

Check Digit Android App

Pavillion

v1.9

Intro

Pavillion is a simple Android app that is capable of calculating check digits for EXE locations. It supports calculating static and rotating check digits. It is able to send email reports of the locations that need to have labels replaced, and includes methods to limit abuse of the app by production associates.

Purpose

This app is intended to be used by associates to lookup a location's check digits when the location's label is damaged or missing. Since the device(s) running the app can be installed in a fixed location associates do not need to find a clerk or supervisor to look up a location's check digit, and the clerk or supervisor does not need to remind anyone to replace the damaged label. Automated reports are sent to the specific associates responsible for re-labeling locations.

If configured to send reports the app is a viable method of reducing time loss due to damaged labels, and provides a method to track how many labels have been replaced.

Requirements

- An Android device. The make/model should not matter, but it will have to run at least version 4.0.3. The device should have a front facing camera. A tablet 10 inches or larger is recommended, but the app has been tested on smaller tablets and phones.
- A mount to hold the tablet. We are using a metal wall mounted enclosure. [1] **see Resources*
- A Google email account. This account is required to download the app from the Play Store and to register for the private beta. [2]
- An email account to send reports. This can be the Google email account from above, or a different account if desired.
- An internet connection. This will be used to send reports. An open WiFi connection can be used (if available).

Privacy

This app uses the front facing camera to take a picture every time a location check digit is calculated. This feature is included as a means to help prevent associates from cheating the production system. Currently this feature is required. If the device is running Android v6.0 or later the app will request permission to use the camera when it is first ran. This permission must be granted for the app to work. If using an earlier version of Android this request will not be shown, but the camera will still be used. The app has not been tested on a device without a front-facing camera.

The app also requires an email account username and password. This data is not stored encrypted, and a personal email account should not be used. It is recommended that a separate email account be created just for use in this app.

Distribution

This app is distributed via the Google Play Store as a private beta. In order to download and use the app a Gmail account must be created for the device that will run the app, and that app must be approved to join the private beta program. Once approved a link to download the app will be sent to that email address. Requests can be sent to jonathan.nelson@spartannash.com

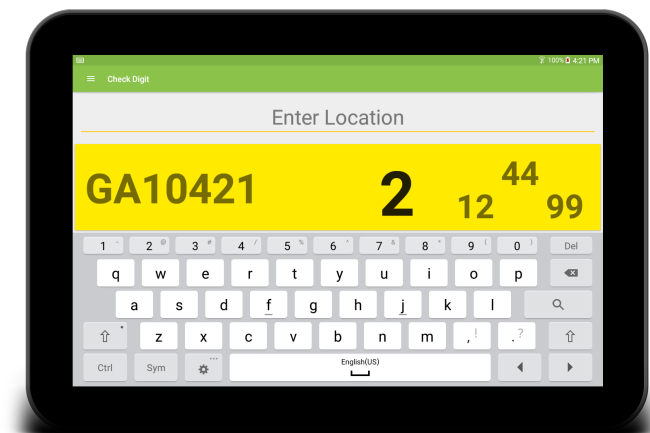
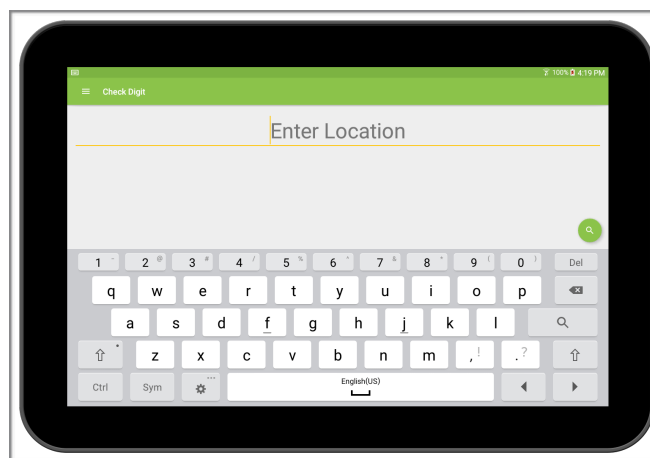
Usage

Main Interface

The main interface has been kept as minimal as possible to simplify usage. The main screen only has a single text field to enter a location. After entering the location the associate can tap the search icon, or the enter key on the keyboard to display that location's check digits.

This app is not connected to a warehouse management system, so the validity of the location can not be checked. Associates will need to be careful to type the correct location.

The app will allow any sequence of seven characters consisting of only numbers and the letters A-Z. Some basic input filtering is done to eliminate spaces and non-alphanumeric characters.



Settings

The settings page can be accessed from the main menu. The settings page is protected by a password. The default password is **1234**. This password can be changed in the settings. The settings page has four subsections: Email configuration, report scheduling, password settings, and a record viewer.

Email Configuration

The email configuration tab is used to configure the email account used to send reports, as well as to define the email address that will receive reports. In order for the app to send email reports it will need to know the mail server address, port number, as well as the user account and password.

These settings will vary based on the email service provider used. For reference the settings for a Gmail based email account would be the following:

Server address: smtp.google.com

Server port number: 465

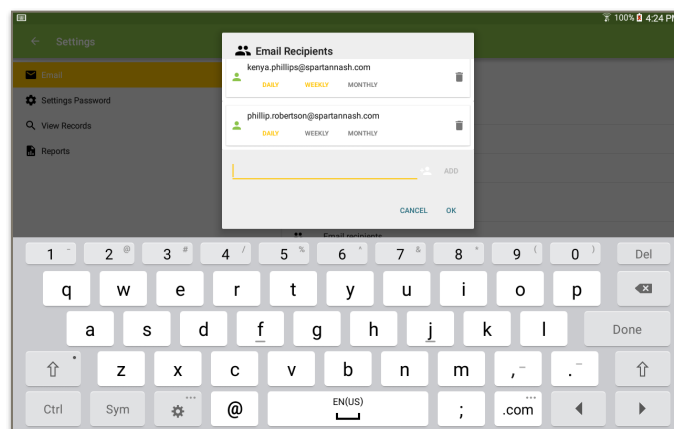
Email username: your.full.email@gmail.com

Email password: your_password

If an outgoing email account is not added then reports will not be sent.

To configure who will receive reports click on the email recipients button. Email addresses are added one at a time. By default recipients will receive a copy of the daily report. Weekly and monthly reports can be enabled by tapping that option for each recipient.

If no recipients are listed then reports will not be sent.



Note: as of version 1.9 weekly and monthly summary reports are not yet being generated. These will be added in a later version.

After entering your email account details and recipients you may test your settings by clicking the test email settings button. This will send a test email to every recipient listed. This test may take a few minutes to complete.

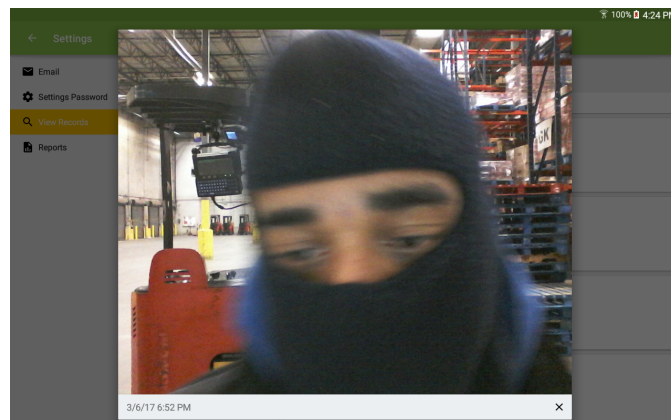
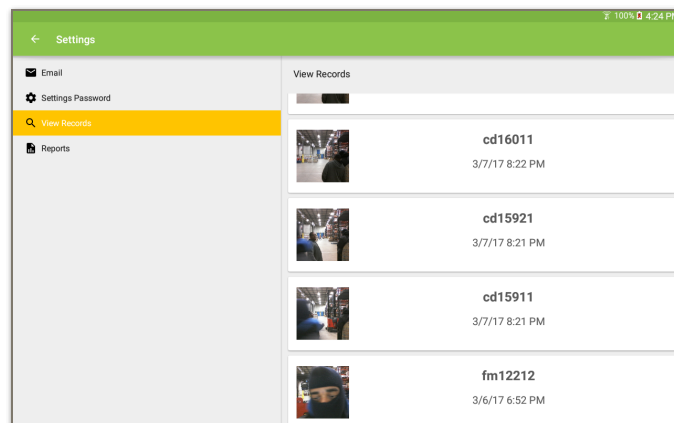
Settings Password

Use this page to either change the current settings password, or to reset the settings password back to the default **1234**.

View Records

This page will display all of the locations that have been searched for and will include the date and time, as well as a thumbnail of the picture taken with the front facing camera. Records are kept on the device for one year. Photos are kept for 30 days. If a photo has been deleted a placeholder image will be shown instead.

A larger version of the picture can be viewed by tapping on a record. This feature is intended as a method to prevent associates from abusing the app by looking up multiple check digits without having to drive to a location first. For facilities that use standard time pay this would allow an associate to complete multiple assignments in a very short time period.



Reports

The app supports three different types of reports: daily, weekly, and monthly.

Daily

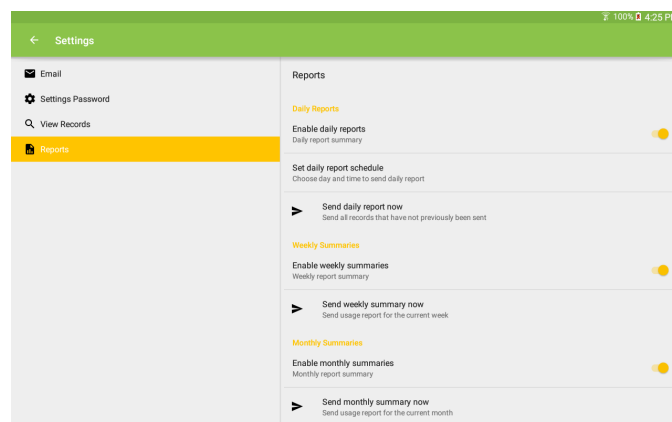
Includes a condensed list of locations that were looked up. Duplicate locations will be removed. This list will only include location lookup records that were not previously sent. This report should be sent to whichever associates are responsible for re-labeling the locations.

Weekly

As of version 1.9 this report has not been finalized. It will be included in a later version.
A summary report that includes the number of locations that were looked up and the number that were unique vs the number that were looked up more than once. This report is intended to be used to verify that locations are being re-labeled

Monthly

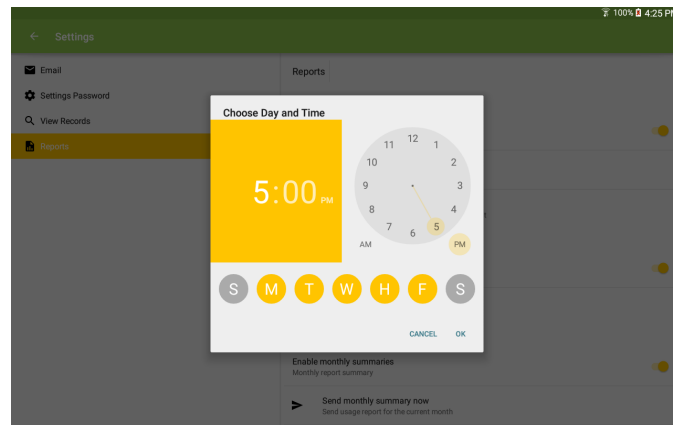
As of version 1.9 this report has not been finalized. It will be included in a later version.
A summary report. Once complete this report will included the number of locations that were looked up, the number of unique and duplicated locations, and statistical data on the app usage.



These reports can be enabled or disabled independently, and can be sent on demand if automatic sending is not desired.

If enabled the weekly and monthly report will be sent automatically on a fixed schedule. Weekly reports are sent out on Sundays at 5 P.M. Monthly summaries are sent out on the last day of the month at 4 P.M.

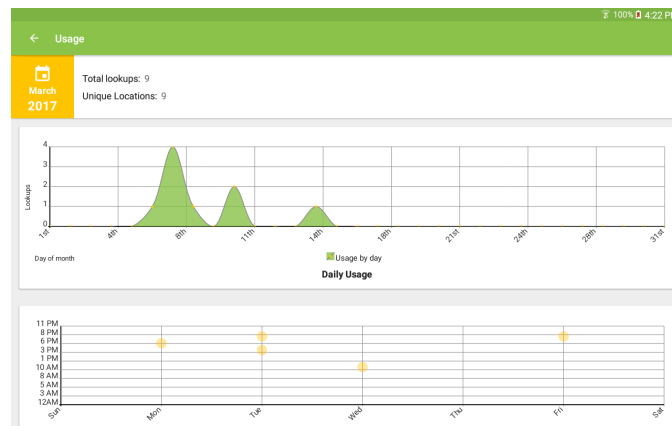
The schedule for daily reports can be configured to send at a scheduled hour on specific days of the week. By default daily reports will be sent at 5 P.M. every weekday.



Usage Statistics

The app records some basic statistical usage data. The statistics for the current month can be viewed on the usage page from the main menu. This page will show the number of locations that were looked up each day of the month, as well as a scatter plot showing what time of the day and day of the week are most popular. This can be used to gauge the usefulness of the app for various shifts.

This data will eventually be included in the monthly reports.



Resources

[1] Galaxy Tab wall mount: <https://www.compulocks.com/tablet-lock/galaxy-enclosure-locks/galaxy-tab-space-enclosure-wall-mount-fits-galaxy-tab-1-2-and-note-tab3-10-1.html>

[2] Pavillion Google Play Store: <https://play.google.com/store/apps/details?id=io.phobotic.pavillion>