Cash Register – Software Detailed Design Requirements

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# Introduction

A small stand-alone Cash Register needs to be designed that reads barcodes of products that a Customer has selected.

This document lists the **requirements** of the **software detailed design.**

Every requirement is composed of:

* One unique ID following this pattern: LLR\_XXXXX (Five digits),
* A name, which is always a small introduction of the requirement,
* A text, describing what is this requirement for.

# Software Detailed Design Requirements

DDR\_00100

Name: Add product

Text: When a product is scanned, addproduct shall add the product to the current list of scanned products for a given session.

Covers: ?

Function: addProduct

DDR\_00120

Name: Add Product display

Text: When a product is scanned, addproduct shall display the product being added to the HMI

Covers: HLR\_00100

Function: addProduct

DDR\_00150

Name: Add Product too many

Text: If the number of scanned products in the product list exceeds the maximum number of products allowed in a basket, no future products shall be added to the product list

Covers: HLR\_00100

Function: addProduct

DDR\_00200

Name: Identify product

Text: Given a product barcode, identifyProduct shall display the name of the product in the HMI

Covers: ?

Function: identifyProduct

DDR\_00250

Name: Identify Product non-existent

Text: If a product is scanned and it doesn't exist in the product database, then identifyProduct shall return the null value

Covers: HLR\_00200

Function: identifyProduct

DDR\_00300

Name: End application active state (empty cart)

Text: If the end session key has been pressed and the Cashregister application is in the active state then Cashregister\_end shall empty out shopping basket data

Covers: HLR\_00300

Function: Cashregister\_end

DDR\_00350

Name: End application active state (generate ticket)

Text: If the end session key has been pressed and the Cashregister application is in the active state then Cashregister\_end shall generate the ticket.

Covers: HLR\_00350

Function: Cashregister\_end

DDR\_00360

Name: End application active state (idle state)

Text: If the end session key has been pressed and the Cashregister application is in the active state then the Cashregister application shall be placed in the idle state

Covers: HLR\_00350

Function: Cashregister\_end

DDR\_00375

Name: End application not active state

Text: If the end session key has been pressed and the Cashregister application is not in the active state then the key is ignored

Covers: HLR\_00350

Function: Cashregister\_end

DDR\_00400

Name: Cashregister\_cancel end session

Text: If the cancel key is pressed the Cashregister\_cancel shall end the session

Covers: HLR\_00400

Function: Cashregister\_cancel

DDR\_00450

Name: Cashregister\_cancel return to state idle

Text: If the cancel key is pressed the Cashregister\_cancel shall place the Cashregister application in the Idle state

Covers: HLR\_00400

Function: Cashregister\_cancel

DDR\_00460

Name: Cashregister\_cancel not in active

Text: If the cancel key is pressed the Cashregister\_cancel shall remove the last product from the current list of scanned products

Covers: HLR\_00400

Function: Cashregister\_cancel

DDR\_00475

Name: Cashregister\_cancel in idle state

Text: In the idle state the cancel key shall be ignored

Covers: HLR\_00400

Function: Cashregister\_cancel

DDR\_00500

Name: Cashregister\_barcode

Text: When a barcode has been read and the Cashregister is in the active state, Cashregister\_barcode shall invoke identify product to return the barcode to the calling function

Covers: HLR\_00500

Function: Cashregister\_barcode

DDR\_00550

Name: Cashregister\_barcode (idle)

Text: When a barcode has been read and the Cashregister is in the idle state, nothing should be done.

Covers: SYS\_00500

Function: Cashregister\_barcode

DDR\_00600

Name: startSession

Text: If a session is started, startsession shall empty the shopping basket data

Covers: HLR\_00600

Function: startSession

DDR\_00700

Name: Cashregister\_key

Text: Cashregister\_key shall store keystroke for manually entered barcodes

Covers: HLR\_00650

Function: Cashregister\_key

DDR\_00800

Name: countProducts

Text: countproducts shall update the database with an updated total count of each product scanned and placed in the product list

Covers: HLR\_00700

Function: countProducts

DDR\_00900

Name: Cashregister\_code

Text: When the code key is pressed, Cashregister\_code shall display the last product that was scanned

Covers: HLR\_00700

Function: Cashregister\_code

DDR\_01000

Name: generateTicket

Text: generateticket shall produce a list of all scanned items, their price and the total cost of the items

Covers: HLR\_00800

Function: generateTicket

DDR\_01100

Name: Start Cashregister

Text: Cashregister\_start shall ensure that the Cashregister application is in the active state

Covers: ?

Function: Cashregister\_start

DDR\_01125

Name: Start Cashregister

Text: Cashregister\_start shall be ignored if the session is already active

Covers: HLR\_00600

Function: Cashregister\_start

DDR\_01150

Name: Start Cashregister

Text: Cashregister\_start shall ensure that the barcode generation algorithm seed is returned to "zero"

Covers: HLR\_00600

Function: Cashregister\_start

DDR\_01200

Name: End Session

Text: endSession shall empty the shopping basket and update the HMI to reflect the empty basket

Covers: ?

Function: endSession

DDR\_01300

Name: Remove last product

Text: when a scanned product is removed from the list removelastproduct shall remove the last scanned product from the basket

Covers: HLR\_00900

Function: removeLastProduct

DDR\_01350

Name: Remove last product display

Text: when a scanned product is removed from the list removelastproduct shall display the removed product to the HMI

Covers: HLR\_00900

Function: removeLastProduct

DDR\_01400

Name: HMI start

Text: The cashregister application shall display HMI options to the user and capture user input

Covers: HLR\_01000

Function: main

DDR\_01450

Name: HMI exit

Text: The cashregister application shall allow a use to exit the HMI using the character 'q'

Covers: HLR\_01000

Function: main

DDR\_01500

Name: Get product count

Text: For a product in the shopping basket getcountedproduct shall return a product and its count

Covers: HLR\_00700

Function: Productdatabase\_getCountedProduct

DDR\_01600

Name: Count a product

Text: Given a product barcode Productdatabase\_getProduct shall store the count of a given product in the shopping basket

Covers: HLR\_00700

Function: Productdatabase\_getProduct

DDR\_01700

Name: Get product count

Text: For a given product index Productdatabase\_getSpecificCountedProduct shall provide the number of that given product in the shopping basket

Covers: HLR\_00700

Function: Productdatabase\_getSpecificCountedProduct

DDR\_01800

Name: Reset product counts

Text: Productdatabase\_resetCountedProducts shall initialise all product counts to zero

Covers: HLR\_00700

Function: Productdatabase\_resetCountedProducts

DDR\_01900

Name: Special offer

Text: For a given product and its associated special offer, Specialoffer\_getPrice shall recalculate the price of that product

Covers: ?

Function: Specialoffer\_getPrice

DDR\_02000

Name: Goodbye

Text: Goodbye shall inform the user via the UI that the cashregister application is terminating

Covers: HLR\_01300

Function: UI\_exit

DDR\_02200

Name: User interface input list

Text: UI\_help shall display all available options for the Cashregister user to the user interface

Covers: ?

Function: UI\_help

DDR\_02300

Name: User input parse nominal

Text: UI\_parse shall capture user inputs to perform cashregister activities

Covers: ?

Function: UI\_parse

DDR\_02350

Name: User input parse help

Text: If the cashregister UI receives any input not defined in the menu then it shall invoke UI\_help to guide the user

Covers: ?

Function: UI\_parse

DDR\_02400

Name: Print output line

Text: UI\_print shall print a provided line for printing to the printer

Covers: ?

Fonction: UI\_print

DDR\_02100

Name: Display output line

Text: UI\_show shall display a provided line for printing to the UI

Covers: ?

Function: UI\_show