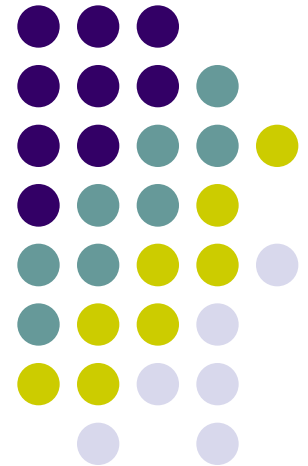
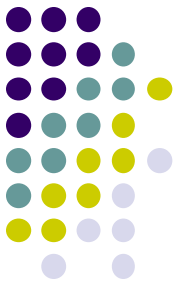


Mobile Application Development

Background Tasks in Android Thread



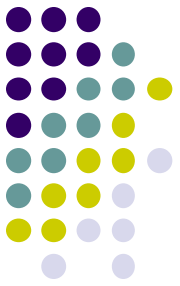
A Basic Threading in Android



- The **first step** will be to highlight the risks involved in not performing **time-consuming** tasks in a **separate thread** from the **main thread**.



Example -1: without Threads



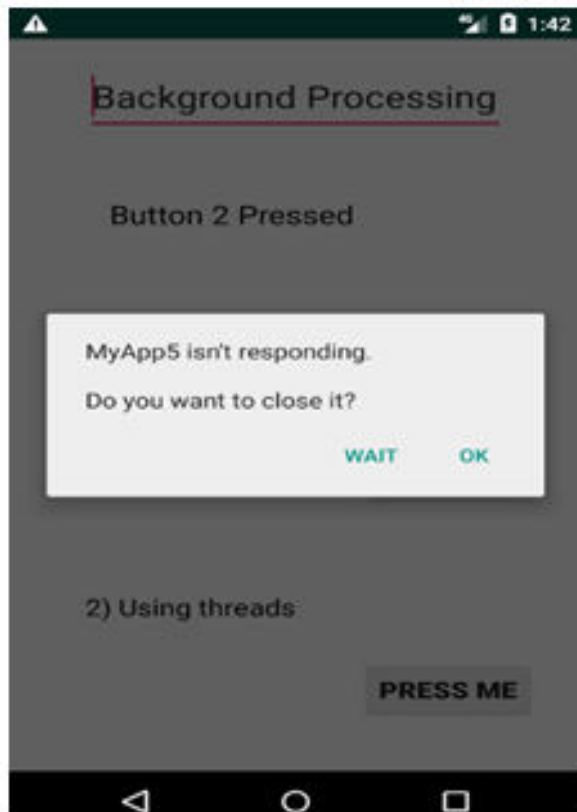
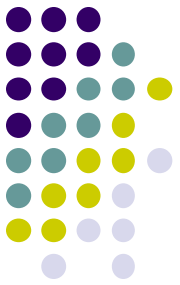
...

```
public void buttonClick(View view)
{
    long endTime = System.currentTimeMillis() + 20*1000;

    while (System.currentTimeMillis() < endTime) {
        synchronized (this) {
            try {
                wait(endTime - System.currentTimeMillis());
            } catch (Exception e) { }
        }
    }
    TextView myTextView = (TextView)findViewById(R.id.myTextView);
    myTextView.setText("Button Pressed");
}
```

...

To avoid ANR



Example -2: Using Threads



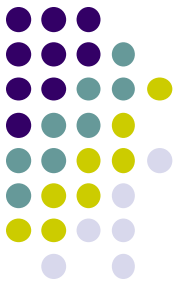
...

```
public void buttonClick(View view)
{
    Runnable runnable = new Runnable() {
        public void run() {
            long endTime = System.currentTimeMillis() + 20*1000;

            while (System.currentTimeMillis() < endTime) {
                synchronized (this) {
                    try {
                        wait(endTime - System.currentTimeMillis());
                    } catch (Exception e) { }
                }
            }
        }
    };
    Thread mythread = new Thread(runnable);
    mythread.start();
}
```

Projects

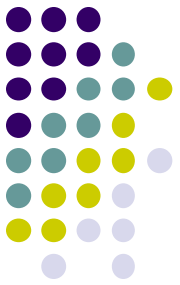
(These are the API packages.)



| | | |
|--|--|---|
| android | android.database.sqlite | android.inputmethodservice |
| android.accessibilityservice | android.drm | android.location |
| android.accounts | android.gesture | android.media |
| android.animation | android.graphics | android.media.audiofx |
| android.annotation | android.graphics.drawable | android.media.browse |
| android.app | android.graphics.drawable.shapes | android.media.effect |
| android.app.admin | android.graphics.fonts | android.media.midi |
| android.app.assist | android.graphics.pdf | android.media.projection |
| android.app.backup | android.hardware | android.media.session |
| android.app.job | android.hardware.biometrics | android.media.tv |
| android.app.slice | android.hardware.camera2 | android.mtp |
| android.app.usage | android.hardware.camera2.params | android.net |
| android.appwidget | android.hardware.display | android.net.http |
| android.bluetooth | android.hardware.fingerprint | android.net.nsd |
| android.bluetooth.le | android.hardware.input | android.net.rtp |
| android.companion | android.hardware.usb | android.net.sip |
| android.content | android.icu.lang | android.net.wifi |
| android.content.pm | android.icu.math | android.net.wifi.aware |
| android.content.res | android.icu.text | android.net.wifi.hotspot2 |
| android.database | android.icu.util | android.net.wifi.hotspot2.omadm |

Projects

(These are the API packages.)



| | | |
|---|---|--|
| android.net.wifi.hotspot2.pps | android.sax | android.system |
| android.net.wifi.p2p | android.se.omapi | android.telecom |
| android.net.wifi.p2p.nsd | android.security | android.telephony |
| android.net.wifi.rtt | android.security.keystore | android.telephony.cdma |
| android.nfc | android.service.autofill | android.telephony.data |
| android.nfc.cardemulation | android.service.carrier | android.telephony.euicc |
| android.nfc.tech | android.service.chooser | android.telephony.gsm |
| android.opengl | android.service.dreams | android.telephony.mbms |
| android.os | android.service.media | android.test |
| android.os.health | android.service.notification | android.test.mock |
| android.os.storage | android.service.quicksettings | android.test.suitebuilder |
| android.os.strictmode | android.service.restrictions | android.test.suitebuilder.annotation |
| android.preference | android.service.textservice | android.text |
| android.print | android.service.voice | android.text.format |
| android.print.pdf | android.service.vr | android.text.method |
| android.printservice | android.service.wallpaper | android.text.style |
| android.provider | android.speech | |
| android.renderscript | android.speech.tts | |