**Waste Collection App (WCA)**

**Main Objectives**

The app has been started using Xamarin MVVM and must be completed using the same architecture.

Use of additional frameworks are permitted e.g. for editing the PDF tickets but must be well commented.

**Description**

Installed on Android PDA for driver of a Trade Waste truck.

The jobs for each day are transferred from an MS Access database to the PDA's SD card.

When the truck arrives at the customer site, the driver may have several jobs.

Each job consists of a number of wheelie bins (3 sizes) with a particular waste type. e.g.

|  |  |  |
| --- | --- | --- |
| Qty | Container | Waste Type |
| 1 | WB240 | Glass |
| 3 | WB1100 | General |
| 1 | WB660 | DMR |

The driver will empty all the bins then regardless of the number of bins or jobs, will enter a single weight for the total into the PDA.

The customer will be shown the actual jobs completed and will add a signature. The weight must not be visible to the customer. The driver will then email a ticket to the customer (without weight) and a ticket back to ISM with the weight.

When the round is complete, the jobs and weights are transferred back to the database.

The app is partly complete (completed parts in green text – next page)

Table

Description automatically generatedText

Description automatically generated

**Specification**

PIN to open app

Driver to select name (text file on SD card) and vehicle (text file on SD card). Save to TradeWasteConfig.txt

If the vehicle is a Hire vehicle, the driver will enter the registration.

Load and decrypt diary file (TradeWaste-20220516.txt). Unencrypted version of TradeWaste.txt (hardcoded) is loaded. The file actually needs to be selected by the driver or possibly ensure that the date in the diary file actually matches the date when the jobs are processed in the app.

Show collapsed list of customers with site and notes for driver (grey background)

Expand customer line (blue background) to show run no, number and type of containers with waste types

Driver can change number of containers (replace text box with up / down spin buttons)

If ***Charge as contract*** is true, do not allow no of containers to be lower than number in diary file.

If no of containers increases allow driver to select from Extra waste or Bin refilled dropdown list

Driver adds total weight. Save weights in extra column to same file and add event time save to diary file. Also save the ticket number.

If job not completed, allow driver to select the reason from list of cancel reasons (text file on SD card) and save to file; this is called a Void Visit.

Click ticket button > show customer name, site, waste type, number and type of containers (but not the weight).

Customer to sign underneath, save signature.

If customer not present, click button to add NTS to ticket in place of customer signature.

Driver clicks on Send Ticket button

PDF Ticket

Add ticket number to textbox in top right corner. Starting number is in config file. E100522

Add customer name to 1st line below header

Add site address, town and postcode to 2nd line

Add date to end of 2nd line

Add number of containers serviced to the containers textboxes under the matching waste type

If no of bins is more than in diary, add tick to Extra row under the appropriate waste type

Add driver's name and vehicle registration

Add customer signature to bottom

Email ticket to customer email address (and BCC tickets@ismwaste.co.uk)

and save to SD card e.g. ADH\_20220516\_Ticket\_E100522.pdf

Email subject: Customer name and ticket no.

Add total weight in the large box under extra waste line

Email ticket to tickets@ismwaste.co.uk and save to SD card e.g. ADH\_20220516\_Ticket\_E100522\_ISM\_Copy.pdf

Delete customer signature

Driver to click button to mark job as done, remove from list.

Increment ticket number

Email to Customer

Void visit

Send Void Visit Emails

Allow driver to attach photos to both emails

Save reason for void visit to file

**Notes:** TradeWaste.txt is encrypted / decrypted in MS Access VBA with the function to be provided by Tony Holden.

Both TradeWaste files will have the date appended to the filename e.g. TradeWaste‑20220516.txt and TradeWasteConfig-20220516.txt

The diary file, TradeWaste.txt is a CSV file with the commas replaced with the pipe character to allow commas in the notes to the driver. It probably has more columns than are required but these will change.

Please add comments to aid future development as minor changes will be done internally, particularly the addition and removal of columns from the loaded / saved diary file

Next version(s)

Communication with truck onboard weigher via bluetooth, add weights for each job

Wireless transfer of data between PDA and PC

Automatic data transfer between database system and PDA

**Email To Customer**

Dear Customer

Please find attached your ticket for today's collection.

Regards

ISM Waste & Recycling

P.S. Send queries to invoicing@ismwaste.co.uk

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**Void Visit Email to Customer**

Dear Customer

Please find attached your ticket for today's collection.

Unfortunately our driver could not empty your bins due to the following reason:

***Add reason here***

Regards

ISM Waste & Recycling

P.S. Send queries to invoicing@ismwaste.co.uk

**==================================================================================**

**Diary File – TradeWaste-*yyyymmdd*.txt**

**Column Headers**

RunNo|ScheduleID|Event\_Date|Customer|Site|Town|Postcode|Qty|Container|Waste\_Type|Driver\_Note|Completed|AreaID|DateID|Area|ChargeAsContract|MaxWeight|CustomerSiteID|OrderNo

|Email\_Address|ServiceEventID|CustomerID|Addr1|Event\_Time|Weight|TicketNo|CancelReasonID

**Example when loaded**

10|87|24/05/2022|Hurstwood H60|Oceanic|Bolton|BL3 9SU|2|WB1100|General|Gate code 1430|0|10|1457|Trade Waste|0|800|2159|1|hurstwood@comp-invoicing.com|1372235|3065|43 Dumers Lane|00:00|0

**Example when finished**

10|87|24/05/2022|Hurstwood H60|Oceanic|Bolton|BL3 9SU|3|WB1100|General|Gate code 1430|1|10|1457|Trade Waste|0|800|2159|1|hurstwood@comp-invoicing.com|1372235|3065|43 Dumers Lane|06:35|1035|E100522|0

Updated by app

**Diary File – TradeWaste-*yyyymmdd*.txt Column Definitions**

|  |  |  |  |
| --- | --- | --- | --- |
| INDEX | FIELD | TYPE | COMMENT |
| 0 | RunNo | INT | Determines the order of jobs |
| 1 | ScheduleID | INT |  |
| 2 | Event\_Date | DATE | Format dd/mm/yyyy |
| 3 | Customer | STRING | May limit to 25 chars |
| 4 | Site | STRING | Possibly 20 chars |
| 5 | Town | STRING |  |
| 6 | Postcode | STRING | 10 chars |
| 7 | Qty | INT | Max 99 |
| 8 | Container | STRING |  |
| 9 | Waste\_Type | STRING |  |
| 10 | Driver\_Note | STRING | Red text for driver |
| 11 | Completed | INT | 0 or 1 |
| 12 | AreaID | INT |  |
| 13 | DateID | INT |  |
| 14 | Area | STRING |  |
| 15 | ChargeAsContract | INT | 0 or 1 |
| 16 | MaxWeight | INT |  |
| 17 | OrderNo | INT | 0 or 1 |
| 18 | Email\_Address | STRING | 25 chars |
| 19 | ServiceEventID | LONG INT |  |
| 20 | CustomerID | INT |  |
| 21 | Addr1 | STRING |  |
| 22 | Event\_Time | TIME | Format 06:35 |
| 23 | Weight | INT |  |
| 24 | TicketNo | STRING | e.g. E100055 |
| 25 | CancelReasonID | INT | 0 if not cancelled |