

Drawable Animation through AnimationDrawable class 1/2

rocket_thrust.xml



```
<animation-list xmlns:android="http://schemas.android.com/apk/res/android"
    android:oneshot="true">
    <item android:drawable="@drawable/rocket_thrust1" android:duration="200" />
    <item android:drawable="@drawable/rocket_thrust2" android:duration="200" />
    <item android:drawable="@drawable/rocket_thrust3" android:duration="200" />
</animation-list>
```

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```
AnimationDrawable rocketAnimation;

public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.main);

    ImageView rocketImage = (ImageView) findViewById(R.id.rocket_image);
    rocketImage.setBackgroundResource(R.drawable.rocket_thrust);
    rocketAnimation = (AnimationDrawable) rocketImage.getBackground();
}

public boolean onTouchEvent(MotionEvent event) {
    if (event.getAction() == MotionEvent.ACTION_DOWN) {
        rocketAnimation.start();
        return true;
    }
    return super.onTouchEvent(event);
}
```

Alarm Manager

Wake up the device to fire a one-time (non-repeating) alarm in one minute:

```
private AlarmManager alarmMgr;  
private PendingIntent alarmIntent;  
...  
alarmMgr = (AlarmManager) context.getSystemService(Context.ALARM_SERVICE);  
Intent intent = new Intent(context, AlarmReceiver.class);  
alarmIntent = PendingIntent.getBroadcast(context, 0, intent, 0);  
  
alarmMgr.set(AlarmManager.ELAPSED_REALTIME_WAKEUP,  
            SystemClock.elapsedRealtime() +  
            60 * 1000, alarmIntent);
```

Wake up the device to fire the alarm at approximately 2:00 p.m., and repeat once a day at the same time:

```
// Set the alarm to start at approximately 2:00 p.m.
Calendar calendar = Calendar.getInstance();
calendar.setTimeInMillis(System.currentTimeMillis());
calendar.set(Calendar.HOUR_OF_DAY, 14);

// With setInexactRepeating(), you have to use one of the AlarmManager interval
// constants--in this case, AlarmManager.INTERVAL_DAY.
alarmMgr.setInexactRepeating(AlarmManager.RTC_WAKEUP, calendar.getTimeInMillis(),
    AlarmManager.INTERVAL_DAY, alarmIntent);
```

Wake up the device to fire the alarm at precisely 8:30 a.m., and every 20 minutes thereafter:

```
private AlarmManager alarmMgr;
private PendingIntent alarmIntent;
...
alarmMgr = (AlarmManager)context.getSystemService(Context.ALARM_SERVICE);
Intent intent = new Intent(context, AlarmReceiver.class);
alarmIntent = PendingIntent.getBroadcast(context, 0, intent, 0);

// Set the alarm to start at 8:30 a.m.
Calendar calendar = Calendar.getInstance();
calendar.setTimeInMillis(System.currentTimeMillis());
calendar.set(Calendar.HOUR_OF_DAY, 8);
calendar.set(Calendar.MINUTE, 30);

// setRepeating() lets you specify a precise custom interval--in this case,
// 20 minutes.
alarmMgr.setRepeating(AlarmManager.RTC_WAKEUP, calendar.getTimeInMillis(),
    1000 * 60 * 20, alarmIntent);
```

Cancel an Alarm

```
// If the alarm has been set, cancel it.  
if (alarmMgr != null) {  
    alarmMgr.cancel(alarmIntent);  
}
```

Android Storing Options

Shared Preferences

Store private primitive data in key-value pairs.

Internal Storage

Store private data on the device memory.

External Storage

Store public data on the shared external storage.

SQLite Databases

Store structured data in a private database.

Network Connection

Store data on the web with your own network server.

Shared Preferences

To get a `SharedPreferences` object for your application, use one of two methods:

- `getSharedPreferences ()` - Use this if you need multiple preferences files identified by name, which you specify with the first parameter.
- `getPreferences ()` - Use this if you need only one preferences file for your Activity. Because this will be the only preferences file for your Activity, you don't supply a name.

Read – Write Values

1. Call `edit()` to get a `SharedPreferences.Editor`.
2. Add values with methods such as `putBoolean()` and `putString()`.
3. Commit the new values with `commit()`

To read values, use `SharedPreferences` methods such as `getBoolean()` and `getString()`.

```
public class Calc extends Activity {
    public static final String Prefs_NAME = "MyPrefsFile";

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

        // Restore preferences
        SharedPreferences settings = getSharedPreferences(Prefs_NAME, 0);
        boolean silent = settings.getBoolean("silentMode", false);
        setSilent(silent);
    }
}
```

```
@Override
protected void onStop() {
    super.onStop();

    // We need an Editor object to make preference changes.
    // All objects are from android.context.Context
    SharedPreferences settings = getSharedPreferences(PREFS_NAME, 0);
    SharedPreferences.Editor editor = settings.edit();
    editor.putBoolean("silentMode", mSilentMode);

    // Commit the edits!
    editor.commit();
}
```