

Lab06

INTENT WITH CUSTOM

Task 1: Create an application which can take user-id and password from user, and if the credentials are valid then it shows “Login successful”, otherwise it shows “login failure” message.

XML:

MainActivity:

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

    <TextView
        android:id="@+id/time"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:layout_marginTop="20dp"
        android:textSize="30dp"
        android:text="00:00:00"/>
    <RadioGroup
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <RadioButton
            android:id="@+id/hr"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Hours"/>

        <RadioButton
            android:id="@+id/min"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Minutes"/>

        <RadioButton
            android:id="@+id/sec"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Seconds"/>
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Update"
        android:layout_gravity="center"
```

```

        android:onClick="UpdateTime" />

    </RadioGroup>

</LinearLayout>

```

UpdateActivity:

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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=".UpdateActivity"
    android:padding="20dp"
    android:orientation="vertical">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="50dp" />

    <Button
        android:layout_marginTop="20dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="updateBtn"
    />

</LinearLayout>

```

JAVA:

Main Activity:

```

package com.example.myapplication;

import android.app.Instrumentation;
import android.content.Intent;
import android.support.annotation.Nullable;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.RadioButton;
import android.widget.TextView;

import java.io.Serializable;

public class MainActivity extends AppCompatActivity {
    RadioButton radId[];
    TextView txt;
    Intent i;
    Time t;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        i = new Intent(getApplicationContext(), UpdateActivity.class);
        txt = (TextView) findViewById(R.id.time);
        radId = new RadioButton[] {
            (RadioButton) findViewById(R.id.hr),

```

```

        (RadioButton)findViewById(R.id.min),
        (RadioButton)findViewById(R.id.sec)
    };
    t = new Time();
}
public void UpdateTime(View v){
    Integer code = 0;

    if (radId[0].isChecked()){
        code = 1;
    }
    else if (radId[1].isChecked()){
        code = 2;
    }
    else if (radId[2].isChecked()){
        code = 3;
    }
    Bundle b = new Bundle();
    b.putSerializable("time", (Serializable) t);
    startActivityForResult(i,code);

}
public void onActivityResult(int requestCode, int resultCode, Intent data){

}
}
class Time{
    private Integer hr;
    private Integer min;
    private Integer sec;

    public void setHr(Integer hr){
        this.hr = hr;
    }
    public void setMin(Integer min){
        this.min = min;
    }
    public void setSec(Integer sec){
        this.sec = sec;
    }

    public String getTime(){
        return hr.toString() + ":" + min.toString() + ":" + sec.toString();
    }
}

```

Update Activity

```

package com.example.myapplication;

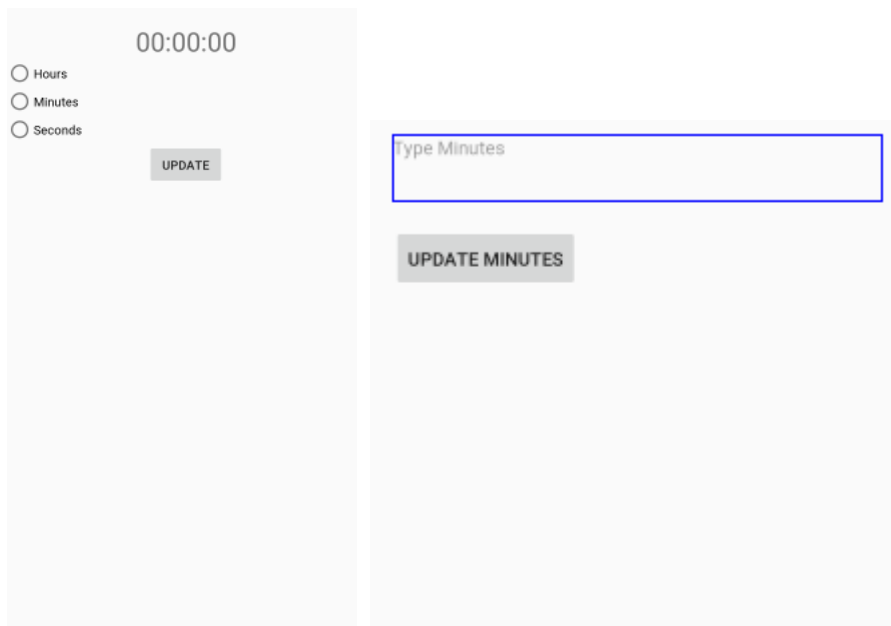
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;

public class UpdateActivity extends AppCompatActivity {
    Time t;
    Intent i;
    @Override
    protected void onCreate(Bundle savedInstanceState) {

```

```
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_update);  
  
        i = getIntent();  
        t = (Time) i.getSerializableExtra("time");  
  
    }  
    public void updateBtn(View v){  
  
    }  
}
```

OUTPUT:



Lab07

START SERVICES

Task 1: Create a start service to show its callback life cycle.

XML:

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

    <Button android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:text="Start Activity"
        android:onClick="start"/>

    <Button android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:text="Stop Activity"
        android:onClick="stop"/>

</LinearLayout>
```

Main Activity:

```
package com.example.startservices;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;

public class MainActivity extends AppCompatActivity {
    Intent i;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        i = new Intent(getApplicationContext(), stService.class);
    }

    public void stop(View view) {
        stopService(i);
    }

    public void start(View view) {
        startService(i);
    }
}
```

Service Code:

```
package com.example.startservices;

import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.provider.Settings;

public class stService extends Service {
    private MediaPlayer player;
    @Override
    public int onStartCommand(Intent intent, int flags, int startId) {

        player = MediaPlayer.create(getApplicationContext(),
Settings.System.DEFAULT_RINGTONE_URI);
        player.start();
        return super.onStartCommand(intent, flags, startId);
    }

    @Override
    public IBinder onBind(Intent intent) {
        player.stop();
        throw new UnsupportedOperationException("Not yet implemented");
    }
}
```

Output:

START ACTIVITY

STOP ACTIVITY

Lab09

BOUND SERVICES

Task 1: Creating a bounded service which can provide the service for basic arithmetic operations like addition, subtraction, multiplication and division.

XML:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:paddingTop="20sp"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal">
        <EditText
            android:id="@+id/num1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:hint="Enter"/>

        <TextView
            android:id="@+id/textViewadd"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="+" />

        <EditText
            android:id="@+id/num2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:hint="Enter"/>

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```

        android:text="Add"
        android:onClick="Addition"
    />
<TextView
    android:id="@+id/addanswer"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="20sp"
    android:gravity="center"
    android:text="" />

</LinearLayout>

<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
    <EditText
        android:id="@+id/num3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter"/>

    <TextView
        android:id="@+id/textViewsub"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="-" />
    <EditText
        android:id="@+id/num4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter"/>

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Subtract"
        android:onClick="Subtract"
    />
    <TextView
        android:id="@+id/subanswer"
        android:layout_width="wrap_content"

```



```
        android:layout_height="wrap_content"
        android:textSize="20sp"
        android:text="" />
</LinearLayout>
```

```
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
    <EditText
        android:id="@+id/num5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter"/>
```

```
<TextView
    android:id="@+id/textViewmul"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="*" />
```

```
<EditText
    android:id="@+id/num6"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="Enter"/>
```

```
<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Multiply"
    android:onClick="Multiply"
    />
```

```
<TextView
    android:id="@+id/mulanswer"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="20sp"
    android:text="" />
```

```
</LinearLayout>
```

```
<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```

        android:orientation="horizontal">
        <EditText
            android:id="@+id/num7"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:hint="Enter"/>

        <TextView
            android:id="@+id/textViewdiv"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="/" />
        <EditText
            android:id="@+id/num8"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:hint="Enter"/>

        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Divide"
            android:onClick="Divide"
            />
        <TextView
            android:id="@+id/divanswer"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textSize="20sp"
            android:text="" />
    </LinearLayout>

</LinearLayout>

```

JAVA:

MyService:

```

package com.example.hp.myapplication;
import android.app.Service;
import android.content.Intent;
import android.os.Binder;
import android.os.IBinder;
import android.util.Log;
import android.widget.Toast;
import java.text.SimpleDateFormat;
import java.util.Date;

```

```

import java.util.Locale;
public class MyService extends Service {

    Integer c;
    private final IBinder bindingObject = new MyLocalBinder();
    @Override
    public IBinder onBind(Intent intent) {
        return bindingObject; }
    public Integer add(Integer a,Integer b) { return a+b; }
    public Integer sub(Integer a,Integer b){return a-b;}
    public Integer mul(Integer a,Integer b) { return a*b; }
    public Integer div(Integer a,Integer b) {
        try { c=a/b; }
        catch (ArithmeticException e) { Log.i("error","Divide by zero exception"); }
        return c; }
    public class MyLocalBinder extends Binder {
        public MyService getService(){
            return MyService.this; }
    }}

```

ActivityMain

```

package com.example.hp.myapplication;

import android.content.ComponentName;
import android.content.Context;
import android.content.Intent;
import android.content.ServiceConnection;
import android.os.IBinder;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.EditText;
import android.widget.Spinner;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {

    MyService services;
    boolean isBound = false;
    EditText number1,number2,number3,number4,number5,number6,number7,number8;
    Integer num1,num2,num3,num4,num5,num6,num7,num8,answer;
    TextView textadd,textsub,textmul,textdiv;

    public void Addition(View view){
        num1=Integer.parseInt(number1.getText().toString());
        num2=Integer.parseInt(number2.getText().toString());
        answer = services.add(num1,num2);
        textadd.setText(answer.toString());
    }
    public void Subtract(View view) {

        num3=Integer.parseInt(number3.getText().toString());
        num4=Integer.parseInt(number4.getText().toString());
        answer = services.sub(num3,num4);
        textsub.setText(answer.toString());
    }

    public void Multiply(View view) {

        num5=Integer.parseInt(number5.getText().toString());
        num6=Integer.parseInt(number6.getText().toString());
        answer = services.mul(num5,num6);
        textmul.setText(answer.toString());
    }
}

```

```

public void Divide(View view) {

    num7=Integer.parseInt(number7.getText().toString());
    num8=Integer.parseInt(number8.getText().toString());
    answer = services.div(num7,num8);
    textdiv.setText(answer.toString());
}
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    number1=(EditText) findViewById(R.id.num1);
    number2=(EditText) findViewById(R.id.num2);
    number3=(EditText) findViewById(R.id.num3);
    number4=(EditText) findViewById(R.id.num4);
    number5=(EditText) findViewById(R.id.num5);
    number6=(EditText) findViewById(R.id.num6);
    number7=(EditText) findViewById(R.id.num7);
    number8=(EditText) findViewById(R.id.num8);
    textadd = (TextView) findViewById(R.id.addanswer);
    textsub = (TextView) findViewById(R.id.subanswer);
    textmul = (TextView) findViewById(R.id.mulanswer);
    textdiv = (TextView) findViewById(R.id.divanswer);

    Intent i = new Intent(this, MyService.class);

    bindService(i, myconnection, Context.BIND_AUTO_CREATE);
}
private final ServiceConnection myconnection = new ServiceConnection() {
    @Override
    public void onServiceConnected(ComponentName componentName, IBinder iBinder) {
        MyService.MyLocalBinder binder = (MyService.MyLocalBinder) iBinder;
        services= binder.getService();
        isBound = true;
    }

    @Override
    public void onServiceDisconnected(ComponentName componentName) {
        isBound = false;
    }
};

```

Output:



Lab10

BROADCAST RECEIVER

Task 1: Create an application named DebugConsole having the following UI

XML:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context="com.example.android.broadcast2.MainActivity">

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">
        <EditText
            android:id="@+id/num1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"/>

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="/" />
        <EditText
            android:id="@+id/num2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"/>
        <Button
            android:id="@+id/btn_div"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Send"
            android:onClick="onBtnSend" />

        <TextView
            android:id="@+id/answer"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="" />
```

```
</LinearLayout>
```

```
<TextView
    android:id="@+id/logTxt"
    android:layout_width="match_parent"
    android:layout_height="310dp"
    android:layout_marginTop="100dp"
    android:background="@color/bg"
    android:textColor="@color/text"
    android:textSize="20sp"
    android:lines="15"
    android:scrollbars="vertical" />
```

```
</LinearLayout>
```

JAVA:

```
package com.example.android.broadcast2;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;

import java.time.LocalDateTime;
import java.util.Date;

public class MainActivity extends AppCompatActivity {

    Intent intent;
    TextView text,answers;
    EditText text1, text2;
    Integer a, b, ans;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        text = (TextView) findViewById(R.id.logTxt);
        answers = (TextView) findViewById(R.id.answer);
        text1 = (EditText) findViewById(R.id.num1);
        text2 = (EditText) findViewById(R.id.num2);
    }
    public void onBtnSend(View v) {
```

```

intent= new Intent();

a = Integer.parseInt(text1.getText().toString());
b = Integer.parseInt(text2.getText().toString());
try {
    ans = a / b;
    answers.setText(ans.toString());
}
catch (Exception e){
    intent.putExtra("info",e.getMessage());
    intent.setAction("DEBUG_INFO");
    sendBroadcast(intent);
    text.setText("Divide by zero");
}
}
}

```

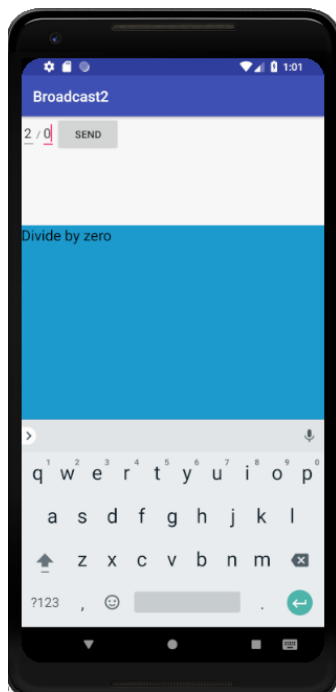
color.xml:

```

<color name="bg">#1C9CCF</color>
<color name="text">#000</color>

```

Output:



Task 2: Create an application which can send broadcast to the DebugConsole (above application). You may use the following UI as reference.

XML:

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

    <EditText
        android:id="@+id/debugMessage"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:inputType="textPersonName"
        android:hint="Debug message goes here "
        />

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="onBtnSend"
        android:text="Send"
        tools:layout_editor_absoluteX="16dp"
        tools:layout_editor_absoluteY="73dp" />
</LinearLayout>
```

JAVA:

```
package com.example.android.broadcastreciever;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.content.IntentFilter;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText msg;
    @Override
```



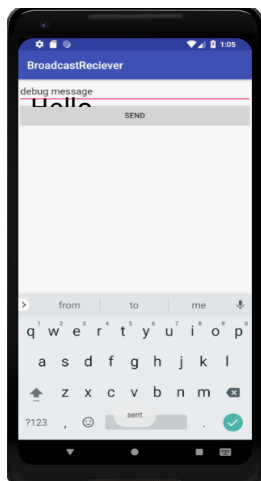
```

protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    msg=(EditText) findViewById(R.id.debugMessage);
    BroadcastReceiver br=new BroadcastReceiver() {
        @Override
        public void onReceive(Context context, Intent intent) {
            String s=intent.getStringExtra("info");
            Toast.makeText(getApplicationContext(), s, Toast.LENGTH_SHORT).show();
        }
    };
    IntentFilter filter =new IntentFilter("DEBUG_INFO");
    registerReceiver(br,filter);
}

public void onBtnSend(View v) {
    Intent intent = new Intent();
    intent.putExtra("info", msg.getText().toString());
    intent.setAction("DEBUG_INFO");
    sendBroadcast(intent);
    Toast.makeText(getApplicationContext(),"sent",Toast.LENGTH_LONG).show();
}
}

```

Output:



```

Emulator emulator-5554 A com.example.helloapp (1177) Verbose Custom
03-11 17:26:13.568 11779-11779/com.example.helloapp E/Custom Error: Hello World
java.lang.ArithmeticException: divide by zero
    at com.example.helloapp.MainActivity.logNum(MainActivity.java:30)
    at java.lang.reflect.Method.invokeNative(Native Method) <1 internal call>
    at android.support.v7.app.AppCompatActivity$DeclaredOnClickListener.onClick(AppCompatActivity.java:4498)
    at android.view.View.performClick(View.java:4498)

```

Lab 11 HANDLER

Task 1: Implement handler

XML:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    android:paddingTop="50dp">

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="New Thread"
        android:onClick="newThreadState"
        android:layout_gravity="center_horizontal"
        android:background="@color/colorPrimary"
        android:textColor="#ffffff"/>

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Blocked Thread"
        android:onClick="blockedThreadState"
        android:layout_gravity="center_horizontal"
        />

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Runnable Thread"
        android:onClick="runnableThreadState"
        android:layout_gravity="center_horizontal"
        android:background="@color/colorAccent"
        android:textColor="#ffffff"/>

    <Button
```

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Timed_Waiting Thread"
    android:onClick="timedWaitingThreadState"
    android:layout_gravity="center_horizontal"/>
```

```
<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Waiting Thread"
    android:onClick="waitingThreadState"
    android:layout_gravity="center_horizontal"
    android:background="@color/colorPrimary"
    android:textColor="#ffffff"/>
```

```
<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Terminated Thread"
    android:onClick="terminatedThreadState"
    android:layout_gravity="center_horizontal"/>
```

```
<TextView
    android:id="@+id/txt"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:scrollbars = "vertical"
    android:textSize="10sp"
/>
```

```
</LinearLayout>
```

JAVA:

```
package com.example.thread_assignment;
```

```
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.text.method.ScrollingMovementMethod;
import android.util.Log;
import android.view.View;
```

```

import android.widget.TextView;
import org.w3c.dom.Text;
public class MainActivity extends AppCompatActivity {
    public static String msg = "";
    TextView textview;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        textview = (TextView)findViewById(R.id.txt);
        textview.setMovementMethod(new ScrollingMovementMethod()); }
    public static final String TAG = "Thread Status ";
    public void newThreadState(View view) {
        Thread01 th1 = new Thread01();
        msg = (textview.getText().toString() + TAG + th1.getState().toString() + "\n");
        textview.setText(msg); }
    public void runnableThreadState(View view) {
        Thread01 th1 = new Thread01();    th1.start();
        msg = (textview.getText().toString() + TAG + th1.getState().toString() + "\n");
        textview.setText(msg);
    public void timededWatingThreadState(View view) {
        Thread01 th1 = new Thread01();
        th1.start();
        try {
            th1.sleep(2000);
        } catch (InterruptedException e) {
            e.printStackTrace();
        }
        msg = (textview.getText().toString() + TAG + th1.getState().toString() + "\n");
        textview.setText(msg);
    }
    public static Thread03 th;
    public void waitingThreadState(View view) throws InterruptedException {
        th = new Thread03();
        th.start();
    }
}

```

```

        msg = (textview.getText().toString() + TAG + msg + "\n");
textview.setText(msg);    }
    public static String data = "Group";
    public void blockedThreadState(View view) {
        Thread02 th=new Thread02(data);
        synchronized (data) {
            th.start();
            try {
                Thread.sleep(100);
            } catch (InterruptedException e) {
                Log.e(TAG, e.getMessage());
            }
            msg = (textview.getText().toString() + TAG + th.getState().toString() + "\n");
textview.setText(msg);    }    }
    public void terminatedThreadState(View view) {
        Thread th1 = new Thread();
        th1.start();
        try {
            th1.join();
        } catch (InterruptedException e) {
            e.printStackTrace();
        }
        textview.setText(textview.getText().toString() + TAG + th1.getState().toString()
+ "\n"); }}

```

Thread01

```
package com.example.thread_assignment;
```

```
import android.util.Log;
```

```
public class Thread01 extends Thread{
```

```
    @Override
```

```
    public void run() {
```

```
        try {
```

```
            for (Integer i = 1; i <= 10; i++) {
```

```
                Log.d("Iteration ", i.toString());
```

```
                Thread.sleep(1000);    }
```

```
        }catch(InterruptedException e){
```

```
            Log.e(MainActivity.TAG, e.getMessage());    }
```

```
        synchronized (MainActivity.th){
```

```
            Log.i(MainActivity.TAG, MainActivity.th.getState().toString());    }    }}
```

Thread 2:

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BSE-6B

```

package com.example.thread_assignment;
import android.util.Log;
public class Thread02 extends Thread{
    String data;
    public Thread02(String data){
        this.data = data; }
    public Thread02(){ }
    @Override
    public void run() {
        synchronized (data) {
            try {
                for (int k = 0; k < data.length(); k++) {
                    Log.d("Iteration ", data.charAt(k) + "");
                    Thread.sleep(100); }
            } catch (InterruptedException e) {

                Log.e(MainActivity.TAG, e.getMessage()); } } }

```

Thread 03:

```

package com.example.thread_assignment;
public class Thread03 extends Thread{
Thread03 th;
    @Override
    public void run() {
        th = MainActivity.th;
        Thread04 t = new Thread04();
        synchronized (th){
            try {
                t.start();
                th.wait();
            } catch (InterruptedException e) {

                e.printStackTrace(); } } }

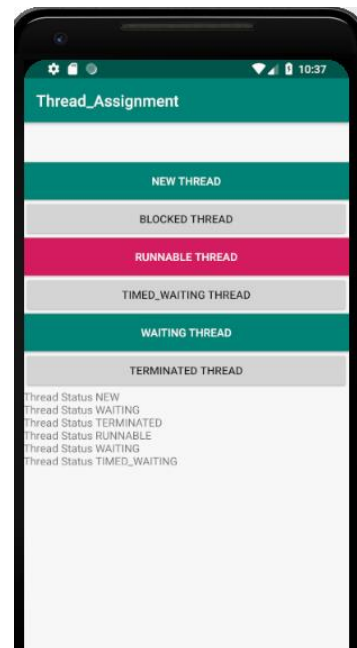
```

Thread 04 :

```

package com.example.thread_assignment;
import android.util.Log;
public class Thread04 extends Thread{
    @Override
    public void run() {
        Thread03 th = MainActivity.th;
        synchronized (th){
            MainActivity.msg = th.getState().toString(); } }

```



Lab 12

SHARED PREFERENCES

JAVA:

```
package com.example.lab12;

import android.content.SharedPreferences;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.Gravity;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    public static final String SHARED_PREFS = "sharedPrefs";
    public static final String TEXT = "text";
    TextView textView;
    private String text;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        textView = (TextView)findViewById(R.id.result_text_view);
        loadData();
        updateViews(); }
    public void applyToast(View v){
        Toast t = Toast.makeText(this,"this is text",Toast.LENGTH_SHORT);
        t.setGravity(Gravity.CENTER_HORIZONTAL,0,0);
        t.show(); }
    public void buttonClear(View v){
        TextView text = (TextView)findViewById(R.id.result_text_view);
        text.setText("0"); }
    public void addValueInView(View v){
        Button btn = (Button) v;
        String text = btn.getText().toString();

        TextView view = (TextView)findViewById(R.id.result_text_view);
        if(view.getText().toString().equals("0")){
            view.setText("");
            view.append(text); }
        else{
```

```

        view.append(text);    } }
public void buttonDivide(View v){
    v = (TextView)findViewById(R.id.result_text_view);
    ((TextView)v).append("/"); }
public void buttonMultiply(View v){
    v = (TextView)findViewById(R.id.result_text_view);
    ((TextView)v).append("*"); }
public void buttonSubtract(View v){
    v = (TextView)findViewById(R.id.result_text_view);
    ((TextView)v).append("-"); }
public void buttonAdd(View v){
    v = (TextView)findViewById(R.id.result_text_view);

    ((TextView)v).append("+"); }
public void buttonEqual(View v){
    v = (TextView)findViewById(R.id.result_text_view);
    try {
        if (((TextView) v).getText().toString().contains("/")) {
            int index = ((TextView) v).getText().toString().indexOf('/');
            String stringNum1 = ((TextView) v).getText().toString().substring(0, index);
            String stringNum2 = ((TextView) v).getText().toString().substring(index+1);
            double num1 = Double.valueOf(stringNum1);
            double num2 = Double.valueOf(stringNum2);
            double ans = num1 / num2;
            ((TextView) v).setText(String.valueOf(ans)); }
        else if (((TextView) v).getText().toString().contains("+")) {
            int index = ((TextView) v).getText().toString().indexOf('+');
            String stringNum1 = ((TextView) v).getText().toString().substring(0, index);
            String stringNum2 = ((TextView) v).getText().toString().substring(index+1);
            double num1 = Double.valueOf(stringNum1);
            double num2 = Double.valueOf(stringNum2);
            double ans = num1 + num2;
            ((TextView) v).setText(String.valueOf(ans)); }
        else if (((TextView) v).getText().toString().contains("*")) {
            int index = ((TextView) v).getText().toString().indexOf('*');
            String stringNum1 = ((TextView) v).getText().toString().substring(0, index);
            String stringNum2 = ((TextView) v).getText().toString().substring(index+1);
            double num1 = Double.valueOf(stringNum1);
            double num2 = Double.valueOf(stringNum2);
            double ans = num1*num2;
            ((TextView) v).setText(String.valueOf(ans)); }
        else if (((TextView) v).getText().toString().contains("-")) {
            int index = ((TextView) v).getText().toString().indexOf('-');
            String stringNum1 = ((TextView) v).getText().toString().substring(0, index);

```



```

        String stringNum2 = ((TextView) v).getText().toString().substring(index+1);
        double num1 = Double.valueOf(stringNum1);
        double num2 = Double.valueOf(stringNum2);
        double ans = num1-num2;
        ((TextView) v).setText(String.valueOf(ans));    }
    }catch (Exception e){
        Log.e("error","Exception: "+e);    }
    finally {
        saveData();    }
    Toast t = Toast.makeText(this,"this is text",Toast.LENGTH_SHORT);
    t.setGravity(Gravity.CENTER_HORIZONTAL,0,0);
    t.show();    }
    public void saveData() {
        SharedPreferences sharedPreferences = getSharedPreferences(SHARED_PREFS, MODE_PRIVATE);
        SharedPreferences.Editor editor = sharedPreferences.edit();
        editor.putString(TEXT, textView.getText().toString());
        editor.apply();
        Toast.makeText(this, "Data saved", Toast.LENGTH_SHORT).show();    }
    public void loadData() {
        SharedPreferences sharedPreferences = getSharedPreferences(SHARED_PREFS, MODE_PRIVATE);
        text = sharedPreferences.getString(TEXT, "");    }
    public void updateViews() {
        textView.setText(text);    }}
activity main.xml

```

```

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

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="2"
        android:orientation="horizontal"
        android:background="#3183C9">

        <TextView
            android:id="@+id/result_text_view"
            android:layout_width="match_parent"

```

```

        android:layout_height="match_parent"
        android:text="0"
        android:gravity="center_vertical"
        android:paddingRight="30dp"
        android:textColor="#FFF"
        android:textSize="40sp" />
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">
    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/_7"
        android:onClick="addValueInView"/>
    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/_8"
        android:onClick="addValueInView"/>
    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/_9"
        android:onClick="addValueInView"/>
    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/divide"
        android:onClick="buttonDivide"/>
</LinearLayout>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">
    <Button
        android:layout_width="0dp"

```

```

        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/_6"
        android:onClick="addValueInView"/>
<Button
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_weight="1"

    android:text="@string/_5"
    android:onClick="addValueInView"/>

<Button
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:text="@string/_4"
    android:onClick="addValueInView"/>
<Button
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:text="@string/multiply"
    android:onClick="buttonMultiply"/>
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">

    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/_3"
        android:onClick="addValueInView"/>
    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/_2"

```

```

        android:onClick="addValueInView"/>

<Button
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:text="@string/_1"
    android:onClick="addValueInView"/>

<Button
    android:layout_width="0dp"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:text="@string/minus"
    android:onClick="buttonSubtract"/>
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:orientation="horizontal">

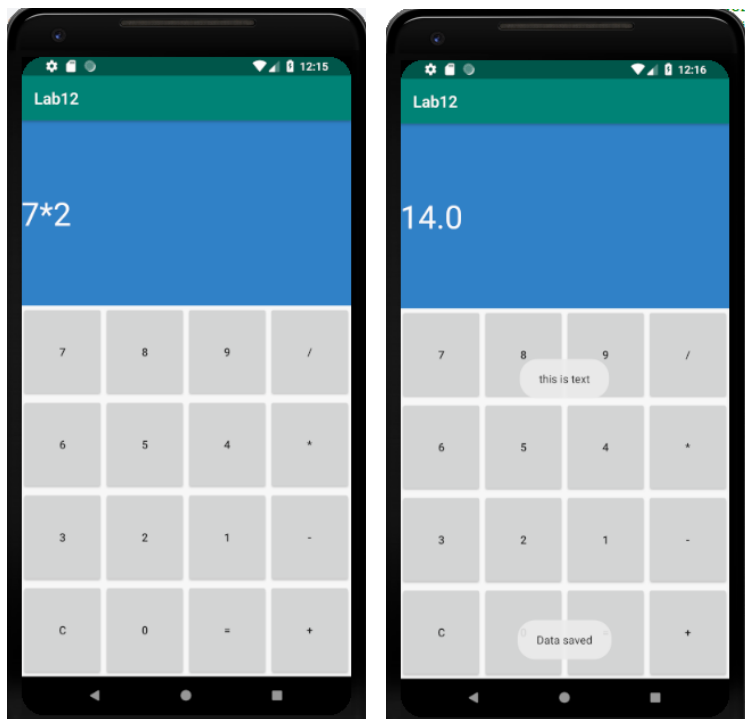
    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/c"
        android:onClick="buttonClear"/>
    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/_0"
        android:onClick="addValueInView"/>
    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="@string/equal"
        android:onClick="buttonEqual"/>
    <Button
        android:layout_width="0dp"
        android:layout_height="match_parent"

```

```
        android:layout_weight="1"
        android:text="@string/plus"
        android:onClick="buttonAdd"/>
    </LinearLayout>
</LinearLayout>
```

Strings.xml:

```
<resources>
    <string name="app_name">Lab12</string>
    <string name="_7">7</string>
    <string name="_8">8</string>
    <string name="_9">9</string>
    <string name="_6">6</string>
    <string name="_5">5</string>
    <string name="_4">4</string>
    <string name="_3">3</string>
    <string name="_2">2</string>
    <string name="_1">1</string>
    <string name="c">c</string>
    <string name="_0">0</string>
    <string name="plus">+</string>
    <string name="minus">-</string>
    <string name="multiply">*</string>
    <string name="divide">/</string>
    <string name="equal">=</string>
</resources>
```



Go Back and again start application saved data will appear in text box.

