Занятие №8

Разработка приложений на Android

Напоминание





Agenda



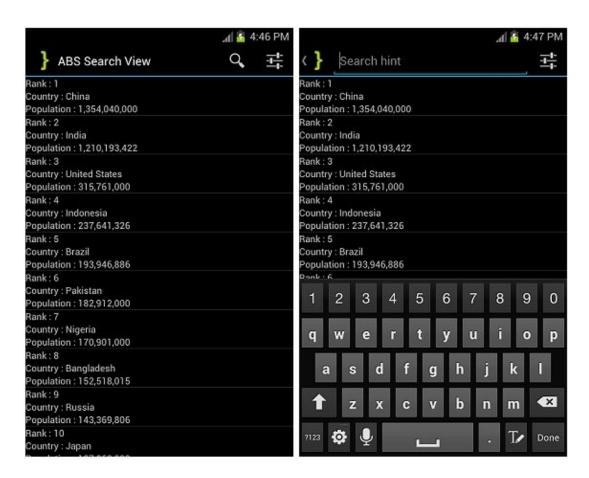
- 1. Material Design
- 2. Launch Screen
- 3. Cards
- 4. SnackBar
- 5. ActionBar
- 6. Floating Action Button
- 7. CoordinatorLayout
- 8. Tabs
- 9. Bottom Navigation Bar
- 10. Navigation Drawer

Как это было. Android 2.x





Первые шаги - ActionBarSherlock



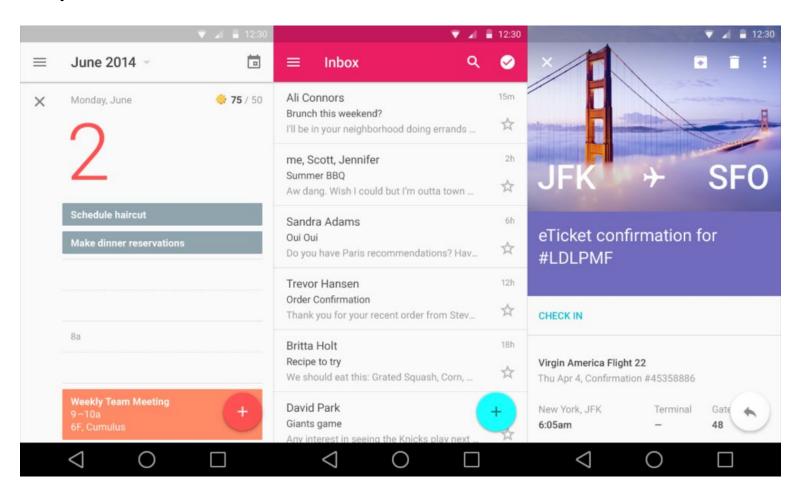


Android 4.x Holo





Современный Android





Подробно

https://material.io

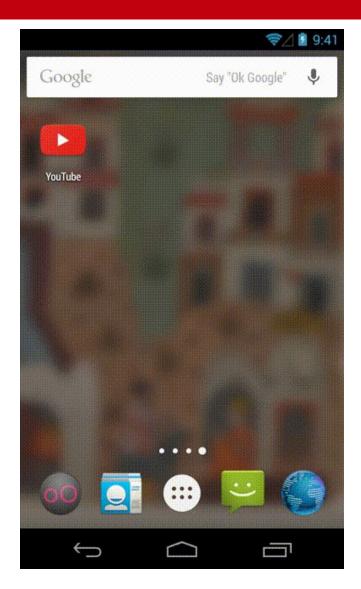


```
build.gradle

dependencies {
    ...
    compile 'com.android.support:design:25.0.+'
}
```

Launch Screen





Launch Screen

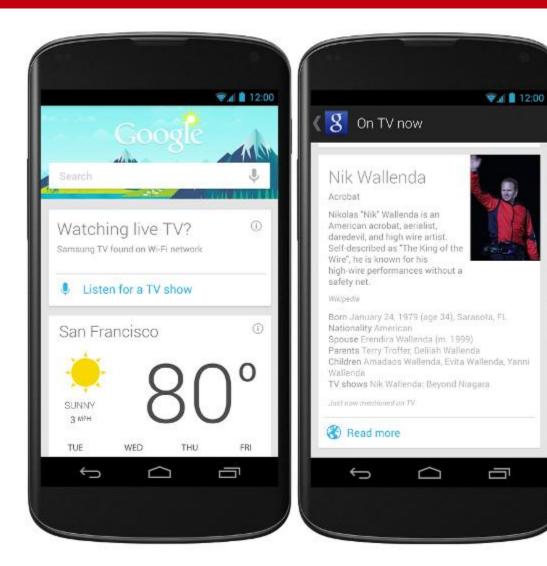


SplashActivity.java

```
public class SplashScreen extends AppCompatActivity implements
  AsyncNotesLoader.LoaderDelegate {
   @Override
   protected void onCreate(Bundle savedInstanceState) {
       super.onCreate(savedInstanceState);
       AsyncNotesLoader loader = new AsyncNotesLoader (this);
   @Override
   public void onNotesLoaded() {
       Intent intent = new Intent(this, MainActivity.class);
       startActivity(intent);
       finish();
```

Cards (CardView)





Cards (CardView)



```
build.gradle

dependencies {
    ...
    compile 'com.android.support:cardview-v7:25.0.+'
    compile 'com.android.support:recyclerview-v7:25.0.+'
    compile 'com.android.support:design:25.0.+'
}
```

Cards (CardView)



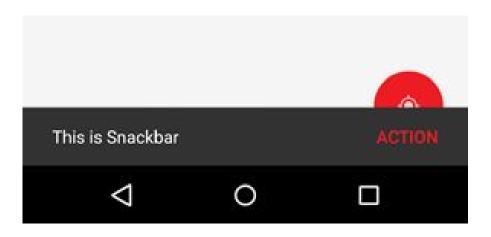
res/layout/list_item.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
   android:orientation="vertical" android:layout width="match parent"
   android:layout height="match parent">
   <android.support.v7.widget.CardView</pre>
       xmlns:card view="http://schemas.android.com/apk/res-auto"
       android:id="@+id/card view"
       android: layout gravity="center"
       android:layout width="200dp"
       android:layout height="200dp"
       card_view:cardCornerRadius="4dp">
           <TextView
               android:id="@+id/info text"
               android:layout width="match parent"
               android:layout height="match parent" />
   </android.support.v7.widget.CardView>
</LinearLayout>
```

SnackBar



- Современная замена Toast
- Интерактивный
- Дает возможность совершить действие



SnackBar



MainActivity.java

```
private void setupFab(final View rootView) {
   FloatingActionButton fab =
       (FloatingActionButton) rootView.findViewById(R.idfab);
   fab.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View view) {
           Snackbar
             .make(rootView, R.string.note added, Snackbar.LENGTH SHORT)
             .setAction(R.string.cancel add, MainActivity.this)
             .show();
   });
@Override
public void onClick(View v) {
   //cancel last action!
```



- Панель верхней части приложения
- Появилась в Android 3.0
- Обычно предоставляет доступ к наиболее частым действиям
- Теперь называется Toolbar (API 21)





res/layout/main_layout.xml

```
<RelativeLayout
   android:layout width="match parent"
   android:layout height="match parent">
   <android.support.v7.widget.Toolbar</pre>
       android:id="@+id/toolbar"
       android:layout height="wrap content"
       android:layout width="match parent"
       android:minHeight="?android:attr/actionBarSize"
       app:theme="@style/ActionBarStyle"
       />
   <FrameLayout</pre>
       android:id="@+id/main fragment container"
       android:layout below="@id/toolbar"
       android:layout width="match parent"
       android:layout height="match parent">
   </FrameLayout>
</RelativeLayout>
```



MainActivity.java

```
@Override
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);

    setContentView(R.layout.main_layout);
    Toolbar toolbar = (Toolbar)findViewById(R.id.toolbar);
    setSupportActionBar(toolbar);
    ActionBar bar = getSupportActionBar();
}
```



res/values-v21/styles.xml

```
<resources>
     <style name="AppTheme" parent="Theme.AppCompat.Light.NoActionBar">
```

res/values/styles.xml

```
<resources>
     <style name="AppTheme" parent="Theme.AppCompat.Light">
```

AndroidManifest.xml

```
<application
android:theme="@style/AppTheme"</pre>
```



res/menu/main_menu.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto">
    <item android:id="@+id/menu_sorttype"
        android:icon="@android:drawable/ic_menu_sort_by_size"
        android:title="@string/sort_menu"
        app:showAsAction="always"/>
    <item android:id="@+id/settings"
        app:showAsAction="never"
        android:title="@string/settings"/>
    </menu>
```



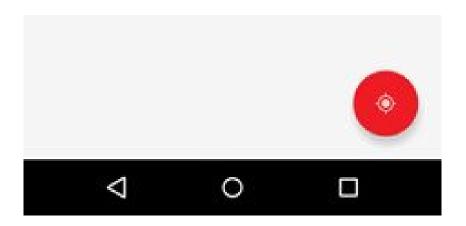
MainActivity.java

```
@Override
public void onCreateOptionsMenu(Menu menu, MenuInflater inflater) {
   super.onCreateOptionsMenu(menu, inflater);
   inflater.inflate(R.menu.main menu, menu);
   MenuItem item = menu.findItem(R.id.settings);
@Override
public boolean onOptionsItemSelected(MenuItem item) {
   boolean called = super.onOptionsItemSelected(item);
   if (!called) {
       switch (item.getItemId()) {
           case R.id.settings:
               called = true; //your code here
               break;
   return called;
```

Floating Action Button (FAB)



- Появилось в Android 5.0 (API 21)
- Предоставляет доступ к часто используемому действию



Floating Action Button (FAB)



res/layout/main_layout.xlm

```
< Relative Layout
   xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
   android:layout width="match parent"
   android:layout height="match parent">
   <android.support.design.widget.FloatingActionButton</pre>
       android:id="@+id/fab"
       android:layout width="wrap content"
       android:layout height="wrap content"
       android:layout alignParentBottom="true"
       android:layout alignParentEnd="true"
       android:layout margin="24dp"
       android:backgroundTint="@color/colorPrimary"/>
</RelativeLayout>
```

Floating Action Button (FAB)



MainActivity.xlm

```
private void setupFab(View rootView) {
   FloatingActionButton fab =
         (FloatingActionButton) rootView.findViewById(R.idfab);
   VectorDrawableCompat icon =
         VectorDrawableCompat.create(getResources(),
             R.drawable.ic add white 24px, null);
   icon.setTint(Color.WHITE);
   fab.setImageDrawable(icon);
   fab.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View view) {
           addNewNote();
   });
```





Lorem ipsum dolor sit amet,
consectetur adipiscing elit. In mollis
est vitae erat laoreet consectetur.
Mauris dui mauris, dictum vel
egestas vel, porta sed ante.
Phasellus congue viverra ipsum, in
elementum arcu ultricies nec.Morbi
tincidunt nisl lacinia, placerat nisi
eget, luctus tortor. Morbi efficitur









Основная задача - координация View

- С помощью якорей
- С помощью Behavior

Побочные возможности

- Перехват касаний
- Перехват прокрутки NestedScrollView



Использование якорей

```
<android.support.design.widget.AppBarLayout</pre>
  android:id="@+id/appBar">
  <android.support.design.widget.CollapsingToolbarLayout>
  <android.support.v7.widget.Toolbar/>
  </android.support.design.widget.CollapsingToolbarLayout>
</android.support.design.widget.AppBarLayout>
<include layout="@layout/content main" />
<android.support.design.widget.FloatingActionButton</pre>
  android:id="@+id/toolbarfab"
  android:layout width="wrap content"
  android:layout height="wrap content"
  android:layout margin="@dimen/fab margin"
  app:layout anchor="@id/appBar"
  app:layout anchorGravity="bottom|right|end"
  app:srcCompat="@android:drawable/ic popup reminder" />
```



Использование Bahavior

```
<android.support.design.widget.FloatingActionButton</pre>
   android:id="@+id/fab"
   android:layout width="wrap content"
   android:layout height="wrap content"
   android:layout gravity="bottom|end"
   android:layout margin="@dimen/fab margin"
  app:layout behavior="com.github.kirillf.materialdemo.HidingFABBehavior"
  app:srcCompat="@android:drawable/ic dialog email" />
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
   xmlns:app="http://schemas.android.com/apk/res-auto"
   android:orientation="vertical"
   android:layout width="match parent"
   android:layout height="match parent"
   app:layout behavior="@string/appbar scrolling view behavior">
```

CoordinatorLayout.Behavior



```
public static abstract class Behavior<V extends View> {
   public Behavior(Context context, AttributeSet attrs);
   public boolean onInterceptTouchEvent();
   public boolean onTouchEvent();
   public int getScrimColor();
   public float getScrimOpacity();
   public boolean onDependentViewChanged();
   public void onDependentViewRemoved();
   public boolean onStartNestedScroll();
   public void onNestedScrollAccepted();
   public void onNestedPreScroll();
   public void onNestedScroll();
   public void onStopNestedScroll();
   public boolean onNestedPreFling()
   public boolean onNestedFling();
   public void onRestoreInstanceState();
   public onSaveInstanceState();
```

Свой Behavior



```
public class FancyFrameLayoutBehavior extends
                    CoordinatorLayout.Behavior<FloatingActionButton> {
   public FancyFrameLayoutBehavior(Context c, AttributeSet a) {
   @Override
   public boolean onStartNestedScroll(CoordinatorLayout 1,
                                      FloatingActionButton c,
                                      View directTargetChild,
                                       View target, int axes, int type) {
       return true;
   @Override
   public void onNestedScroll(CoordinatorLayout 1,
                              FloatingActionButton c,
                              View t, int dxConsumed,
                              int dyConsumed, int dxUnconsumed,
                              int dyUnconsumed, int type) {
       //do your stuff
```

Стандартные Behavior



ScrollingViewBehavior



Lorem ipsum dolor sit amet,
consectetur adipiscing elit. In mollis
est vitae erat laoreet consectetur.
Mauris dui mauris, dictum vel
egestas vel, porta sed ante.
Phasellus congue viverra ipsum, in
elementum arcu ultricies nec.Morbi
tincidunt nisl lacinia, placerat nisi
eget, luctus tortor. Morbi efficitur

0





Стандартные Behavior



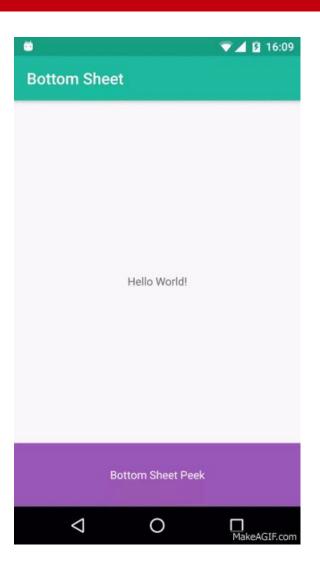
SwipeDismissBehavior



Стандартные Behavior



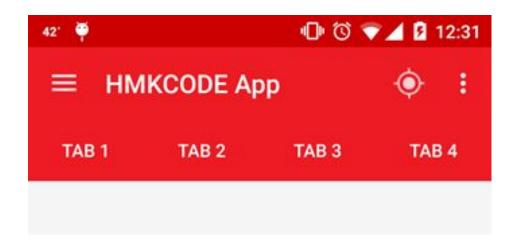
BottomSheetBehavior



TabLayout



- Появилось в SupportLibrary 23
- Позволяет осуществлять навигацию по горизонтали
- На данный момент рекомендуется заменить на BottomNavigation (если элементов от 2 до 5)



TabLayout



res/layout/main_layout.xml

```
<RelativeLayout
  android:layout width="match parent"
  android:layout height="match parent">
   <android.support.v7.widget.Toolbar/>
   <android.support.design.widget.TabLayout</pre>
       android:id="@+id/tabLayout"
       android:scrollbars="horizontal"
       android:layout below="@+id/toolbar"
       android:layout width="match parent"
       android:layout height="wrap content"
       android:background="?attr/colorPrimary"
       app:layout scrollFlags="scroll|enterAlways" />
   <FrameLayout android:id="@+id/main fragment container"/>
```

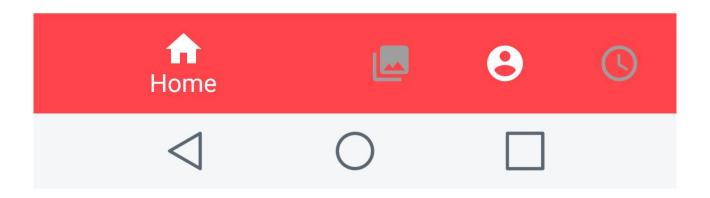
TabLayout



```
@Override
public void onCreate(Bundle savedInstanceState) {
   super.onCreate(savedInstanceState);
   setContentView(R.layout.main layout);
   TabLayout tabLayout = (TabLayout) findViewById(R.id tabLayout);
   tabLayout.setTabGravity(TabLayout GRAVITY FILL);
   tabLayout.addTab(tabLayout.newTab().setText('Tab 1"));
   tabLayout.addTab(tabLayout.newTab().setText('Tab 2"));
   tabLayout.addTab(tabLayout.newTab().setText('Tab 3"));
   tabLayout.addOnTabSelectedListener (this);
@Override
public void onTabSelected(TabLayout.Tab tab) {
```



- Появилось в SupportLibrary 25
- Позволяет осуществлять навигацию по горизонтали
- Ограничено небольшим числом секций (3-5)





```
res/layout/main_layout.xml
<RelativeLayout
   android:layout width="match parent"
   android:layout height="match parent">
   <android.support.v7.widget.Toolbar />
   <FrameLayout android:id="@+id/main fragment container" />
   <android.support.design.widget.BottomNavigationView</pre>
       android:id="@+id/bottom navigation"
       android:layout width="match parent"
       android:layout height="wrap content"
       android:layout alignParentBottom="true"
       app:itemBackground="@color/colorPrimary"
       app:itemIconTint="@android:color/white"
       app:itemTextColor="@android:color/white"
       app:menu="@menu/bottom navigation main" />
</RelativeLayout>
```



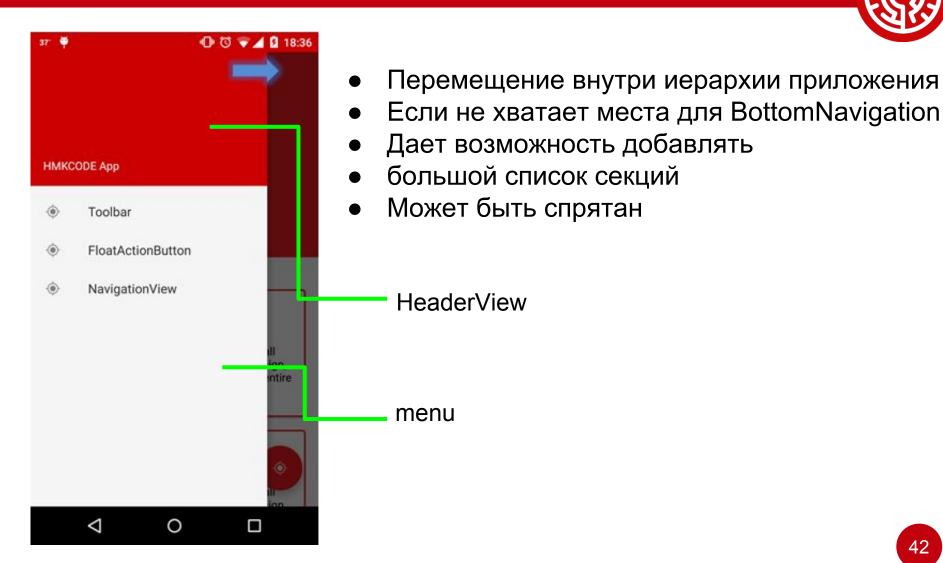
res/menu/bottom_navigation_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"</pre>
    xmlns:app="http://schemas.android.com/apk/res-auto">
  <item
       android:id="@+id/action favorites"
       android:icon="@drawable/ic add white 24px"
       android:title="@string/add card menu item"
       app:showAsAction="ifRoom" />
  <item
       android:id="@+id/action schedules"
       android:icon="@drawable/ic mode edit white 24px"
       android:title="@string/edit card menu item"
       app:showAsAction="ifRoom" />
  <item
       android:id="@+id/action music"
       android:icon="@drawable/ic settings white 24px"
       android:title="@string/settings"
       app:showAsAction="ifRoom" />
</menu>
```



```
@Override
public void onCreate(Bundle savedInstanceState) {
   super.onCreate(savedInstanceState);
   setContentView(R.layout. activity lesson list);
   BottomNavigationView bottomNavigationView = (BottomNavigationView)
           findViewById(R.id. bottom navigation);
   bottomNavigationView.setOnNavigationItemSelectedListener(
           new BottomNavigationView.OnNavigationItemSelectedListener() {
               @Override
               public boolean onNavigationItemSelected(MenuItem item) {
                   switch (item.getItemId()) {
                        case R.id.action favorites:
                        case R.id.action schedules:
                        case R.id.action music:
                   return true;
           });
```







res/layout/main_layout.xml

```
<android.support.v4.widget.DrawerLayout</pre>
   xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   android:id="@+id/drawer layout"
   android:layout width="match parent"
   android:layout height="match parent"
   android:fitsSystemWindows="true">
   <RelativeLayout>
       <android.support.v7.widget.Toolbar/>
       <FrameLayout android:id="@+id/main fragment container"/>
   </RelativeLayout>
   <android.support.design.widget.NavigationView</pre>
       android:id="@+id/navigation view"
       android:layout width="wrap content"
       android:layout height="match parent"
       app:headerLayout="@layout/navigation view header layout"
       app:menu="@menu/navigation drawer menu"
       android:layout gravity="start">
   </android.support.design.widget.NavigationView>
</android.support.v4.widget.DrawerLayout>
```



res/layout/navigation_view_header_layout.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"</pre>
             android:layout width="match parent"
             android:layout height="192dp"
             android:background="?attr/colorPrimaryDark"
             android:padding="16dp"
             android: theme="@style/ThemeOverlay.AppCompat.Dark"
             android: orientation="vertical"
             android:gravity="bottom">
   <TextView
       android:layout width="match parent"
       android:layout height="wrap content"
       android:text="@string/app name"
       android: textAppearance="@style/TextAppearance.AppCompat.Body1"/>
```



res/menu/navigation_drawer_menu.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
   <group android:id="@+id/group main"</pre>
          android:checkableBehavior="single">
       <item
           android:id="@+id/nav add deck"
           android:title="@string/create deck"/>
   </group>
   <group android:id="@+id/group settings"</pre>
          android:checkableBehavior="single">
       <item
           android:id="@+id/nav settings"
           android:title="@string/settings"/>
   </group>
</menu>
```



```
@Override
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.main_layout);

    mNavView = (NavigationView) findViewById(R.id.mavigation_view);
    mDrawer = (DrawerLayout) findViewById(R.id.drawer_layout);
    mNavView.setNavigationItemSelectedListener(this);
}

@Override
public boolean onNavigationItemSelected(MenuItem item) {
    mDrawer.closeDrawers();
}
```



```
@Override
public void onCreate(Bundle savedInstanceState) {
   super.onCreate(savedInstanceState);
   setContentView(R.layout.main layout);
   Toolbar toolbar = (Toolbar) findViewById(R.id toolbar);
   toolbar.setHomeButtonEnabled(true);
   toolbar.setDisplayHomeAsUpEnabled (true);
   toolbar.setHomeAsUpIndicator(R.drawable ic menu);
@Override
public boolean onOptionsItemSelected(MenuItem item) {
   if (item.getItemId() == android.R.id.home) {
      mDrawer.openDrawer(GravityCompat.START);
      return true;
   return super.onOptionsItemSelected(item);
```



Спасибо за внимание!

Кирилл Филимонов Kirill.Filimonov@gmail.com Юрий Береза – ybereza@gmail.com