Lecture 3X — January 11, 2013

Someone asked about XML today in class. You need to know a bit about XML to build Android applications, so here's a quick description. By the way, this is examinable material.

For further reading, you can consult many resources on the Web. Here's one:

http://www.w3schools.com/xml/default.asp

XML in one line.

XML is a *structured document format.*

All XML documents therefore have the same format. However, XML has no intrinsic meaning. It just separates content from structure.

Let's look at an example of an Android manifest. It's an XML format document.

```
<?xml version="1.0" encoding="utf-8"?>
<manifest      ⟶ root node
  xmlns:android="http://schemas.android.com/apk/res/android"
  package="ca.uwaterloo.Lab1_plam"      ⟶ attribute, name is "package", value is "...Lab1_plam".
  android:versionCode="1"      ⟶ must quote all values, e.g. "1"
  android:versionName="1.0" >

  <uses-sdk
    android:minSdkVersion="10"
    android:targetSdkVersion="16" />   ⟶ self-closing tag

  <application   ⟶ application tag is nested within manifest tag
    android:allowBackup="true"
    android:icon="@drawable/ic_launcher"
    android:label="@string/app_name"
    android:theme="@style/AppTheme" >
    <activity      ⟶ more nesting
      android:name="ca.uwaterloo.Lab1_plam.MainActivity"
      android:label="@string/app_name" >
      <intent-filter>
          <action android:name="android.intent.action.MAIN" />
          <category android:name="android.intent.category.LAUNCHER" />
      </intent-filter>
    </activity>
  </application>

  <uses-permission android:name="android.permission.READ_CONTACTS" />
  <uses-permission android:name="android.permission.WRITE_CONTACTS" />

</manifest>
```

Structure of XML files. XML is always tree-structured: at the top level, there is a *root* element. (Ignore the XML declaration.) So we can convert the textual form above into a tree. Tags must be well-nested: you can't open a tag `<a>` and then close a tag `</b>` without closing `</a>` first.

```
manifest
├── uses-sdk
├── application
│           └── activity
│                       └── intent-filter
│                                   ├── action
│                                   └── category
├── uses-permission
└── uses-permission
```