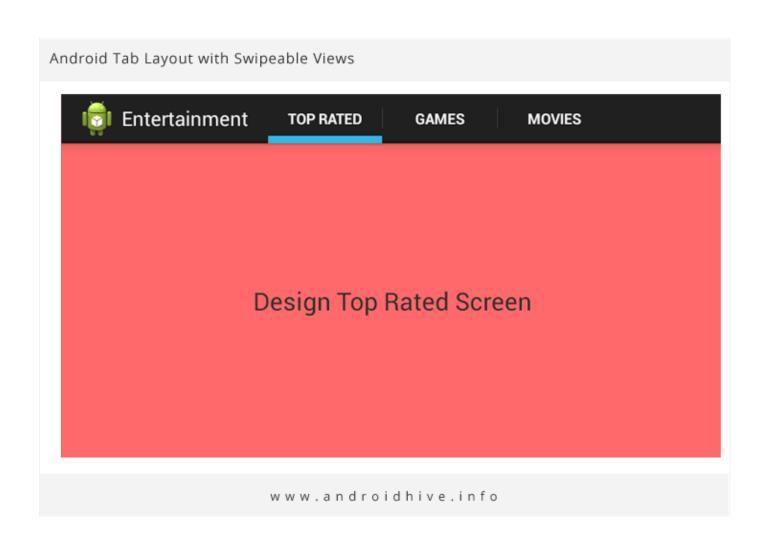
12. Also create activity class for this view named MoviesFragment.java

```
MoviesFragment.java
package info.androidhive.tabsswipe;
import info.androidhive.tabsswipe.R;
import android.os.Bundle;
import android.support.v4.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
public class MoviesFragment extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
            Bundle savedInstanceState) {
        View rootView = inflater.inflate(R.layout.fragment_movies, container, fa
        return rootView;
    }
}
```

Run the project and check whether the views for tabs are added or not.



And this is how it looks in landscape mode



Tab Change Listener

If you run the project you can see the swiping views working, but if you select a tab, view won't change automatically. This is because ViewPager didn't know about the tab change event. We have to manually change the view using Tab change listener.

13. In your MainActivity.java class add following code.

```
@Override
   public void onTabReselected(Tab tab, FragmentTransaction ft) {
   }

@Override
   public void onTabSelected(Tab tab, FragmentTransaction ft) {
        // on tab selected
        // show respected fragment view
        viewPager.setCurrentItem(tab.getPosition());
}

@Override
   public void onTabUnselected(Tab tab, FragmentTransaction ft) {
```

View Change Listener

14. As well if you swipe the view, you can't see respected tab selected. Here also using ViewPager **setOnPageChangeListener()** we have to select the respected tab manually.

```
/**
 * on swiping the viewpager make respective tab selected
 * */
viewPager.setOnPageChangeListener(new ViewPager.OnPageChangeListener() {
    @Override
    public void onPageSelected(int position) {
        // on changing the page
        // make respected tab selected
        actionBar.setSelectedNavigationItem(position);
    }
    @Override
    public void onPageScrolled(int arg0, float arg1, int arg2) {
    }
    @Override
    public void onPageScrollStateChanged(int arg0) {
    }
});
```

After adding these two listeners, if you run the project you can see everything working good.

Complete Code

Below is the complete code for MainActivity.java class

```
MainActivity.java
package info.androidhive.tabsswipe;

import info.androidhive.tabsswipe.adapter.TabsPagerAdapter;
import info.androidhive.tabsswipe.R;
import android.app.ActionBar;
import android.app.ActionBar.Tab;
import android.app.FragmentTransaction;
import android.os.Bundle;
import android.support.v4.app.FragmentActivity;
import android.support.v4.view.ViewPager;
import android.view.Menu;
```

```
public class MainActivity extends FragmentActivity implements
        ActionBar.TabListener {
    private ViewPager viewPager;
    private TabsPagerAdapter mAdapter;
    private ActionBar actionBar;
    // Tab titles
    private String[] tabs = { "Top Rated", "Games", "Movies" };
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
        // Initilization
        viewPager = (ViewPager) findViewById(R.id.pager);
        actionBar = getActionBar();
        mAdapter = new TabsPagerAdapter(getSupportFragmentManager());
        viewPager.setAdapter(mAdapter);
        actionBar.setHomeButtonEnabled(false);
        actionBar.setNavigationMode(ActionBar.NAVIGATION_MODE_TABS);
        // Adding Tabs
        for (String tab_name : tabs) {
            actionBar.addTab(actionBar.newTab().setText(tab_name)
                    .setTabListener(this));
        }
        /**
         * on swiping the viewpager make respective tab selected
         * */
        viewPager.setOnPageChangeListener(new ViewPager.OnPageChangeListener() {
            @Override
            public void onPageSelected(int position) {
                // on changing the page
                // make respected tab selected
                actionBar.setSelectedNavigationItem(position);
            }
            @Override
            public void onPageScrolled(int arg0, float arg1, int arg2) {
            @Override
            public void onPageScrollStateChanged(int arg0) {
        });
    }
    @Override
    public void onTabReselected(Tab tab, FragmentTransaction ft) {
    @Override
    public void onTabSelected(Tab tab, FragmentTransaction ft) {
        // on tab selected
        // show respected fragment view
```

```
viewPager.setCurrentItem(tab.getPosition());
}

@Override
   public void onTabUnselected(Tab tab, FragmentTransaction ft) {
}
```

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Kevin • 5 days ago

Thank you so much for this. It was so simple, it only required a bit of learning to move all my application logic from the Activity to the Fragment.



Thasan • 5 days ago

Under the Fragment wants to make a list with json. How do I do that?

public View on Create View (Layout Inflater inflater, View Group container, Bundle saved Instance State) {

View rootView = inflater.inflate(R.layout.fragment_movies, container, false);

```
return rootView;
}
^ | V • Reply • Share >
```



Biraj Das • 5 days ago

Hi

I was able to complete this project.

I am working on an App that requires to fetch data from a web service in form of json.

i followed your previous example and did that also, till here everything is fine.

Now i want to show this data on swipe of tab. this also happens but the data is shown in a different screen and you have press back to come back to the swipe able screen.

Any suggestions



zeto · 8 days ago

When you press the slide button it doesn't do anything. What should be the code for this kind of listener?



Diwas Bhattarai · 8 days ago

My problem is after I extend fragment on some tabs than I want to use Activity which I cannot do. Because Fragment is already extended and I cannot extends Activity anymore. So what shall I do? I after extending fragment I want to use activity also.



priya • 8 days ago

Hello Sir,

Your tutorial is very helpful.

How to add icons instead of title in tabs?

I tried with seticon() but i couldn't figure out correctly.

Thanks&Regards,

Priya.



Babar • 13 days ago

Hello Ravi,

how can i add list in under one tab??

i will try this using listadapter and array adapter but its generte error, so plz give an example in which add list in under one of tab plz...



Venubv • 15 days ago

Hello Ravi,

Is there a way to add a bottom bar for each tab page and the bottom bar should be unique for each tab.

Regards,

Venu.



Vijay • 19 days ago

Hello Ravi,

First, thank u so much for a really great tutorial for noobies like me to understand. I used your code in my mini project and am now stucked at a point. Google'd a lot but still helpless so finally have to disturb you.

what i have done is-

- 1.I have implemented a webview in TopRatedFragment.
- 2.Plz tell me how to use onKeyDown with this fragments.
- 3.It should be in a way that when i press back-key it should check whetther the webview can go back or else should give a alert for exiting.

Please please help!



n4ssim • 20 days ago

The tabs work well. However, how would I be able to replace the layout from a tab with a new one, say if i click on a button? Would really help if I'd know how to get this done

```
∧ V • Reply • Share >
```



Vutka Bilai • 21 days ago

very helpful tutorial . I followed through all the tutorial . But I'm a newbie in android development , can I load listView in a fragment ACTIVITY , I mean i want to load some shared Preference data show it in a fragment view like each tab will show some data represented in a list view . can I do that in a fragment view . PLZ hepl ?



SP · 22 days ago

I have 3 activities. Now I want to tab layout to show this 3 activities when I click on a one of the 3 options from the action bar. How to do that?

```
1 ^ | V · Reply · Share >
```



MehdiB • 24 days ago

Awesome! Worked like a charm:) From now, I'm following your website:)



Blas · 24 days ago

Great tutorial!



MyName • 25 days ago

I LOVE THIS PAGE IN CAPS!



chetan · a month ago

I am very new to this so I am wondering how to add list inside of one tab? Could you give me some help?



NewBieAndroid • a month ago

how to pass value from MainActivity to Fragment? help me plsssssss



Dilip Kumar N → NewBieAndroid • a month ago

You can access the MainActivity objects from Fragment using getActivity() method



NewBieAndroid → NewBieAndroid • a month ago

i pass value from loginActivity to MainActivity but, i wanna use that value each fragment wat should i do



Millamber • a month ago

Thanks for a great tutorial, working magnificently.

I have one issue. I have a preferences activity that I use to determine which tabs will be shown which seems to work ok, but when I return to this activity, the wrong view is shown on the tab despite the adapter being updated and calling notifydatasetchanged.

Any ideas, can post code if required.

TIA

Millamber



spiralni · a month ago

```
HOW CAN IMPREMENT THE TANDISCHED FOR ORDER HER DEVICES. IT IS NOT IN THE SUPPORT PACKAGE
Reply • Share >
Hai • a month ago
Hi everyone, i'd like to add a listview on each tab. Please show me how, thanks!
1 ^ | V • Reply • Share >
       spiralni → Hai · a month ago
      Just declare it into each fragment *.xml
       1 ^ | V • Reply • Share >
Ahmet G · a month ago
Hi, could u please help me to change "indicator color" which has been set blue as default? I want to
change the tab bar indicator color to different color. Is that possible?
Samuel Tang · a month ago
Hi, May I enquire:
How do we pass data between fragments
2 A | V • Reply • Share >
Jared Amul • a month ago
How can i position the tabs at the bottom???
2 A | V • Reply • Share >
Soheil Afshari • a month ago
i have button on tab 1 how can i declare it or where should i put my codes?
Leng AK → Soheil Afshari • a month ago
       public class TopRatedFragment extends Fragment {
       @Override
       public View on Create View (Layout Inflater inflater, View Group container,
       Bundle savedInstanceState) {
       View rootView = inflater.inflate(R.layout.fragment_top_rated, container, false);
       yourButton = (Button) rootView.findViewById(R.id.button);
       return rootView:
      }
       1 A Reply • Share >
               Mahdi → Leng AK · 2 days ago
               Hi, is it possible to change pager and tab with button event? not with swipe
               i use this code but it return error and force close
                @Override
```

_ _ _ _ _ _

public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) {

final View v = inflater.inflate(R.layout.activity_checkout_method__fragment,
container, false);

pager = (ViewPager) v.findViewById(R.id.pager);

pager.setAdapter(new

ViewPagerAdapter_PlaceCartOrder(getFragmentManager()));

btn_continue = (Button) v.findViewById(R.id.button_continue);

see more

∧ | ∨ • Reply • Share >



Babar → Leng AK · 13 days ago

hi Leng AK

plz tell how to add list view in under of the tab??

i have try this i can't..i am using display list with listadapter and arrayadapter but it will generte error sp plz help me how can iadd list view under one of tab...



Leng AK → Babar • 9 days ago yes, but now i'm busy much



Babar → Leng AK • 8 days ago

thanks Leng i have do but thanks



Leng AK → Babar • 10 days ago

hi Babar please wait, I will test it first.



Babar → Leng AK • 9 days ago

Leng AK if you test it so plz tell me....



Babar → Leng AK · 10 days ago ok thanks for replying Leng



Soheil Afshari → Leng AK · a month ago Tanx its working.

Reply • Share >



Guest → Soheil Afshari • 10 days ago

Soheil Afshari: its working, but it diplay incorrect Toast



iloveyou · a month ago

Thank you. I love you

Reply • Share >



Leng AK · a month ago

Hi, Sir. I have a problem in this tutorial. When I put Toast to display text in each Fragment class, it shows incorrect Toast.

How to fix it? thx...

1 ^ | V • Reply • Share >



Cheby • a month ago

Just Perfect! Great Job



Михаил Панин • a month ago

Hi! i am sorry for criticizing your post. It was very helpful for me. But we are inflating our view EACH time when we are scrolling through a tab. Shouldn't we make any caching(smth like viewholder)?

Reply • Share >



Pablo Lunardi • 2 months ago

Please help! Why the ActionBar is showing below the tabs when I run the app??? It should appear above, like in the video. :(



RZ · 2 months ago

Hi. thank you very much. I m newbie in Android Java. First tutorial about Action Tab that I can complete and run perfectly! Congratulations for the job.

Reply • Share >



Guru Prasad • 2 months ago

Hi Sir..very thankful for this tutorial ..

1)..:- i four activitys .in each activity i have list views ..now when i am trying switch activitys by swiping its taking 2 to 3 seconds to switch the activity ..what is the reason please help me..

2)..:-in 4 activitys i have constant header like master-page example (searching in listview) now where i have to write code ..i mean A, B, C, D are my Tabs and "Z" is my main activity ...please help me ASAP..thanks in advance



Babar → Guru Prasad • 13 days ago

hi Guru Prasad

plz tell how you add list view in under of the tab??

i have try this i can't..i am using display list with listadapter and arrayadapter but it will generte error sp plz help me how can iadd list view under one of tab...



Khushwant Singh • 2 months ago Hi,

Many thanks for this article. As always, I appreciate your efforts.

I have a question on action bar/fragments using support library. I was trying to run this project using support library V4 and V7-apprompat and in fact was able to run this project on android 2.3. Since using support library can run action Bar and other new features on older versions, then should one always use support library to use action bar and other new features? Do you know of any disadvantage of using support library in terms of performance/crash? Also do you recommend using two sets of codes, one using support library (for API 8,9 and 10) and the other for API 11+?

Thanks,

Khushwant Singh



sedat • 2 months ago

Hi this tut is very helpful for me. But I am trying to combine this with footer tab.(I have 3 tabs in footer and I wanna make one tab's content like this), there is no error but while debugging it stops. When I looked debug way it stops when start this main. I deal 7-8 hours but I cannot found nothing. Can anybody help me?

∧ V • Reply • Share >



sedat → sedat • 2 months ago

my debug stops these lines:

 $action Bar. set Home Button Enabled (false); \\ action Bar. set Navigation Mode (Action Bar. NAVIGATION_MODE_TABS); \\$

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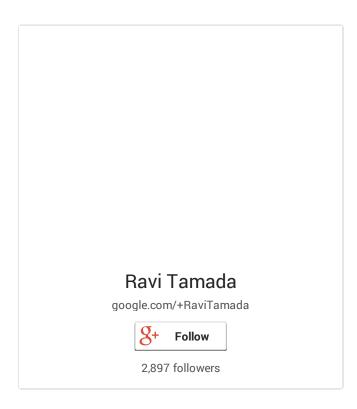
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