

GOOGLE'S MOTION TO STRIKE PORTIONS OF THE MITCHELL PATENT REPORT

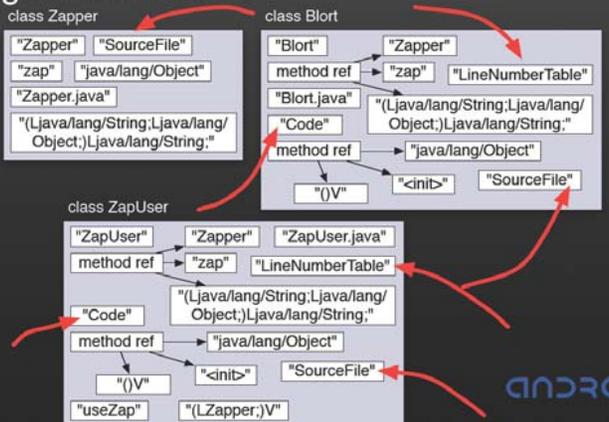
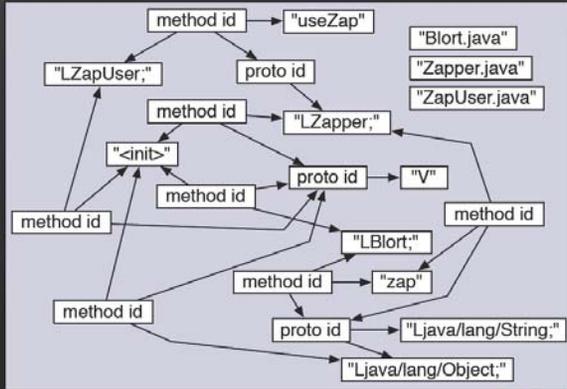
Civ. No. CV 10-03561-WHA

Exhibit E

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	<p>dalvik/dx/src/com/android/dx/dex/file/TypeIdItem.java                      dalvik/dx/src/com/android/dx/cf/cst/ConstantPoolParser.java</p>
<p>removing said duplicated elements from said plurality of class files to obtain a plurality of reduced class files; and</p>	<p>The Android dx tool removes the duplicated elements from the plurality of class files (e.g., as part of the process of forming the .dex file) and obtains a plurality of reduced class files (the reduced class files including a subset of the code and data contained in the class files). This process, and contents of the reduced class file, is clearly explained and illustrated in the Dalvik Video at time 7:20–9:25 and Dalvik Presentation, slides 15-20.</p> <p>The Dalvik Presentation shows the class files combining into a shared constant pool (shared table) in the .dex file, whereby duplicated elements are removed from the class files when using a subset of the code and data contained in the class files, i.e., the reduced class files, to form the .dex file.</p> <div data-bbox="886 740 1709 1325" data-label="Diagram"> <p>The diagram, titled "Dex File Anatomy" with an Android logo, illustrates the process of dexification. On the left, a ".jar file" contains three ".class file" blocks. Each ".class file" block consists of a "heterogeneous constant pool" (blue box) and "other data" (orange box). On the right, a ".dex file" contains a shared constant pool (blue box) divided into "string_ids constant pool", "type_ids constant pool", "proto_ids constant pool", "field_ids constant pool", and "method_ids constant pool", along with "other data" (orange box). Dashed lines of various colors (green, blue, pink) show the mapping from the "heterogeneous constant pool" of each ".class file" to the corresponding specialized pools in the ".dex file" shared constant pool, demonstrating how duplicated elements are removed and shared.</p> </div> <p>(Dalvik Presentation, slide 15)</p>

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	<p>The original class files are combined into a single .dex file, which includes a plurality of reduced class files (i.e., a subset of code and data of the class files, with duplicates removed). This is also illustrated in slide 11 of the Dalvik presentation, which shows the anatomy of a .dex file:</p> <div data-bbox="911 412 1688 997" data-label="Diagram"> <p><b>Dex File Anatomy</b></p> <p>The diagram illustrates the structure of a .dex file. On the left, there are code snippets:     <pre>"Hello World" "Lcom/google/Blort;" "println" ... void fn(int) double fn(Object, int) String fn() ... PrintStream.println(...) collection.size() ...</pre>     Arrows point from these snippets to the corresponding sections in the central table:     <ul style="list-style-type: none"> <li>"Hello World" points to <b>string_ids</b></li> <li>"Lcom/google/Blort;" points to <b>type_ids</b></li> <li>"println" points to <b>proto_ids</b></li> <li>void fn(int) points to <b>method_ids</b></li> <li>double fn(Object, int) points to <b>method_ids</b></li> <li>String fn() points to <b>method_ids</b></li> <li>PrintStream.println(...) points to <b>method_ids</b></li> <li>collection.size() points to <b>method_ids</b></li> </ul>     On the right, there are constant pool entries:     <pre>int String[] com.google.Blort ... String.offset Integer.MAX_VALUE ...</pre>     Arrows point from these entries to the corresponding sections in the central table:     <ul style="list-style-type: none"> <li>int points to <b>type_ids</b></li> <li>String[] points to <b>type_ids</b></li> <li>com.google.Blort points to <b>type_ids</b></li> <li>String.offset points to <b>field_ids</b></li> <li>Integer.MAX_VALUE points to <b>field_ids</b></li> </ul>     The central table structure is:     <table border="1"> <tr><td>header</td></tr> <tr><td>string_ids</td></tr> <tr><td>type_ids</td></tr> <tr><td>proto_ids</td></tr> <tr><td>field_ids</td></tr> <tr><td>method_ids</td></tr> <tr><td>class_defs</td></tr> <tr><td>data</td></tr> </table>     The Android logo is in the top right, and the word "ANDROID" is in the bottom right.     </p></div> <p>(Dalvik Presentation, slide 11)</p> <p>Next, slides 18-20 of the Dalvik Presentation show the removal of the duplicated elements of the plurality of class files such that the resulting .dex file contains only one copy of each element in its shared constant pool (shared table).</p>	header	string_ids	type_ids	proto_ids	field_ids	method_ids	class_defs	data
header									
string_ids									
type_ids									
proto_ids									
field_ids									
method_ids									
class_defs									
data									

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	<div data-bbox="919 228 1675 800" style="background-color: #333; color: white; padding: 10px;"> <h2 style="text-align: center;">Shared Constant Pool </h2> <p style="text-align: center;">Original .class files</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="997 357 1239 560"> <p>class Zapper</p> <ul style="list-style-type: none"> <li>"Zapper" "SourceFile"</li> <li>"zap" "java/lang/Object"</li> <li>"Zapper.java"</li> <li>"(Ljava/lang/String;Ljava/lang/Object;)Ljava/lang/String;"</li> </ul> </div> <div data-bbox="1249 357 1606 560"> <p>class Blort</p> <ul style="list-style-type: none"> <li>"Blort"</li> <li>method ref → "Zapper"</li> <li>method ref → "zap" "LineNumberTable"</li> <li>"Blort.java"</li> <li>"Code" → "(Ljava/lang/String;Ljava/lang/Object;)Ljava/lang/String;"</li> <li>method ref → "java/lang/Object"</li> <li>"(V"</li> <li>"&lt;init&gt;" "SourceFile"</li> </ul> </div> </div> <div style="margin-top: 10px;"> <p>class ZapUser</p> <ul style="list-style-type: none"> <li>"ZapUser" "Zapper" "ZapUser.java"</li> <li>method ref → "zap" "LineNumberTable"</li> <li>"Code" → "(Ljava/lang/String;Ljava/lang/Object;)Ljava/lang/String;"</li> <li>method ref → "java/lang/Object"</li> <li>"(V"</li> <li>"&lt;init&gt;" "SourceFile"</li> <li>"useZap" "(LZapper;)V"</li> </ul> </div> <p style="text-align: right; color: #0070C0; font-weight: bold;">ANDROID</p> </div> <p style="text-align: center;">(Dalvik Presentation, slide 18)</p>

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	<div data-bbox="919 228 1675 787"> <h3 style="text-align: center;">Shared Constant Pool </h3> <p style="text-align: center;">Original .class files</p>  <p style="text-align: right;"></p> </div> <p style="text-align: center;">(Dalvik Presentation, slide 19)</p> <div data-bbox="919 820 1675 1372"> <h3 style="text-align: center;">Shared Constant Pool </h3> <p style="text-align: center;">.dex file</p>  <p style="text-align: right;"></p> </div> <p style="text-align: center;">(Dalvik Presentation, slide 20)</p>

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	<p>In the Android source code, <i>see also generally</i>:</p> <p>“Interfaces and implementation of things related to the constant pool.  PACKAGES USED:  * com.android.dx.rop.type  * com.android.dx.util”</p> <p><a href="#">dalvik/dx/src/com/android/dx/rop/cst/package.html</a>.</p> <p><i>See also:</i>  <a href="#">dalvik/dx/src/com/android/dx/dex/file/DexFile.java</a>  <a href="#">dalvik/dx/src/com/android/dx/dex/file/TypeIdsSection.java</a>  <a href="#">dalvik/dx/src/com/android/dx/dex/file/TypeIdItem.java</a>  <a href="#">dalvik/dx/src/com/android/dx/cf/cst/ConstantPoolParser.java</a></p>
<p>forming a multi-class file comprising said plurality of reduced class files and said shared table.</p>	<p>As explained above, the Android dx tool forms a multi-class file—the .dex file—comprising the reduced class files and a shared constant pool (shared table) such that duplicate elements have been removed. This process is explained in the Dalvik Video at time 7:20–9:25 and Dalvik Presentation, slides 11 and 15-20. The reduced class files include a subset of the code and data of the original class files, e.g., “class_defs” and “data” illustrated in slide 11 and the “other data” illustrated in slide 15, and the recited shared table includes, e.g., one or more of the “string_ids constant pool,” “type_ids constant pool,” “proto_ids constant pool,” “field_ids constant pool,” and “method_ids constant pool.”</p> <p>The Dalvik Presentation shows the original class files being combined into a .dex file (multi-class file) comprising the plurality of reduced class files and the shared constant pool (shared table):</p>