

MCL-Technologies

Sample “Inventory_Demo” – Project Notes





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Overview

The purpose of this document is to provide an explanation for certain screens/related options concerning this application sample and to offer a few tips on *MCL-Designer V4* application development.

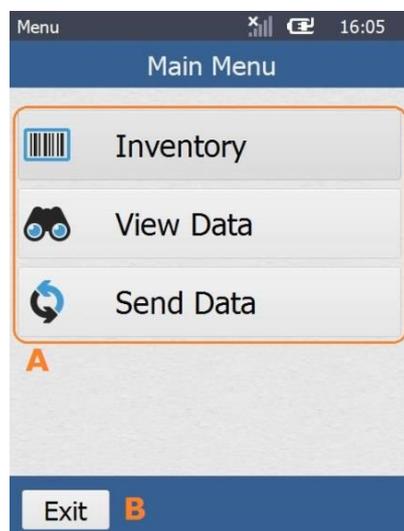
Project Description

This application sample consists of a simple inventory application that enables data capture, review, edition and deletion. This example illustrates:

- The standard use of an “Input Barcode” control (barcode reading tool).
- The filtering of data display in the “File Browse” control with the use of “Where” clauses.
- The “File Browse” as a search tool.
- Two data file uses - as a data source (*lookup* file type) or as a repository for captured data (*capture* file type).

Application Workflow

This is the first screen (*S:Main_Menu*).



It includes a “Menu Button” control **(A)**, where each of its button elements includes a “Go To” process triggered by an “On Click” event.

Each button element redirects the application’s workflow:

- **“Inventory”** – target screen is “S:Location” (the purpose is to define the location and, then, proceed with the inventory).
- **“View Data”** – target screen is “S:Review” (allows for the review of all inventoried items and/or a search per item or location).
- **“Send Data”** – target screen is “S:Send_Data” (the processes in charge of sending the file created by the data capture to *an MCL-Net* Host are associated to the screen itself and are triggered as soon as it opens. There is no device operator intervention required).

The screen also includes a “Button” **(B)** to exit the application (“Go to <Exit>”).



Instead of a “button” to redirect the application’s flow (with a *Branch* process), you can use a “Display Image” control.

“Inventory”

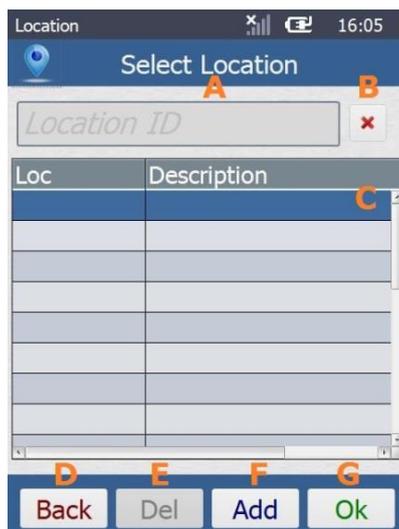
S:Location

This screen contains several controls for various purposes:

“Input Barcode” **(A)** - is used to select and filter the record(s) to be displayed in the “File Browse”. The user’s selection is saved into the “P_Location_ID” variable. Keyboard input is enabled.

“X” button **(B)** – Clears any data in the “Input Barcode” **(A)** control and uses the “Set State” process to disable the “Del” button **(E)**.

“File Browse” **(C)** – is used to display the data file records that were filtered in its “Query” tab using a “Where” clause (only field values that start the same way as the value of the “P_Location_ID” variable are displayed). The “File Browse” control’s “On Change” event contains a “Read a Record” process which reads the defined data file fields and uses the process “Set State” to enable the “Del” button **(E)** when a value (location) is selected from the list.



“Back” button **(D)** – includes 2 processes with different purposes:

The “Variable Assign” process is used to clear any entered data in the “Input Barcode” (the “P_Location_ID” variable is emptied).

The “Go to <Exit>” process returns you to the first screen (*S:Main_Menu*).



Since the redirection (in the *S:Main_Menu* screen) was executed via a “Menu Button” control (with Gosub” processes), this execution flow must end with a “Go to <Exit>”.

“Del” button **(E)** – Disabled until a value (location) is selected and displayed in the “File Browse” control **(C)**. Once enabled, it deletes the selected location from the source data file via the “Delete Record <Locations>, Current Record” process. The “Variable Assign” process ensures that the “P_Location_ID” variable is emptied

“Add” button **(F)** – is used to proceed to the *S:Edit_Location* screen.

The “Set Value” process is executed when you return from the *S:Edit_Location* screen (the “Back” button in *S:Edit_Location* contains a “Go to <Exit>”). The process is used to maintain the highlight on the value of the “P_Location_ID” variable that is displayed in the “Input Barcode” **(A)**.

“Ok” button **(G)** – includes a “Read a Record” process to read specific fields of the <Locations> data file and a “Gosub” process to proceed to the *S:Scan_Item* screen, once a location is selected.

The “Variable Assign” process ensures that, upon returning to the current screen from *S:Scan_Item*, the “P_Location_ID” variable is emptied.

Filter Example (*S:Location*)



The value entered in the “Input Barcode” is “02” so the “File Browse” displays all found data file records (<Locations>) that start with “02”.

By default, the highlight is on the first row of displayed data. Once you select one of the “File Browse” rows, you will be able to delete it from the source data file (the “Del” button is enabled), to edit its description (with the “Add” button) and to define it as the location for the inventory and proceed (via the “Ok” button).

The “Add” button can be used to edit a selected row but also to add a new location.

The “Ok” button is only enabled after you have selected a location for the inventory.

S:Edit_Location

This screen contains an “Input Barcode”, an “Input Keyboard” and several buttons. Their combined use enables the adding of a new location or the editing of an existing location.

“Input Barcode” **(A)** – the “Read a Record” process checks the existence or not of the entered data (location code) via a barcode read or keyboard input in the source data file <Locations>.

“X” button **(B)** – The “Variable Assign” and “Set Value” processes clear the entered data from the “P_Location_P” variable associated to the “Input Barcode” **(A)** and the control’s own temporary memory.

“Input Keyboard” **(C)** – Stores the data that was keyed in (location description) into the “P_Location_Name” variable.

“X” button **(D)** – The “Variable Assign” and “Set Value” processes clear the entered data from the “P_Location_Name” variable associated to the “Input Keyboard” **(C)** and the control’s own temporary memory.

“Back” button **(E)** – Since the current screen was called with a “Gosub” process, this control must include a “Go to <Exit>” for the workflow to lead to the screen it was called from (*S:Location*).

“Ok” button **(F)** – The “Test & Branch” and “Seek Record(s)” processes verify if the entered location already exists in the source data file (<Locations>) or is new and redirect the workflow to the appropriate label. The “LOC_ADD” label uses a “Write Record” process to add a new record to the source data file. The “LOC_UPDATE” label uses an “Update Record” process to update the corresponding record of the source data file.



S:Scan_Item

The combined use of the various controls included in this screen enables barcode reads, the display of each barcode read (Item name + quantity) and allows for the editing/deleting of selected reads.

“Display Header” (A;B) – Display the content of the “P_Location_ID” and “P_Location_Name” variables (selected location’s ID and name).

“Input Barcode” (C) – Stores the input data into the “P_Item_Number” variable.

“Input Keyboard” (D) – Stores the input data into the “P_Item_Quantity” variable. Has a default value of “1”.

“File Browse” (E) – is used to display filtered data file records from the <Inventory> data file. The filtered display is a result of the “Where” clause that was added to the “Query” tab (only the data file field values that are equal to the value of the “P_Location_ID” variable are displayed).

The “File Browse” control’s “On Change” event contains a “Read a Record” process (which reads the defined data file fields) and 2 “Set State” processes to enable the “Del” (G) and “Edit” (H) buttons when a “File Browse” row (a listed item) is selected.

“Back” button (F) – includes a “Go to <Exit>” process to return the application’s workflow to the *S:Location* screen.

“Del” button (G) – Disabled until a listed item is selected (“Test & Branch” process). It deletes the selected record from the <Inventory> data file via the “Delete Record” process and returns to a disabled state (“Set State” process).

“Edit” button (H) – It is enabled at the same time as the “Del” button (via the “Set State” process included in the “File Browse” (E)). It uses a “GoSub” to redirect the workflow to the *S:Edit_Item* screen.

“Ok” button (I) – the “Call Action” process ensures screen validation, meaning, it validates the processes added to the current screen with the purpose to write new records into the <Inventory> data file (ITEM_NEW label) and/or to update existing records (ITEM_UPDATE label).



Data Capture/Update Example (*S:Scan_Item*)

There are a few barcode reads on display in the “File Browse” control.



The second row is selected (“Item – 123456789/Qty 4”), so the “Del” and “Edit” buttons are enabled.

If you click “Del”, the data of the selected row is deleted from the “P_Location_ID”/“P_Item_Number” variables and the corresponding <Inventory> data file fields.

If you click “Edit”, you access the “S:Edit_Item” screen where you can edit the quantity of the selected item .

To input another barcode read, read the barcode or enter it via keyboard into the “Input Barcode” control and use the “Input Keyboard” to enter the corresponding quantity.

The values entered in this screen are stored in the “P_Item_Number” and “P_Item_Quantity” variables as well as in the capture type data file <Inventory>.

S:Edit_Item

This screen contains several controls with different purposes:

- To display variable content (“Display Header”, “Display Text”, “Input Keyboard” controls).
- To ensure the execution of processes added to the screen (“Button” control).
- To redirect the application’s workflow (“Button” control).



“Display Header” (A;B;C) – Display the content of the “P_Location_ID”, “P_Location_Name” and “P_Item_Number” variables (selected location’s ID name and item number).

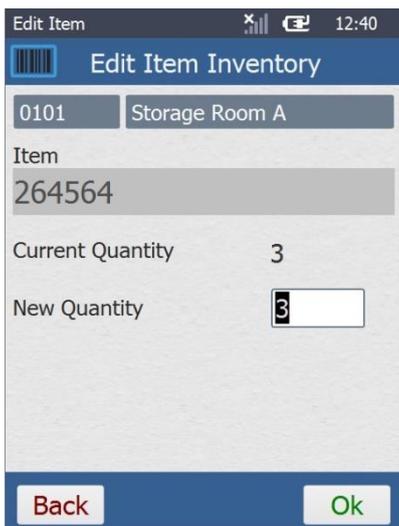
“Display Text” (D) – Displays the previously selected item’s current quantity (the value contained in the “P_Item_Quantity” variable).

“Input Keyboard” (E) –Is used to enter the new quantity which is stored in a variable (“P_Item_New_Qty”).

“Back” button (F) – Includes a “Go to<Exit>” to return the application to the *S:Scan_Item* screen.

“Button” (G) – the “Call Action” process ensures screen validation, meaning, it validates the processes added to the current screen with the purpose to update fields of the <Inventory> data file (“Update Record” process). The “Go to <Exit>” process redirects to the screen that called this one (*S: Scan_Item*).

Data Edit/Update Example (*S:Edit_Item*)



The screen displays the information regarding the previously selected item:

- The location’s ID and description (“0101”, “Storage Room A”).
- Item number and current item quantity (“264564”, “3”).

The default value displayed in the “New Quantity” option comes from the “P_Item_Quantity” variable (“3”).

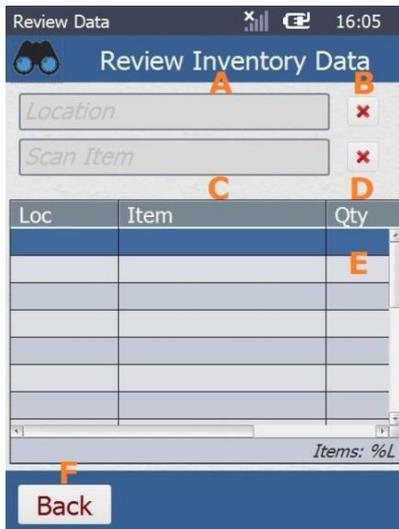
The new value is stored in the “P_Item_New_Qty” variable.

The corresponding data file fields of the <Inventory> data file are updated.

“View Data”

S:Review

This screen contains 2 “Input Barcodes” and a “File Browse”. Their combined use enables the search for specific data among a data file’s records (<Inventory>) and to only display the filtered records.



“Input Barcodes” (A, C) - are used to select and filter the record(s) to be displayed in the “File Browse” (E). The user’s selection is saved into the “P_Search_Location” and “P_Search_Item) variables.

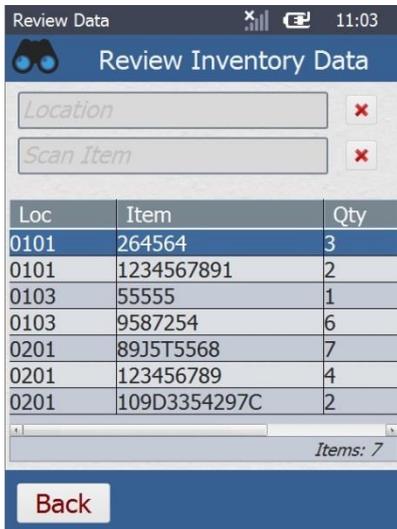
Keyboard input is enabled in both controls.

“X” button (B, D) – the “Variable Assign” and “Set Value” processes clear the entered data from the “P_Search_Location” variable associated to the “Input Barcode” (A), the “P_Search_Item” variable linked to the “Input Barcode” (C) and the temporary memory of both controls.

E - “File Browse” (E) – is used to display the data file records that were filtered in its “Query” tab using “Where” clauses (only field values that start the same way as the value of the “P_Search_Location” and “P_Search_Item” variables are displayed).

“Back” button” (F) – Since the current screen was called with a “Gosub” process, this control must include a “Go to <Exit>” for the workflow to lead to the screen it was called from (*S:Main_Menu*).

Record Search Example (*S:Review*)



Review Data 11:03

Review Inventory Data

Location [X]

Scan Item [X]

Loc	Item	Qty
0101	264564	3
0101	1234567891	2
0103	55555	1
0103	9587254	6
0201	89J5T5568	7
0201	123456789	4
0201	109D3354297C	2

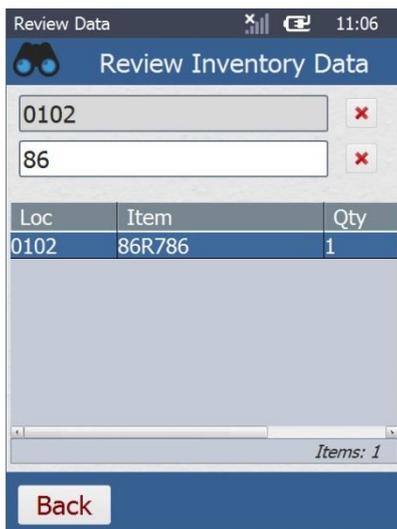
Items: 7

Back

When the screen is launched, the “File Browse” control displays all the records of the data file (<Inventory>) that has been receiving the inventoried data.

Once you enter a value in the “Input Barcode” controls, the “File Browse” control filters the available data and only displays the data file fields that begin with the entered values (“0102” and “86”).

The “File Browse” control’s footer refers the total number of list rows that is currently on display (%L).



Review Data 11:06

Review Inventory Data

0102 [X]

86 [X]

Loc	Item	Qty
0102	86R786	1

Items: 1

Back

The “X” buttons clear the entered data in the corresponding “Input Barcode”, meaning, they empty the variable associated to that “Input Barcode”.

This data cleanup leads to an unfiltered display (all data file records are available in the *File Browse*) and you can provide new filters.

“Send Data”

S:Send_Data

This screen does not require device operator intervention (unless an error occurs during data file verification and/or delivery). The processes added to the screen’s “On Ready” event are triggered when the screen is launched.

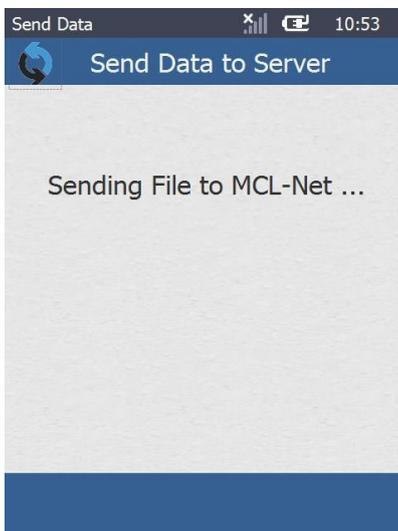
“On Ready” event of the “Screen”

The “File Check” process is used to check the <Inventory> data file and to redirect the workflow accordingly. If the data file contains records, the application’s execution proceeds to the “START_SEND_FILE” label.

The “START_SEND_FILE” label includes several processes:

- the “Variable Combine” process is responsible for the remote file’s name (“Inventory_” + “X_DATETIME_TIMESTAMP” system variable) and file format (“.dat”).
- the “Send File to Host” process sends the defined file to the intended Host.
- Following the successful file delivery, the label ends with a “Go to <Exit>” to return the workflow to the *S: Main_Menu* screen.
- the “Set State” process turns the “Completed” button into a visible screen element which provides another alternative to return to the *S: Main_Menu* screen.

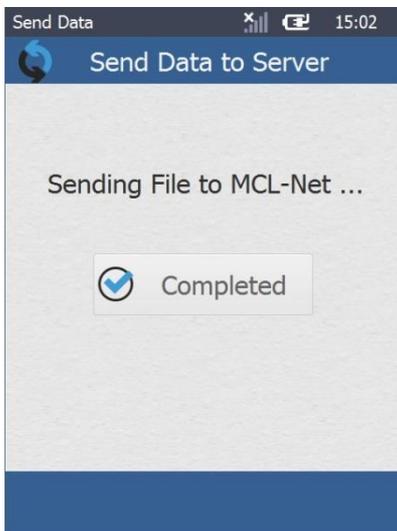
If the data file is empty or cannot be found, the workflow continues to the next execution line (a message box and the return to the “S:Main_Menu”).



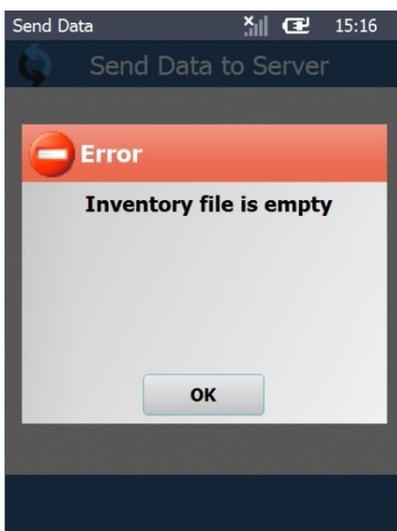
Instead of adding a “message box” and a “Go to” to redirect the workflow, you can use a customized message box that includes the appropriate destinations.

If there is a problem with file delivery, the application’s workflow proceeds to the “ERROR_COMMUNICATION” label. At this point, an error message box is displayed which provides workflow redirection options (repeating the “START_SEND_FILE” label processes or canceling/exiting the current screen and returning to the “S:Main_Menu”).

File Delivery to Host Example (*S:Send_Data*)

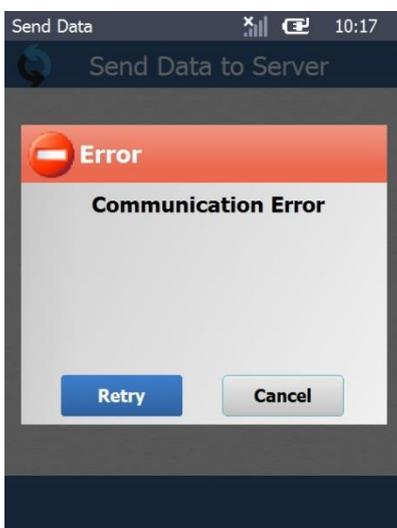


Once the screen is open, the processes added to its event are executed.



If the <Inventory> data file contains records, it will be sent to the intended MCL-Net host. Once this is successfully executed, a button becomes visible. This button includes a confirmation message and a “Go to <Exit>” process to return the device operator to the previous screen (*S:Main_Menu*). The device operator is not required to click it because the screen itself contains a “Go to <Exit>” process that, in case of file delivery success, eventually returns the application’s workflow to the “S:Main_Menu” screen.

If the <Inventory> data file does NOT contain records or cannot be found, an error message box is called. The device operator must click “OK” so that the application’s execution continues to the next line (“Go to <Exit> process”).



If a communications error occurs, a customized error message box is displayed (with the possibility to retry or cancel the data file delivery).