**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="timededWatingThreadState"  
 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:

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(); } }}

