

Министерство образования Республики Беларусь
Учреждение образования
«Брестский государственный технический университет»
Кафедра ИИТ

Лабораторная работа №6
за 6 семестр

По дисциплине: «Разработка программного обеспечения для мобильных платформ»

Выполнил:
Студент 3 курса
Группы ПО-4(2)
Тупик Д. Л.
Проверил:
Козинский А. А.

Лабораторная работа № 6

Создание многоэкранных приложений с диалоговыми окнами и всплывающими подсказками

Цель работы: научиться создавать приложения, состоящие из нескольких активностей, и диалоговые окна, а также познакомиться с элементами тач-интерфейса.

Задание:

- Научиться создавать многоэкранные приложения
- Научиться создавать диалоговые окна и всплывающие подсказки
- Научиться писать приложения со слайдингом

Ход работы:

Ресурсы

string.xml

```
<resources>
    <string name="app_name">lab06</string>
    <string name="work_with_swipe_screen">Work with swipe screen</string>
    <string name="work_with_dialog_screen">Work with dialog screen</string>
    <string name="title_activity_tabled">Tabbed Activity</string>
    <string name="tab_text_1">Tab 1</string>
    <string name="tab_text_2">Tab 2</string>
    <string name="change_color">Change color</string>
    <string name="red">Red</string>
    <string name="yellow">Yellow</string>
    <string name="green">Green</string>
</resources>
```

colors.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="purple_200">#FFBB86FC</color>
    <color name="purple_500">#FF6200EE</color>
    <color name="purple_700">#FF3700B3</color>
    <color name="teal_200">#FF03DAC5</color>
    <color name="teal_700">#FF018786</color>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFFF</color>
    <color name="redColor" >#FFFF0000</color>
    <color name="yellowColor" >#FFFF00</color>
    <color name="greenColor" >#FF00FF00</color>
</resources>
```

Интерфейсы:

activity_dialog.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android=
    "http://schemas.android.com/apk/res/android"
    android:id="@+id/relativeLayout"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent" >
    <Button
        android:id="@+id/background_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="174dp"
```

```
        android:text="@string/change_color"/>
</RelativeLayout>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<GridLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/work_with_dialog_screen" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_row="1"
        android:layout_column="0"
        android:text="@string/work_with_swipe_screen" />
</GridLayout>
```

activity_tabed.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".TabedActivity">

    <com.google.android.material.appbar.AppBarLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:theme="@style/Theme.Lab06.AppBarOverlay">

        <TextView
            android:id="@+id/title"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:minHeight="?actionBarSize"
            android:padding="@dimen/appbar_padding"
            android:text="@string/app_name"

            android:textAppearance="@style/TextAppearance.Widget.AppCompat.Toolbar.Title" />

        <com.google.android.material.tabs.TabLayout
            android:id="@+id/tabs"
            android:layout_width="match_parent"
            android:layout_height="wrap_content" />
    </com.google.android.material.appbar.AppBarLayout>

    <androidx.viewpager.widget.ViewPager
        android:id="@+id/view_pager"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        app:layout_behavior="@string/appbar_scrolling_view_behavior" />
</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

fragment_tabed.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/constraintLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".ui.main.PlaceholderFragment">

    <TextView
        android:id="@+id/section_label"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="@dimen/activity_horizontal_margin"
        android:layout_marginTop="@dimen/activity_vertical_margin"
        android:layout_marginEnd="@dimen/activity_horizontal_margin"
        android:layout_marginBottom="@dimen/activity_vertical_margin"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toTopOf="@+id/constraintLayout"
        tools:layout_constraintLeft_creator="1"
        tools:layout_constraintTop_creator="1" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

green_tabled.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/greenLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".ui.main.PlaceholderFragment"
    android:background="@color/greenColor">

    <TextView
        android:id="@+id/green"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="@dimen/activity_vertical_margin"
        android:text="@string/green"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="@+id/greenLayout"
        tools:layout_constraintLeft_creator="1"
        tools:layout_constraintTop_creator="1" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

red_tabled.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/redLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".ui.main.PlaceholderFragment"
    android:background="@color/redColor">

    <TextView
        android:id="@+id/red"
        android:layout_width="wrap_content"

```

```

        android:layout_height="wrap_content"
        android:layout_marginTop="@dimen/activity_vertical_margin"
        android:text="@string/red"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="@+id/redLayout"
        tools:layout_constraintLeft_creator="1"
        tools:layout_constraintTop_creator="1" />

```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

yellow_tabed.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/yellowLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".ui.main.PlaceholderFragment"
    android:background="@color/yellowColor">

    <TextView
        android:id="@+id/yellow"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="@dimen/activity_vertical_margin"
        android:text="@string/yellow"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="@+id/yellowLayout"
        tools:layout_constraintLeft_creator="1"
        tools:layout_constraintTop_creator="1" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Активности (созданные для tab, и которые были мною изменены)

SectionPagerAdapter

```

package com.example.lab06.ui.main;

import android.content.Context;

import androidx.annotation.Nullable;
import androidx.annotation.StringRes;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentPagerAdapter;

import com.example.lab06.Green;
import com.example.lab06.R;
import com.example.lab06.Red;
import com.example.lab06.Yellow;

/**
 * A [FragmentPagerAdapter] that returns a fragment corresponding to
 * one of the sections/tabs/pages.
 */
public class SectionsPagerAdapter extends FragmentPagerAdapter {

    @StringRes
    private static final int[] TAB_TITLES = new int[]{R.string.green, R.string.red,
R.string.yellow};

```

```

private final Context mContext;

public SectionsPagerAdapter(Context context, FragmentManager fm) {
    super(fm);
    mContext = context;
}

@Override
public Fragment getItem(int position) {
    Fragment fragment = null;
    switch(position){
        case 0:
            fragment = new Green();
            break;
        case 1:
            fragment = new Red();
            break;
        case 2:
            fragment = new Yellow();
            break;
    }

    return fragment;
}

@Nullable
@Override
public CharSequence getPageTitle(int position) {
    return mContext.getResources().getString(TAB_TITLES[position]);
}

@Override
public int getCount() {
    // Show 2 total pages.
    return 3;
}
}

```

Основные Activity

DialogActivity

```

package com.example.lab06;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.RelativeLayout;
import android.widget.Toast;

public class DialogActivity extends AppCompatActivity {
    private Button bgButton;
    private RelativeLayout relativeLayout;
    private Context context;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_dialog);

        bgButton = findViewById(R.id.background_button);
        relativeLayout = findViewById(R.id.relativelayout);
        context = DialogActivity.this;
    }
}

```

```

        bgButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                AlertDialog.Builder builder = new AlertDialog.Builder(context);
                builder.setTitle(R.string.change_color);
                final CharSequence[] items = {
                    getText(R.string.red), getText(R.string.yellow),
                    getText(R.string.green)
                };

                builder.setItems(items, new DialogInterface.OnClickListener() {
                    public void onClick(DialogInterface dialog, int item) {
                        switch (item) {
                            case 0:

                                relativeLayout.setBackgroundResource(R.color.redColor);
                                Toast.makeText(getApplicationContext(), "Red
                                color", Toast.LENGTH_SHORT).show();

                                break;
                            case 1:

                                relativeLayout.setBackgroundResource(R.color.yellowColor);
                                Toast.makeText(getApplicationContext(),
                                "Yellow color", Toast.LENGTH_SHORT).show();

                                break;
                            case 2:

                                relativeLayout.setBackgroundResource(R.color.greenColor);
                                Toast.makeText(getApplicationContext(),
                                "Green color", Toast.LENGTH_SHORT).show();

                                break;
                        }
                    }
                });

                AlertDialog alert = builder.create();
                alert.show();
            }
        });
    }
}

```

Green

```

package com.example.lab06;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class Green extends Fragment {

    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup
    container, @Nullable Bundle savedInstanceState) {
        return inflater.inflate(R.layout.green_tabed, container, false);
    }
}

```

MainActivity

```
package com.example.lab06;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {
    private Button dialog;
    private Button swipe;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        dialog = findViewById(R.id.button);
        swipe = findViewById(R.id.button2);

        dialog.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(view.getContext(), DialogActivity.class);
                startActivity(intent);
            }
        });

        swipe.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(view.getContext(), TabedActivity.class);
                startActivity(intent);
            }
        });
    }
}
```

Red

```
package com.example.lab06;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class Red extends Fragment {
    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup
container, @Nullable Bundle savedInstanceState) {
        return inflater.inflate(R.layout.red_tabed, container, false);
    }
}
```

TabedActivity

```
package com.example.lab06;

import android.os.Bundle;

import com.google.android.material.floatingactionbutton.FloatingActionButton;
import com.google.android.material.snackbar.Snackbar;
```



```

import com.google.android.material.tabs.TabLayout;

import androidx.viewpager.widget.ViewPager;
import androidx.appcompat.app.AppCompatActivity;

import android.view.Menu;
import android.view.MenuItem;
import android.view.View;

import com.example.lab06.ui.main.SectionsPagerAdapter;
import com.example.lab06.databinding.ActivityTabedBinding;

public class TabedActivity extends AppCompatActivity {

    private ActivityTabedBinding binding;

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

        binding = ActivityTabedBinding.inflate(getLayoutInflater());
        setContentView(binding.getRoot());

        SectionsPagerAdapter sectionsPagerAdapter = new SectionsPagerAdapter(this,
getSupportFragmentManager());
        ViewPager viewPager = binding.viewPager;
        viewPager.setAdapter(sectionsPagerAdapter);
        TabLayout tabs = binding.tabs;
        tabs.setupWithViewPager(viewPager);
    }
}

```

Yellow

```

package com.example.lab06;

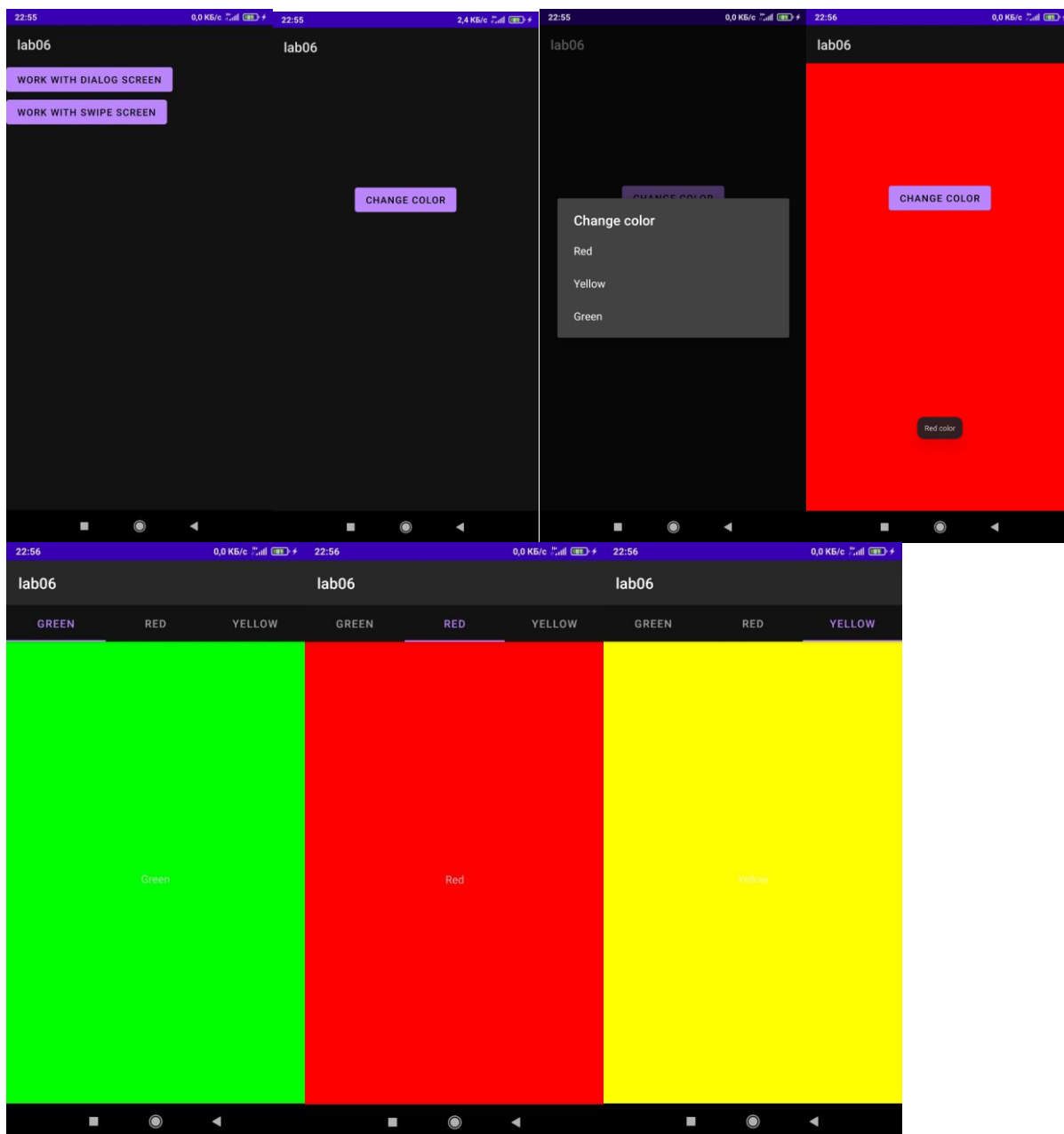
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class Yellow extends Fragment {
    @Nullable
    @Override
    public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup
container, @Nullable Bundle savedInstanceState) {
        return inflater.inflate(R.layout.yellow_tabed, container, false);
    }
}

```

Результаты программы:



Вывод: в ходе лабораторной работы, научился создавать приложения, состоящие из нескольких активностей, и диалоговые окна, а также познакомился с элементами тач-интерфейса.