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# Introduction

This document is created to address the automation framework for IMPACT tools using test complete. It will guide you how to setup, how to run, how to add test case and how to use the function

# Setup and Run

Description: The framework is designed mainly following “Data Driven framework” which using excel file or CSV files to store the data. Besides that, modules and complex function are also applied into the framework

Precondition: Make sure your computer has test complete version 14.x and Impact 12.3 are installed in the machine

## Components required:

1. ClearAll.bat

* Double click the file to clear the log file before starting new test. This step is required if there is a log file created from last run

1. TestSet.txt

* This file will allow you to choose the project you want to execute the testcase by uncomment in line (remove character “;” in front of the project you want to run). Currently we have 4 projects available to run (List Edit, Adv OCR, Parten Sort Tool and Pinpoint Pattern Find). You allow to choose one project to run only per session if you enable this option
* To run all projects, uncomment “Run\_Project\_Suite” option. The order of project run will be configured in Test complete

1. RunAll.bat

* Double click the file to execute the test

1. Excel/CSV file

* For excel file, it requires one file with 3 sheets (TestSteps, TestData and Expected Output)
* For CSV, it requires 3 file different name TestSteps.csv, TestData.csv and ExpectedOutput.csv

1. Setup.py

* This file includes all function related to the test

1. Main.py

* This file is main file to connect between excel/csv files and functions to execute the test. This file is design for every specific project and be able to adjust base on the requirement of project

Config and run:

1. Set project to run in TestSet.txt (Please see more in part #2. Components required)
2. Set testcase to run

* Open Teststep.csv or TestSteps sheet in excel file
* Find Column “Run Test” put “Y” if you want to execute that testcase, put “N” if you don’t want to execute that testcase
* Save and close file.

1. Double click ClearAll.bat if there is a log file created from last run
2. Double click RunAll.bat to execute the test

Note:

* This does not require to open test complete if user run by RunAll.bat. Otherwise the test will fail to execute
* All test data (excel file and csv files) must be closed before running
* User can run the test directly from Test Complete tool

# How to add testcase

The structure of testcase will require 3 parts of designing also map with the excel/csv file designed:

1. TestSteps: Describe step by step in the testcase. The steps will follow in columns and read from column 0-> n; it ignores the column that don’t have data and go to the column that content data.
2. TestData: Input Data. The parameters in TestSteps and the function for checkpoint will be added here. This sheet/file work in group and you are required to correct data in group as it described.

Ex: Function Setup\_LoadImage(ImageName)

Value of ImageName(ex: Sample OCR) is required to input data in Sheet/file “TestData”, column 2 (Data\_LoadImage)

1. ExpectedOuput: output expected for every testcase, it also consistent with TestData. The value of test expected output also work in group like TestData

**Here is an example explain how to add testcase into excel/csv file base on testcase in jazz:**

**ListEdit\_UseCase20\_258:** Verify Output1, Output 2, Input 1 display correctly when Take a specific index from String List and Append to List

**Test steps:**

1. Setup a tool has value "String List" (e.g: Data Instance, Data Take, Data Set or any tool)  
2. Drag and drop "List Edit" under Logic drawer to vp file, go to properties tab/Setup tab  
3. Select " String List" at "Input 1"  
4. Get " String List" value from tool at step 1 and set to "Input 1"  
5. Input an index value to "Input 1 Index"  
6. Input an element for "Input 1 Length"  
7. Select " Take" at "Input 1 Action"  
8. Select "String List" at "Input 2"  
9. Select "Append" at "Input 2 Action"  
10. try to input index to "Input 2 Index"  
11. Select "Input by Reference" = True  
12. Drag and drop any tool can contain value from Output 2 (e.g: Data Instance, Data Set, String Parse, String builder or any tool)  
13. Get data from output 2 of "List Edit" tool  
14. Click Run/Trigger at current/Trigger Once

**Expected Output:**

Output 1, Input 1: Selected elements in list is removed, this behavior is also updated at get data source of Input 1  
Output 2: Selected index and length of Input1 are appended to end of list of output2 correctly  
Step14: Get data from Output 2 correctly  
Results/Outputs are same when performed in Setup tab or Property tab

**Mapping Testcase into excel/csv file:**

Note: Please prefer Function to understand the meaning of function and from that choose the one is suitable for your testcase

**Explain:**

Id: ID number, it must be same ID number for same testcase in every file/sheet

TestID: TestID which matches in Jazz and it requires to be same testID for same testcase in every file/sheet

**TestSteps:**



Step1-step4: Recondition: Before doing the test, it requires to have VPM opened with Images are loaded and new .vp file is created

Step5: Setup\_AdvOCR: Setup a tool has value "String List". To create a “string list” I will train an OCR font library then get that string and create a string list

Step6, 11: Setup\_LoadTool2: Drag and drop "List Edit" under Logic drawer to vp file

Step7, 8: Setup\_LEPanel and Setup\_LEInput1: go to Setup panel then Select " String List" at "Input 1",

Step9: Setup\_LELinkPort - Link String port with output string

Step10: Setup\_LEInput2 – config for input 2

Step12: Setup\_LEPanel – Go to Setup panel

Step13: Setup\_LEInput1Extend – config for input 1 of List Edit 2

Step14: Setup\_LELinkLEResults – Link Output 2 of List Edit 1 to List Edit 2

Step15: Setup\_LEInput2Extend – Config for input 2 of List Edit 2

Step16: Setup\_VPMPropertiesTab – Go to Properties Tab

Step17: Setup\_LEInputByPreferenceProperty – config the value for “Input by reference” port

Step18: Setup\_VPMAdvSetupTab - Go back to setup tab

Step19: Setup\_VPMtriggerOne – Trigger one

Step20: Setup\_CheckPoint – do check for the test

Step23: Setup\_LEReset – Click on Reset button on Setup tab

Step24: Setup\_VPMPropertiesTab – go to Properties tab

Step26: Setup\_LERunPro – Click on Run button in properties tab

Step27: Setup\_CheckPointPro – do check for the test in properties tab

Step28: Setup\_LEErrorConfirmPro- confirm error dialog

Step29: Setup\_closeVPM - close VPM

Run Test: Y/N: Enable/Disable the test to run

**Testdata:** 

* Data\_LoadImage: Because in TestSteps we have called function “Setup\_LoadImage(ImageName)” so the value of parameter “ImageName” is required to input in this column
* Data\_LoadTool: Same as above, the TestSteps called the function “Setup\_LoadTool2(name)” so the value of parameter “ImageName” is required to input in this column. There are 2 columns for this, please prefer “Address” in Function bellow to know where to put the parameter
* Data\_LoadPanel: the TestSteps called the function “Setup\_LEPanel(panel)” so the value of parameter “panel” is required to input in this column
* Data\_Input1: the TestSteps called the function “Setup\_LEInput1(type, action, index, length) so the value of parameter “panel” is required to input in these columns
* Data\_LinkPort: the TestSteps called the function “Setup\_LELinkPort (item) so the value of parameter “item” is required to input in these columns
* Data\_Input2: the TestSteps called the function “Setup\_LEInput2(type, action, index) so the value of parameters are required to input in these columns
* Data\_Checkpoint: the TestSteps called the function “Setup\_CheckPoint (), this function include a list of function check and only execute the check for input data which listed in the file.
* Data\_LinkPort1: the TestSteps called the function “Setup\_LELinkPort1 (item) so the value of parameter “item” is required to input in these columns
* Data\_TriggerOne: the TestSteps called the function “Setup\_VPMtriggerOne(time) so the value of parameter “time” is required to input in these columns
* DataInput1Extend: the TestSteps called the function “Setup\_LEInput1Extend(type, action, index, length)so the value of parameters are required to input in these columns
* Data\_Input2Extend: the TestSteps called the function “Setup\_LEInput2Extend(type, action, index)so the value of parameters are required to input in these columns
* Data\_Number/Data\_InputByPreference: the TestSteps called the function “Setup\_LEInputByPreferenceProperty (value)so the value of parameters are required to input in these columns
* Data\_CheckPointPro: the TestSteps called the function “Setup\_CheckPointPro (), this function include a list of function check and only execute the check for input data which listed in the file.

**ExpectedOutput:**



In TestData, we have called the check of function bellow:

CheckInput1, CheckOutput1, CheckOutput2, CheckInput1Detail, CheckOutput1Detail

The value will follow the address as description in “CheckPoint” section

**Note:** Depend on the way we design the test case we can design database to be suitable with our test. The example above is an example of designing and it can be changed anytime to make it easier to manage

# Function

## VPM

|  |  |
| --- | --- |
| function | Explain |
| Setup\_InnitializeVPM | Check if VPM Frame still existing on Desktop and close it before starting new test |
| EnviromentCheck | Check if the environment is ready to run the test or not. If not, user should reinstall the VPM with fresh install manually |
| Setup\_loadVPM | Open VPM |
| Setup\_closeVPM | Close the VPM frame |
| VPM\_CameraCheck | Check if Camera setting for run online mode is enabled or not, if not enable online mode with trigger period 1000 |
| Setup\_VPMSizeCheck | Check if the VPM size is default or not |
| Setup\_VPMRunOnline(count) | This function to set run count time for VPM when it is online mode. The function requires input of parameter in “Data Sheet”  Ex: Setup\_VPMRunOnline(30)  Run Online and step when run count =30 |
| Setup\_VPMNewButton | Click new button to create new .vp file |
| Setup\_VPMResetButton | Click Reset button |
| Setup\_VPMRunOnceCurrent | Click Run one on current image |
| Setup\_VPMOnlineButtonEnable | Enable Online button |
| Setup\_VPMOnlineButtonDisable | Disable online button |
| Setup\_VPMContinousButtonEnable | Click start continuous trigger |
| Setup\_VPMContinousButtonDisable | Click stop continuous trigger |
| Setup\_VPMtriggerOne | Click Trigger One |
| Setup\_VPMRunModeEnable | Enable Run Mode |
| Setup\_VPMRunModeDisable | Disable Run Mode |
| Setup\_VPMSaveButton | Click on Save Button |
| Setup\_VPMSaveAsButton | Click on Save As Button |
| Setup\_VPMDisconectReconectDevice | Discover/Connect button |
| Setup\_VPMUnloadProgram | Unload Program |
| Setup\_ZoomButtonPropertiesTab | Zoom Image in properties tab |
| Setup\_VPMAdvSetupTab | Click on Setup tab |
| Setup\_VPMPropertiesTab | Click on VPM/properties tab |
| Setup\_VPMLinkSumaryTab | Click on VPM/Link Summary Tab |
| Setup\_VPMInfoTab | Click on VPM/Info tab |
| Setup\_LoadImages(image1, image2) | Load Image with parameters  Image1: First image name you want to pickup  Image2: Image n in continuous line  Ex: Image1=”"Sample Pattern Sort - 01 Fail", image2= "Sample Pattern Sort - 10 Fail" |

## CPM

|  |  |
| --- | --- |
| function | Explain |
| Setup\_InnitializeCPM | Check if CPM Frame still existing on Desktop and close it before starting new test |
| Setup\_LoadCPM | Open CPM |
| Setup\_closeCPM | Close CPM |
| Setup\_EnableRunMode | Enable Run Mode in CPM |
| Setup\_DisableRunMode | Disable Run Mode in CPM |
| Setup\_CPMSaveAs(name) | Save Image with name in CPM. Input name is required  Ex: Setup\_CPMSaveAs(“test”)  Save .cp file with name “test” |
| Setup\_CPMLoadFile(name) | Load File with file name in CPM. Input name is required |
|  |  |

## AdvOCR tool

|  |  |
| --- | --- |
| function | Explain |
| Setup\_OCRValue | The function to click on the OCR segment to be able to label and train. This will be calculated based on the point return on the VPM and work perfect with default size (To have default size, install VPM with fresh install) |
| Setup\_AdvTrainButton | Click to Train Button in AdvOCR tool |
| Setup\_AdvAddChacterBox | Click to Add Character Box button in AdvOCR tool |
| Setup\_AdvAutoSegment | Click to auto segment button in AdvOCR tool |
| Setup\_AdvSegmentNewLine | Create Segment new line in AdvOCR tool |
| Setup\_VPMOCRFontLibraryTab | Click on AdvOCR Font Library tab |
| Setup\_TrainButtonPropertiesTab | Train AdvOCR in Properties tab |
| Setup\_LinkButtonGeneralPanel | Link Button in General Panel/ AdvOCR tool |
| Setup\_VPMOCRFontLibraryTabRunMode | Click on OCR Font Library tab while it’s in run mode |
| Setup\_VPMDisplayPanel | Click on Display panel of Adv OCR tool |
| Setup\_VPMVerificationPanel | Click on Verification panel of Adv OCR tool |
| Setup\_VPMTrainPanel | Train panel – Adv OCR tool |
| Setup\_VPMSearchPanel | Search panel – Adv OCR tool |
| Setup\_GeneralPanel | General Panel – Adv OCR tool |
| Setup\_MethodPanel | Method Panel – Adv OCR tool |
| Setup\_ROIPassFailPanel | ROI Pass/Fail Panel – Adv OCR tool |
| Setup\_OCRClicktoTrain | Click to a point in Character box to able to highlight the box |
| Setup\_AdjustROI | Adjust ROI (This action requires default setting, otherwise it doesn’t work. To be able to work need to modify the passion to fit with the size) |
| Setup\_OCRDeleteRegionROI | Delete Region ROI (This action requires default setting, otherwise it doesn’t work. To be able to work need to modify the passion to fit with the size) |
| Setup\_OCRImages | Load AdvOCR image |
| Setup\_OCRImageMultiText | Load OCR Image with multi text |
| Setup\_AdvOCR | # Load AdvOCR tool and Train OCR without Search ROI |
| Setup\_AdvOCREmpty | Load AdvOCR tool, delete Search ROI, and go to Train Panel |
| Setup\_VPMTrainPanel | Go to Train Panel |
| Setup\_AdvNotTrain | # Load AdvOCR tool, delete Search ROI, create segment, label them but do not train |
| Setup\_AdvOCRManual | #Load AdvOCR tool and Train OCR with Search ROI |
| Setup\_DrawROI | Create ROI in Display Cavas (This step requires correct size of VPM, if not reinstall VPM with default size or change the position to fit with the new size) |
| Setup\_DrawROISmall | Create small ROI in Display Cavas (This step requires correct size of VPM, if not reinstall VPM with default size or change the position to fit with the new size) |
| Setup\_RotateROI | Rotate ROI in small ROI (This step requires correct size of VPM, if not reinstall VPM with default size or change the position to fit with the new size) |
| Setup\_DragAvdToTaskTree | Load AdvOCR tool |
| Setup\_LinkOCRFontLibrary | Link OCR Font Library in properties tab |
| Setup\_LinkOCRFontLibrarySetupTab | Link OCR Font Library in Setup tab |
| Setup\_LinkSegmentation | Link Segmentation in Properties tab |
| Setup\_LinkTrainCharacterBox | Link Train Character Box in properties tab |
| Setup\_OCROutOfImage | Move ROI to out of image (This step requires correct size or modify new position to fit with the size) |
| Setup\_CorrectROI | Move ROI from Out of Image to correct position (This step requires correct size or modify new position to fit with the size) |
| Setup\_OCRClickGreenROI | Click on green ROI |
| Setup\_OCRReset | Reset OCR Font Library |
| Setup\_DisableTypeOption | Disable Type Option in CPM - AdvOCR tool |
| Setup\_DisableTypeText | Disable Type Text in CPM - AdvOCR tool |
| Setup\_DisableSegmentNewLine | Disable Segment New Line in CPM – AdvOCR tool |
| Setup\_DisableAutoSegment | Disable Auto Segment in CPM – AdvOCR tool |
| Setup\_DisableAddCharacterBox | Disable Add Character Box in CPM – AdvOCR tool |
| Setup\_DisableTrainButton | Disable Train Button in CPM – AdvOCR tool |
| Setup\_DisableOCRFontLibrary | Disable OCR Font Library in CPM – AdvOCR tool |
| Setup\_DisableFontLibraryDisplay | Disable Font Library Display in CPM – AdvOCR tool |
| Setup\_DisableSegmentation | Disable Segmentation in CPM – AdvOCR tool |
| Setup\_DisableSearchImage | Didable Search Image in CPM – AdvOCR tool |
| Setup\_EnableTypeOption | Enable Type Option in CPM – AdvOCR tool |
| Setup\_DisableTrainPrompt | Disable Train Prompt in CPM – AdvOCR tool |
| Setup\_EnableTypeText | Enable Type Text in CPM – AdvOCR tool |
| Setup\_EnableSegmentNewLine | Enable Segment New Line in CPM – AdvOCR tool |
| Setup\_EnableAutoSegment | Enable Auto Segment in CPM – AdvOCR tool |
| Setup\_EnableAddCharacterBox | Enable Add Character Box in CPM – AdvOCR tool |
| Setup\_EnableTrainPrompt | Enable Train Prompt in CPM – AdvOCR tool |
| Setup\_EnableTrainButton | Enable Train Button in CPM – AdvOCR tool |
| Setup\_EnableOCRFontLibrary | Enable OCR Font Library in CPM – AdvOCR tool |
| Setup\_EnableFontLibraryDisplay | Enable Font Library Display in CPM – AdvOCR tool |
| Setup\_EnableSegmentation | Enable Segmentation in CPM – AdvOCR tool |
| Setup\_EnableSearchImage | Enable Search Image in CPM – AdvOCR tool |
| Setup\_CopyPasteOCRFontLibrary | Copy and Paste OCR Font library in CPM task tree to the panel |
| Setup\_CopyPasteTrainButton | Copy and Pate Train Button in CPM task tree to the panel |
| Setup\_OCRCPMDeletePattern | Delete one OCR Pattern in CPM |
| Setup\_OCRCPMDeleteAllPattern | Delete all OCR pattern in CPM |

## Pattern Sort Tool

|  |  |  |  |
| --- | --- | --- | --- |
| function | Explain |  |  |
| Setup\_LoadPSTImages | Load PST image |  |  |
| Setup\_DragPatternSortToTaskTree | Load PST tool |  |  |
| Setup\_PSTTrainPanel | Go to PST train panel |  |  |
| Setup\_PSTLoadDB(foldername) | Load database. Folder contains PST database is required for input data  To make it works correctly, please go to “../PatternSortingTool/MappedDriverSetting.txt” to config the location for PST database  Ex: Setup\_PSTLoadDB(“test”)  Load db with name test.pdb |  |  |
| Setup\_PSTLoadDBSet(foldername, option) | Load database with parameters: folder name and option “cancel” or “load”.  Parameters:  option = “load”: Load with input name  option = “cancel”: input name but click cancel after all  option = “None”: do nothing  foldername = “None”: Click on load button only  To make it works correctly, please go to “../PatternSortingTool/MappedDriverSetting.txt” to config the location for PST database  Ex1: Setup\_PSTLoadDB(None, “cancel”)  Click cancel button only  Ex2: Setup\_PSTLoadDB(“test”, “cancel”)  Load db”test.pdb” then cancel |  |  |
|  |  |  |  |
| Setup\_PSTNewDBSet(name, option) | Create new BD with parameters:  name: name of db  option = “create”: create new db with input name  option = “cancel”: input valid name but click cancel after all  To make it works correctly, please go to “../PatternSortingTool/MappedDriverSetting.txt” to config the location for PST database  Ex: Setup\_PSTNewDBSet(“testPST”, “create”)  Create a new db name “testPST” |  |  |
| Setup\_PSTNewDB | Click on new Db button |  |  |
| Setup\_PSTNameDB(name) | Input name for new DB  Ex: Setup\_PSTNameDB(“test”)  Name DB as “test” |  |  |
| Setup\_PSTCancelNameDB | Click cancel when create new DB |  |  |
| Setup\_PSTPasteToTaskTree | Paste PST tool to task tree |  |  |
| Setup\_PSTAddButton | Click on Add button |  |  |
| Setup\_PSTCoppyPatternSort1 | Copy PST tool |  |  |
| Setup\_PSTOriginSetting | Setup Origin in PST tool (It requires correct size or modify the position to fit with the size) |  |  |
| Setup\_PSTResizeROI | Resize, modify the ROI (It requires correct size or modify the position to fit with the size) |  |  |
| Setup\_PSTAddROI | Add another ROI in Display cavas panel (It requires correct size or modify the position to fit with the size) |  |  |
| Setup\_PSTDeleteROI | Delete ROI (It requires correct size or modify the position to fit with the size) |  |  |
| Setup\_PSTDBPanel | Go to Database panel |  |  |
| Setup\_PSTDeletePattern | Delete one pattern in PST tool |  |  |
| Setup\_PSTAddLabel(panel, label) | Add label with option panel “train” or “db”  Label=”train”: add label in train panel  Label=”db”: add label in Database panel  Ex: Setup\_PSTAddLabel(“train”, “abc”)  Add label “abc” in “Train” panel |  |  |
| Setup\_PSTAddInfo(panel, info) | Add info with option panel “train” or “db”  info=”train”: add label in train panel  info=”db”: add label in Database panel  Ex: Setup\_PSTAddInfo(“bd”, “abc”)  Add Info “abc” in “Database” panel |  |  |
| Setup\_PSTCheck | Check if the database name “test” is existing in folder PST or not. If it is existing, do nothing, otherwise it copies whole folder PST from source to replace the PST folder (Apply if run on localhost). For remote option it’s better to copy manually |  |  |
| Setup\_PSTAdjustROI | Adjust ROI |  |  |
| Setup\_PSTMaxNumberOfKeypoint(numberofkeypoint) | Input setting for max number of key points  Ex: Setup\_PSTMaxNumberOfKeypoint(4)  Set Max Number Of Keypoint is 4 |  |  |
|  |  |  |  |
| Setup\_PSTDownSamplingRatio(tab, numberofdownsampling) | Input setting for down sampling ratio  Tab=”Edge Match”, “Texture” or “Contour”  Ex:Setup\_PSTDownSamplingRatio(“Edge Match”, 2)  Set Down Sampling Ratio value is 2 at Edge Match tab |  |  |
| Setup\_PSTSClusterPerKeypoint(option, numberofcluster) | Input number of cluster  Option =”cancel” or “ok”  “cancel”: input number then cancel after that  “ok”: go setting with number input  Ex:Setup\_PSTSClusterPerKeypoint (“Edge Match”, 2)  Set Down Sampling Ratio value is 2 at Edge Match tab |  |  |
| Setup\_PSTRetrainAll(panel, option) | Retrain all with option “cancel” or ”ok”  Ex: Setup\_PSTRetrainAll(“train”, “ok”)  Click retrain all at train panel |  |  |
| Setup\_PSTMode(mode) | Chose mode in train panel “Contour”, “Edge Match” or “Texture”  Ex: Setup\_PSTMode(“Contour”)  Set mode “Contour” in train panel |  |  |
| Setup\_PSTModeDB(mode) | Chose mode in Database panel “Contour”, “Edge Match” or “Texture”  Ex: Setup\_PSTModeDB(“Contour”)  Set mode “Contour” in database panel |  |  |
| Setup\_PSTAdvanceSet(panel, tab, numberofdownsampling, numberscale, numberofcluster, numberofkeypoint, maxdip, peakthreshold, upsample, maxduplicatepoint, option) | Setiting all option in advance  Panel =”train” or “db” or “None” (if panel =”None” click advance button only)  Tab=”Contour”, “Edge Match” or “Texture”  Option=”cancel” or “ok”  Input valid number to other option. Incase no option or don’t want to input that option just put “None”, it will ignore the option  Ex:  Setup\_PSTAdvanceSet(“train”, “Texture”, 1, 1,1, None, None, None, None, None, “ok”)  Set value in train panel for mode “Texture” |  |  |
| Setup\_PSTAutomode | Enable auto mode |  |  |
| Setup\_PSTPassFailPanel | Go to Pass/Fail panel |  |  |
| Setup\_PSTAddPatternImage(ImageName) | Add pattern Image with Image name parameters required |  |  |
| Setup\_PSTImport(name, option) | Import database with database name and option =”cancel” or” import”  To make it works correctly, please go to “../PatternSortingTool/MappedDriverSetting.txt” to config the location for PST database  Ex: Setup\_PSTImport(“test”, “import”) |  |  |
| Setup\_PSTExport(name, option) | Export database with database name and option =”cancel” or” export”  To make it works correctly, please go to “../PatternSortingTool/MappedDriverSetting.txt” to config the location for PST database  Ex: Setup\_PSTExport(“test”, “cancel”) |  |  |
| Setup\_PSTAddImage(name, option) | Add image with image name and option =”cancel” or”add”  To make it works correctly, please go to “../PatternSortingTool/MappedDriverSetting.txt” to config the location for PST database  Ex: Setup\_PSTAddImage(“Test.PNG”, “add”) |  |  |
| Setup\_PSTDeleteAllPatten | Delete all pattern |  |  |
| Setup\_PSTRunpropertytab | Click run button in properties tab |  |  |
| Setup\_PSTSort | Click sort button |  |  |
| Setup\_PSTDisplay(option) | Click display button with option required.  Option=True/False  Ex: Setup\_PSTDisplay(“True”)  Enable Display |  |  |
| Setup\_PSTDisplayTrainingModeROI(option) | Click display training mode ROI with option required. Input option same with option in the app |  |  |
| Setup\_PSTZoomin | Click Zoom In button |  |  |
| Setup\_PSTZoomOut | Click Zoom Out button  Setup\_PSTZoom100  Click Zoom 100% button |  |  |
| Setup\_PSTLinkDB | Link Database |  |  |
| Setup\_PSTMatchScore(option, score) | Setting match score with option = “None” or “True” or “False”  Score: number |  |  |
| Setup\_PSTMatchFraction(option, score) | Setting match Fraction with option = “None” or “True” or “False”  Score: number |  |  |
| Setup\_PSTMatchConfidence(option, score) | Setting match confidence with option = “None” or “True” or “False”  Score: number |  |  |
| Setup\_PSTEnableFailedMatch(option) | Setting Enable failed match with option = “None” or “True” or “False” |  |  |
| Setup\_PSTIndependentMatchScore(option, score) | Setting independent match score with option = “None” or “True” or “False”  Score: number |  |  |
| Setup\_PSTTrainProperties | Click train button in properties tab |  |  |
| Setup\_PSTLinkPatternDB | Link pattern database |  |  |
| Setup\_PSTRunButton | Click run button |  |  |
| Setup\_PSTResetButton | Click reset button |  |  |
| Setup\_PSTCPMDragDropPatternDBToPanel | Drag and drop pattern database to CPM panel |  |  |
| Setup\_PSTCPMNewDb(name, option) | Create new db with name and option in CPM  Name = “None” or a valid name  Option = “cancel” or “create”  To make it works correctly, please go to “../PatternSortingTool/MappedDriverSetting.txt” to config the location for PST database |  |  |
| Setup\_PSTCPMAddLabelInfo(button, label, info, mode, option) | Add label and info in CPM:  Button =”False” or “True”  Label=”None” or valid label name  Info==”None” or valid info  Mode=”Texture” or “Edge Match” or “Contour”  Option=”cancel” or “add” or “None” |  |  |
| Setup\_PSTCPMAdvanceSet(panel, tab, numberofdownsampling, numberscale, numberofcluster, numberofkeypoint, maxdip, peakthreshold, upsample, maxduplicatepoint, option) | Setiting all option in advance - CPM  Panel =”train” or “db” or “None” (if panel =”None” click advance button only)  Tab=”Contour”, “Edge Match” or “Texture”  Option=”cancel” or “ok”  Input valid number to other option. Incase no option or don’t want to input that option just put “None”, it will ignore the option |  |  |
| Setup\_PSTCPMRetrainAll(option) | Click train all button in CPM with option = “cancel” or “ok” |  |  |
| Setup\_PSTCPMUpdateMode(mode) | Update mode in CPM  Mode=”Texture” or “Edge Match” or “Contour” |  |  |
| Setup\_PSTCPMLoadDB(name, option) | Load database in CPM  Name=”None” or an valid database name  Option=”cancel” or “load” |  |  |
| Setup\_PSTCPMDeletePattern | Delete one pattern in CPM |  |  |
| Setup\_PSTCPMAddImage(name, option) | Add image in CPM  Name=”None” or and valid image name  Option=”cancel” or “add” |  |  |
| Setup\_PSTCPMDeleteall | Delete all pattern in CPM |  |  |
| Setup\_PSTCPMExportDb(name, option) | Export database with database name and option =”cancel” or” export” in CPM  To make it works correctly, please go to “../PatternSortingTool/MappedDriverSetting.txt” to config the location for PST database |  |  |
| Setup\_PSTCPMImportDb(name, option) | Import database with database name and option =”cancel” or ”import”  To make it works correctly, please go to “../PatternSortingTool/MappedDriverSetting.txt” to config the location for PST database |  |  |
| Setup\_PSTCPMSort(option) | Click sort button in CPM |  |  |
| Setup\_PSTCPMPoint(option) | click point button with option is required in CPM |  |  |
| Setup\_CPMRename(name) | Rename PST tool |  |  |
| Setup\_CPMCopyItem(item) | Copy item in CPM |  |  |
| Setup\_CPMPasteItem(item, name) | Paste item name to destination |  |  |
| Setup\_CPMDeleteItem(item) | Delete item |  |  |
| Setup\_CPMCollaspItem(item) | Collapse item in CPM |  |  |

## List Edit Tool

|  |  |
| --- | --- |
| function | Explain |
| Setup\_ListEdit | Load List Edit tool |
| Setup\_LEPanel(name) | Select List Edit panel  name=”Setup” or “Display” |
| Setup\_LEInput1(type, action, index, length) | Select options for Input 1  Type=”None” valid type  Action=”None” or valid action  Index=”None” or valid index  Length=”None” ore valid length  Address: Column 6->9  Ex: Setup\_LEInput1(Image, Read, 1, None)  Set input 1 with Image type, action is read, index=1 and length is not setting |
| Setup\_LELinkImageList | Link Image List |
| Setup\_LELinkImage | Link image |
| Setup\_LELinkBlob | Link Blob |
| Setup\_LELinkLEResults(item) | Link List Edit Result  Item=”None” or valid item |
| Setup\_LELinkRunCountList | Link Run Count List |
|  |  |
| Setup\_LELinkOCRFontLB | Link OCR Font Library |
| Setup\_LELinkOCRFieldDefinition | Link OCR Field Definition |
| Setup\_LELinkOCRSpaceModel | Link OCR Space Model |
| Setup\_LELinkOCRVerificationParams | Link OCR Verification Params |
| Setup\_LELinkItem(item) | Link Port  Item=”None” or valid port such as “Run Count”, "Line Segment", "Output Origin Relative To RWC",… |
| Setup\_LELinkPatternModelList | Link Pattern Model List |
| Setup\_LEOrigin | Setup Origin data: load Origin tool, Chose method |
| Setup\_LoadTool(name1, Name2): | Load 2 tools with 2 parameters at the same time  Name="List Edit" or "Line Find", "Origin", "Blob", "Pattern Find", "Calibration"…  Address: TestData/Columns 3, 4  Ex: LoadTool(Origin, List Edit) |
| Setup\_LoadTool1(name): | Load tool with parameter:  Name="List Edit" or "Line Find", "Origin", "Blob", "Pattern Find", "Calibration",  Address: TestData /Column 3(Data\_LoadTool)  Ex: LoadTool1(List Edit) |
| Setup\_LoadTool2(name): | Load tool with parameter:  Name="List Edit" or "Line Find", "Origin", "Blob", "Pattern Find", "Calibration",  Address: TestData /Column 4(Data\_LoadTool)  Ex: LoadTool2(Line Find) |
| Setup\_LEInput2(type, action, index) | Select options for Input 2  Type=”None” valid type  Action=”None” or valid action  Index=”None” or valid index  Address: TestData/Column 11-13(Data\_Input2)  Ex: Setup\_LEInput2(Boolean, Take, 1)  Set input 2 with type Boolean, action take and index = 1 | |
| Setup\_LEInputByPreferenceProperty(option) | Input by preference  Option=”True” or “False”  Address: TestData/Columns 32(Data\_InputByPreference)  Ex:  Setup\_LEInputByPreferenceProperty(“True”)  Set Input By Preference value = True | |
| Setup\_LoadApplication(name) | Load application  Name=”VPM” or “CPM” | |
| Setup\_LoadImage(ImageName) | Load image with parameters, apply for image list start with – “01 Fail" and end with “10 Fail"  ImageName=”Sample Pattern Sort” or others list which valid start, end condition  Address: TestData/Column 2(Data\_LoadImage)  Ex:Setup\_LoadImage(Sample Pattern Sort) | |
| Setup\_LoadImage1(ImageName) | Load image with parameters, apply for image list start with – “01 Pass" and end with “10 Fail"  imageName=”Sample Bulb” or others list which valid start, end condition  Address: TestData/Column 2(Data\_LoadImage)  Ex:Setup\_LoadImage(Sample Bulb) | |
| Setup\_VPMtriggerOne(time) | Set Trigger One with number of trigger time  Time=0->n;  Address: TestData/Column 24(Data\_TriggerOne)  Ex: Setup\_VPMtriggerOne(10)  Click Trigger One 10 time |
| Setup\_PFCreateModel(number, time) | Create model in Pattern Find tool  Number: valid number in Model Selection  Time: number of train time  Address: TestData/Column 32, 33(Data\_Number and Data\_Time)  Ex: Setup\_PFCreateModel(3, 3)  Create 3 different models with 3 trigger time |
| Setup\_LEReset | Click reset button in Setup tab |
| Setup\_LERun | Click run button in setup tab |
| Setup\_LEInput1ActionPro | Input action “Read” in properties tab |
| Setup\_LEInput1IndexPro | Input index with value=1 in properties tab |
| Setup\_LEInput1LengthPro | Input length with value=1 in properties tab |
| Setup\_LEInput2ActionPro | Input action “Write” in properties tab |
| Setup\_LEResetPro | Click on reset button in properties tab |
| Setup\_LERunPro | Click on Run button on properties tab |
| Setup\_LEDeleteLinkPro | Delete link in input1 properties tab |
| Setup\_LEErrorConfirmPro | Confirm error if invalid index or out of value message show up |

## Pinpoint Pattern Find Tool

|  |  |
| --- | --- |
| function | Explain |
| Setup\_PPCheck | Check to see whether the .vp is available for test or not. If not, it will copy from Source to destination |
| Setup\_PinpointPatternFindImages | Load PP image |
| Setup\_LoadPinpointPatternFind | Load PP tool |
|  |  |
| Setup\_TrainROIPinpointPatternFind | Train Button in Pinpoint Pattern Find tool |
| Setup\_DrawROIPinpointPatternFind | Create a ROI in PP |
| Setup\_PinpointPatternSetupTab | Go to setup tab |
| Setup\_PinpointPatternFindPropertyTab | Go to Properties tab |
| Setup\_PPLinkPatternModel | Link Pattern Model in PP |
|  |  |
|  |  |
| def Setup\_CPMExpandItem(item): | Expand item in CPM |
| Setup\_CPMRenameItem(item, name) | Rename item in CPM |
| Setup\_CPM\_ModifyItem(item, row, colunm, value) | Modify item in CPM  Item=”None” or valid item  Row=valid row  Column=valid column  Value=valid value |

## Other Tools

|  |  |
| --- | --- |
| function | Explain |
| Setup\_VPMOrigin | Load Origin tool |
| Setup\_Calibration | Load Calibration tool |
| Setup\_ApplyCalibration | Load Apply Calibration tool |
| Setup\_CaLinkImage | Link calibration info |
| Setup\_CaLinkOutputImage | Link Output Image from Calibration tool |
| Setup\_CaCalibratePanel | Calibrate image with pixel 7000 |
| Setup\_ImageArchive | Load Image Archive tool |
| Setup\_IMADestinationPanel | Go to Destination panel of Image Archive tool |
| Setup\_IMALinkImage | Link Image from Image Archive tool |
| Setup\_LoadPatternFind | Load Pattern Find Tool |
| Setup\_PFTrainROIPanel | Go to Train ROI panel – Pattern Find tool |
| Setup\_PFTrainButton | Click Train button – Pattern Find tool |
| Setup\_Blob | Load Bold tool |
| Setup\_LineFind | Load Line Find tool |
|  |  |

## File and System, I/O

|  |  |
| --- | --- |
| function | Explain |
| Setup\_DeleteFile(path) | Delete file with input path name. Input path is required |
| Setup\_PSTDeleteFoder(foldername) | Delete folder with parameter is folder name |

## CheckPoint

|  |  |
| --- | --- |
| function | Explain |
| CheckInput1 | Check number of elements in input 1  Address: ExpectedOutput/Column 2 |
| CheckOutput1 | Check number of elements in output 1  Address: ExpectedOutput/Column 4 |
| CheckOutput2 | Check detail value of Output 2  Address: ExpectedOutput/Column 6->15 |
| CheckInput1Detail | Check detail value of Output 2  Address: ExpectedOutput/Column 29->39 |
| CheckOutput1Detail | Check detail value of Output 1  Address: ExpectedOutput/Column 18->28 |
| CheckTextField1 | Check enable/disable the test field at input 1 |
| CheckTextField2 | Check enable/disable the test field at input 2 |
| CheckPassFail | Check Pass/Fail status  Address: ExpectedOutput/Column 16 |
| CheckMessage | Check message returned  Address: ExpectedOutput/Column 17 |
| CheckInput1Pro | Check type and value return in properties tab  Address: ExpectedOutput/Column 40, 41 |
| CheckOutput1Pro | Check type and value return in properties tab  Address: ExpectedOutput/Column 42, 43 |
| CheckOutput2Pro | Check type and value return in properties tab  Address: ExpectedOutput/Column 44,45 |