**Description:**

This document contains information about the schema & views used in the Darwin database.

**Schema**

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| **Table Name** | **Description** |
| APKInformation | Contains information about each app collected from Google Play. |
| APKSources | Source the data was collected from (Currently all are from Google Play) |
| Overprivilege | All discovered overprivileges |
| Underprivilege | All discovered underprivileges |
| Permissions | Names of permissions. This table links to the overprivilege and underprivilege tables. |
| SigningInfo | Signing information as collected from the AndroidManfiest.xml files |
| ToolResults | Results from the static analysis tools. |
| apkParser\_intents | List of recorded intents. Connects to the apkParser\_intents\_join table |
| apkParser\_intents\_join | All discovered intents for each app. This links to the apkParser\_intents and APKInformation tables. |
| apkParser\_privs | List of recorded permission from the AndroidManifest.xml file. Connects to the apkParser\_privs\_join table |
| apkParser\_privs\_join | All discovered permissions for each app. This links to the apkParser\_privs and APKInformation tables. |

Note: Further schema information may be viewed in the schema file.

**Views**

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| **View** | **Description** |
| App\_ToolInfo\_MinJava | Retrieves basic app and tool information which includes the information gathered from Google Play, and from the static analysis tools. A minimum java size of > 0 is used to ensure that there were not issues reverse engineering the collected apps. This view is intended to serve as a base for a variety of other views which we built, but may also be used by researchers for future views. |
| OPrivCount | Displays list of permission and the number of times Stowaway determined it to be overprivileged. An overprivilege is a permission which an app requests, but does not need. An overprivilege is a security concern since it does not conform to the principle of least privilege. |
| UPrivCount | Displays list of permission and the number of times Stowaway determined it to be underprivileged. An underprivilege is a permission an app does not request in its AndroidManifest.xml file, but is requested in the source code. An underprivilege is a quality concern since it may lead to the app crashing. |
| avgAppValues | Displays the average Google Play and static analysis results for each of the analyzed apps. Some of the returned values include average user ratings, app size (in Java files and LOC), jLint score, and requested permissions. |
| appVersionCounts | Return the number of versions for each of the collected apps. Results are displayed in descending order. |
| appsWithOverPriv | Returns number of apps which have at least 1 overprivilege. |
| PermissionCount | Returns list of most commonly requested permissions. Results are displayed in descending order. |
| topGenreCounts | Generates list of most collected genres in descending order. |
| topOccuringOverPrivs | Lists the overprivileges which occur most often. The result set includes the name of the permission which was overprivileged, the percent of collected apps that it occurs in, and the number of times it was discovered. |