



FormStorm™ Enterprise Forms Processing

Step by Step Guide

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Audience: This document provides a guide to
FormStorm forms processing capabilities

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1. Introduction

This guide will provide you with step by step instructions to setting up a System in FormStorm in order to process forms. The guide is based on the SampleDemo system that is included with the FormStorm installation package.

The guide only provides a partial system setup. Once you have created the system according to this guide, you can analyse the complete SampleDemo system to understand how the rest of it was defined

This guide will take you through the following sections:

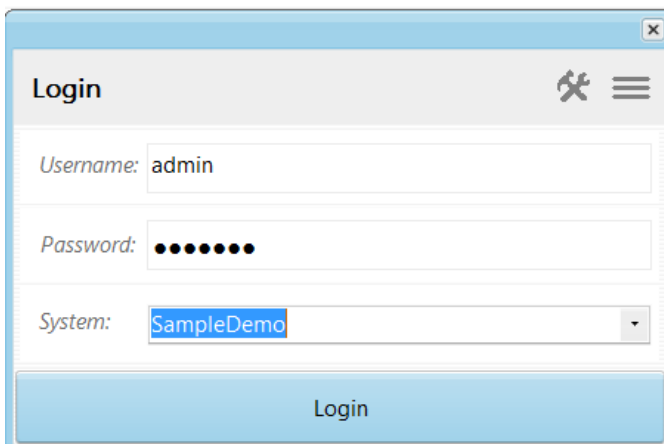
- **FormStorm at Work** – this section explains how FormStorm is actually used to process forms. In this section we will import some images, process them to extract data using Optical Character Recognition (OCR) and then display the data to the Verifier (data entry operator). The final step will be to export the data and images to files.
- **The SampleDemo System** – this section provides a brief overview of the SampleDemo setup.
- **Creating a New System** – this section provides instructions for setting up a system similar to SampleDemo

2. FormStorm at Work

This section provides a brief explanation about how FormStorm can be used to process forms and extract the data from within the images. The next chapter provides an overview of the system setup definitions which enable FormStorm to process these forms

2.1. Logging In

Once you startup FormStorm you can login to the SampleDemo system by entering the User Name and Password and selecting SampleDemo as the System



The screenshot shows a 'Login' dialog box with a title bar containing a close button (X) and two icons (a wrench and a hamburger menu). The dialog has three input fields: 'Username:' with the text 'admin', 'Password:' with masked characters (dots), and 'System:' with a dropdown menu showing 'SampleDemo'. A blue 'Login' button is at the bottom.

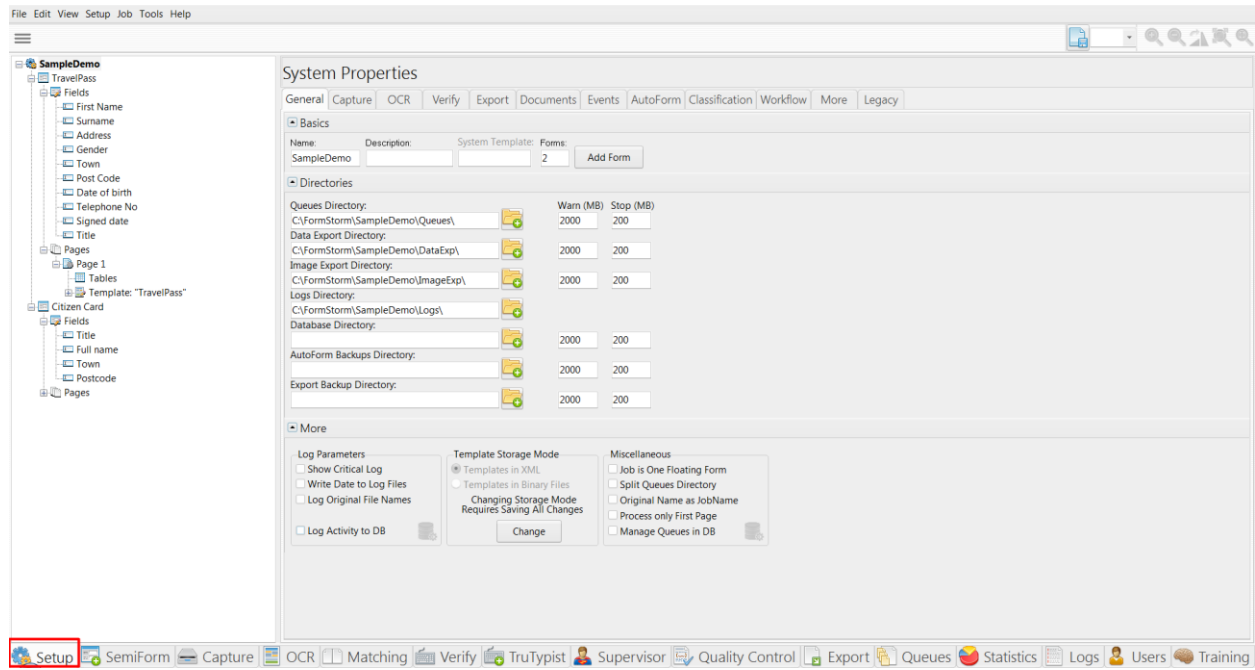
The default user name and password are:

Username - admin

Password – admin51

- ❶ Enter the Username, Password and select the System called 'SampleDemo'
- ❷ Click the Login button (or press ENTER).

Make sure the tab selected at the bottom is Setup. The System Setup should appear



- If you do not see all the details in the left-hand pane, click on the small + signs to expand the tree structure

The Setup tab allows for Systems to be defined so that forms can be defined for data processing. We will cover this information in the next two sections of the guide. As a starting point we will cover how to use FormStorm to process forms.

In this section of the guide, we will be using the SampleDemo system which has already been Setup. We will now cover the actions and steps used when actually processing forms.

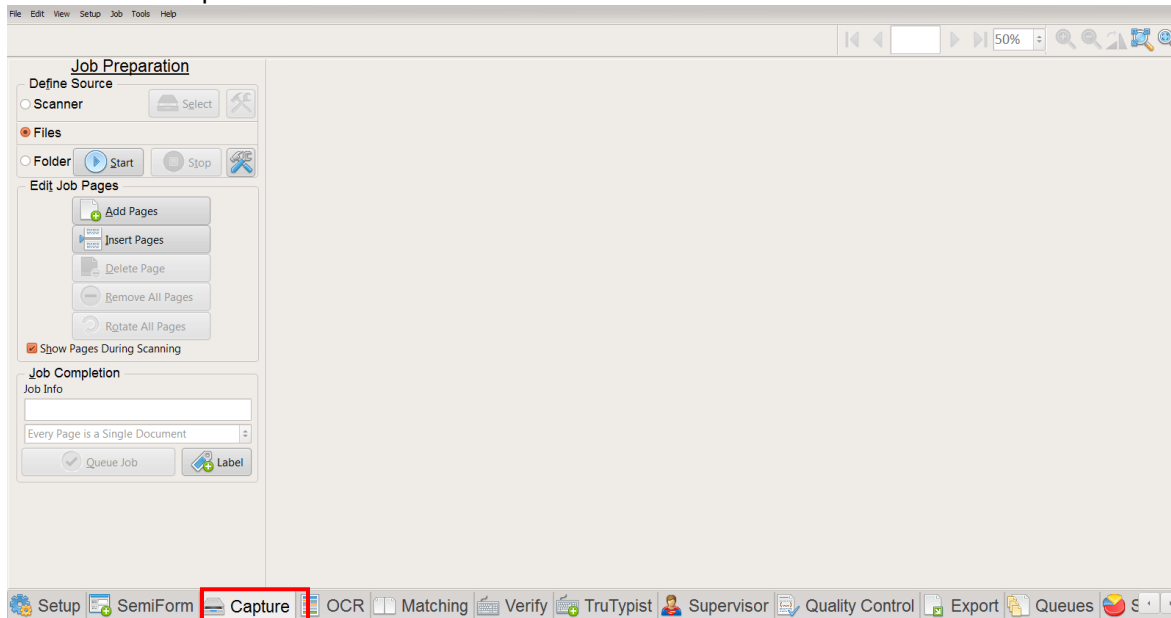
Processing Forms involves the following steps

1. Capture images
2. Process the images – using OCR technology
3. Verify the OCR results – to ensure there are no errors
4. Export the data and images

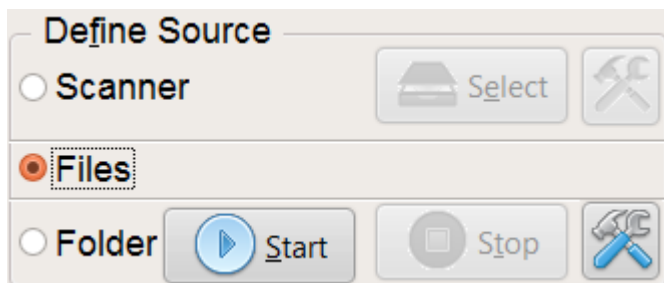
2.2. Capturing Images

The first step in the process is to capture images.

❶ Select the Capture tab at the bottom

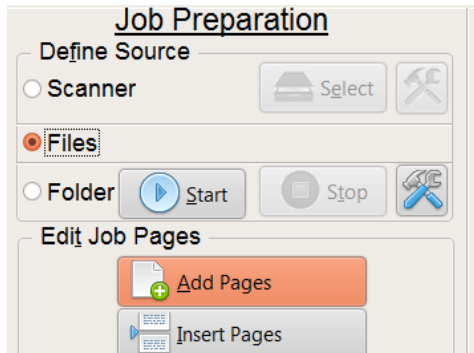


There are three ways to capture images with FormStorm



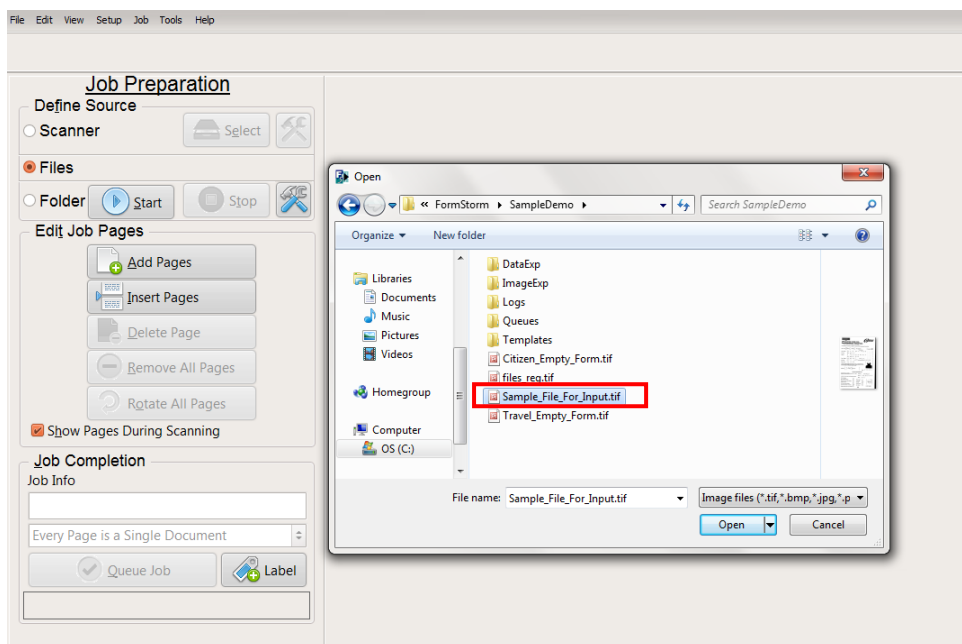
1. Scanner – to scan images
2. Files – to select existing images
3. Folder – to define a directory that FormStorm will continuously access every few seconds and automatically import any images placed in that directory

- 2 Make sure the Files option is selected and click Add Pages.



From the Open window select the file 'Sample File for Input.tif'.

- 3 The Sample File for Input.tif file is located in FormStorm/SampleDemo directory



- ③ Use the toolbar on the top right hand corner to scroll through the images and ensure images are of good quality.

File Edit View Setup Job Tools Help

7 Pages Captured so Far

APPLICATION FORM FOR A CONCESSIONARY TRAVEL PASS
(Please complete the sections below in block capitals)

I am applying for an Elderly ☒ or Disabled ☒ Concessionary Travel Pass

Title Mr ☒ Mrs ☐ Miss ☐ Ms ☐ Other ☐ (Please state) Gender (M/F) ☒ M

First name(s) D A V I D G L Y N J O H N

Surname P E A R C E

Address G T Y L H W Y D P L A C E
N E W B R I D G E

Town / Village N E W P O R T G W E N T

Post code N P 1 1 4 F P Telephone No (0445) 245 838

Date of Birth 3 0 1 2 3 3

Declaration
I confirm that the information given above is correct. I understand that if any details are found to be false, my pass will be cancelled and I may have to pay any costs arising from the issue or use of the pass.

Signature D. W. Pearce

Setup SemiForm Capture OCR Matching Verify TruTypist Supervisor Quality Control Export Queues Statistics Logs Users Training

- ➡ The Edit Job Pages buttons are used to Insert, Delete, Remove All, or Rotate pages

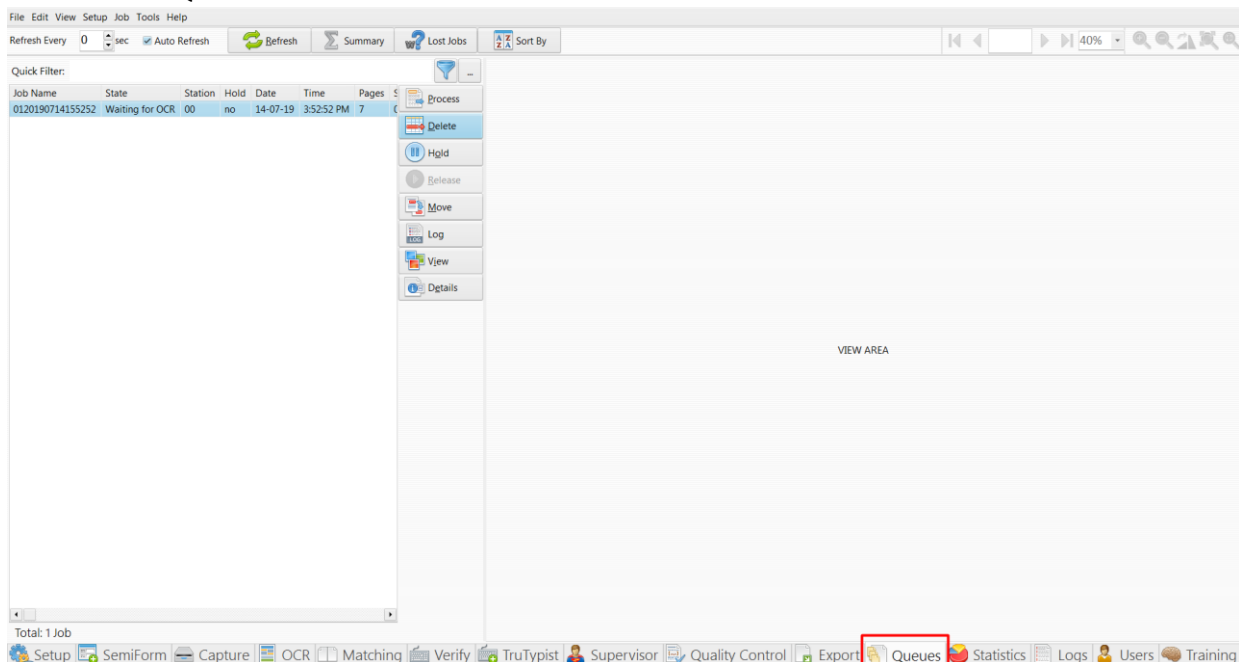
- ④ Click the Queue Job to send the Job to the Queues

In FormStorm 'Job' refers to a group of images processed together. When you click Queue Job all images in the Capture station are grouped together as a single Job. In fact all images are grouped into a single multi-tif file and sent to the Queue

2.3. The Queues

The Queue is where all the FormStorm files are kept while they are being processed by FormStorm. When you click the Queue Job button in the Capture station the images are collected into a single tif file and stored in the Queues as a single job. The Queues also contain an xml file for each job. The XML file holds all the data from the OCR and the Verify process. The files are deleted from the Queues only after the export process when the data and images get exported.

1 Select the Queue tab at the bottom

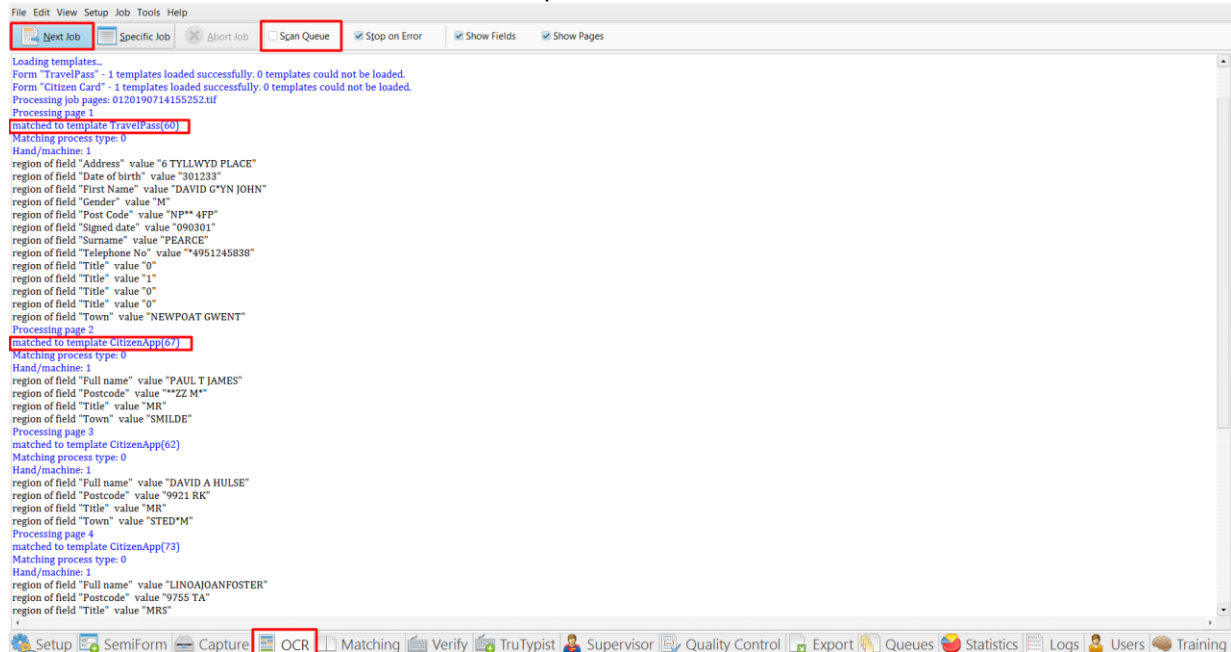


- ➡ The Queues station is the Administrator console where the System Administrator can view which jobs are being processed and their status. The Administrator can carry out action such as deleting jobs, moving jobs higher in the queue and so on. There are also various reports available for the Administrator.
- ➡ The State of the Job which has just been sent to the Queues from the Capture station is 'Waiting for OCR'. This means that the next process to be applied on this Job is OCR processing

2.4. OCR Processing

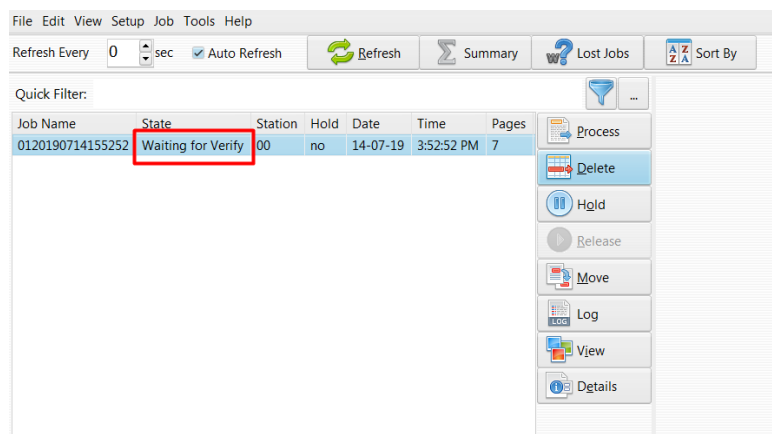
The next step in the process is to OCR the images to extract the data.

- ❶ Select the OCR tab at the bottom
- ❷ Click on Next Job button to start the OCR process



- ➡ The OCR Listing shows each page being processed and to which template it matched to as well as a matching score (25 is the default, anything over this number is a good match)
- ➡ The OCR Station does not have to be manually attended, you can click the Scan Queue checkbox and the OCR Station will pull Jobs automatically from the Queues

- ❸ Click the Queues tab at the bottom and you will see in the Queues Station that the Job is now 'Waiting for Verify'



2.5. Verify

The next step in the process is to verify the data. This is a manual process carried out by the data entry operator.

- ❶ Select the Verify tab at the bottom
- ❷ Click on Get Next Job button to retrieve the next Job

File Edit View Setup Job Tools Help
Verifying 0120190714155252 page: 1 / 7

Next Job Specific Job Abort Job Save Job

Form TravelPass Page 1 Template TravelPass

CONCESSIONARY TRAVEL PASS
(Please complete the sections below in block capitals)

I am applying for an Elderly ☒ or Disabled ☐ Concessionary Travel Pass

Title ☒ Mr ☒ Mrs ☐ Miss ☐ Ms ☐ Other (Please state) Gender (M/F) ☒ M

First name(s) DAVID G*YN JOHN

Surname PEARCE

Address 6 TYLLWYD PLACE

Title	First Name	Surname	Address	Gen	Town
MR	DAVID G*YN JOHN	PEARCE	6 TYLLWYD PLACE	M	NEWPOAT GWENT

Post Code NP** 4FP Date of birth 30 12 33 Telephone No *4951245838 Signed date 09 03 01

Setup SemiForm Capture OCR Matching Verify TruTypist Supervisor Quality Control Export Queues Statistics Logs Users Training

❸ Press ENTER to move to the next field. Where there is an * in a field it means the OCR could not process the character and it must be manually corrected.

➡ If you press ENTER without correcting the * FormStorm will not allow you to continue and inform you that there is an ambiguous character to fix

First Name ambiguous field value

DAVID G*YN JOHN

❹ Once all pages are verified the Job Completion window appears, Select Save Changes to Export the data and images

File Edit View Setup Job Tools Help
Verifying 0120190714155252 page: 7 / 7

Next Job Specific Job Abort Job Save Job

Form Citizen Card Page 1 Template CitizenApp

Application for Citizens Card
Complete this form using CAPITAL LETTERS black ink, one letter or space per box

Part A - Applicant To Comp

Title MR First name ANDREW LOVATT

House No 25 Street THOLEN

Town or City UTRECHT

Postcode 3524 ZN Daytime Contact Telephone No 017

Title Full name Town

MR ANDREW LOVATT UTRECHT

Job Completion
Completion Options

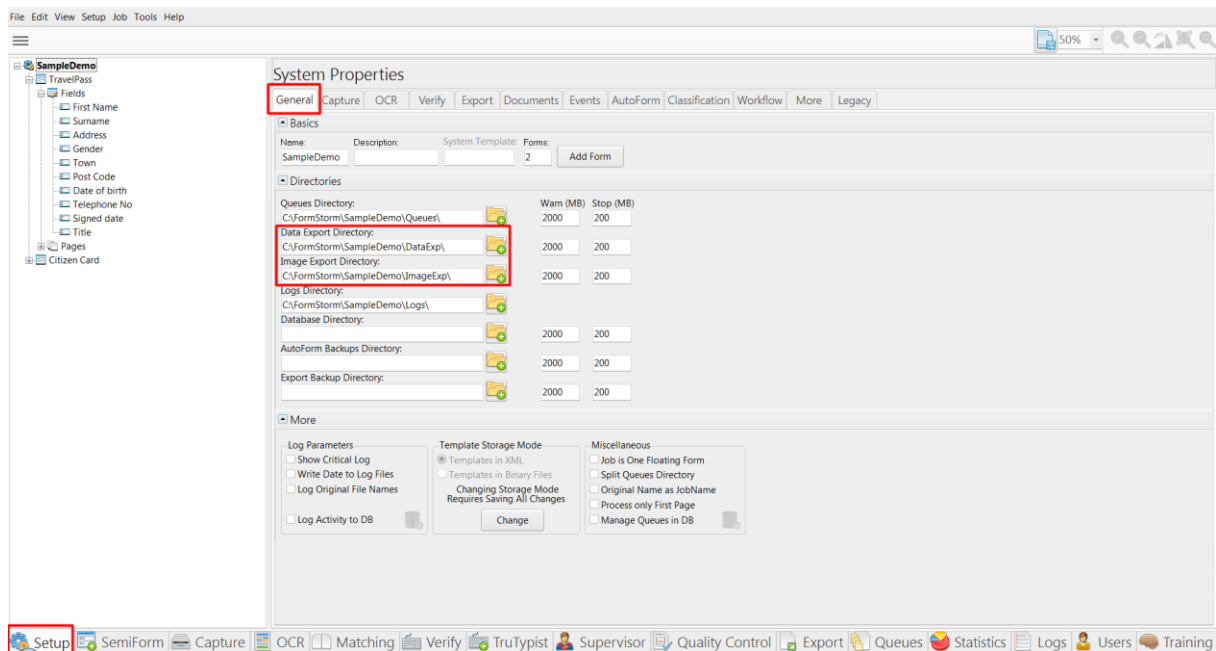
Save Changes

Discard Changes

Continue Typing

To see the files which were exported you need to go to the directories where these files have been exported to.

In the Setup you define where the data and images will be exported to. (This is covered in the Creating a New System section).



➡ Go to these directories to find the exported files and view them

3. The SampleDemo Setup

3.1. The Work Area

This section provides a brief explanation about the complete SampleDemo system. The next chapter provides a step by step guide to explain how the system was created.

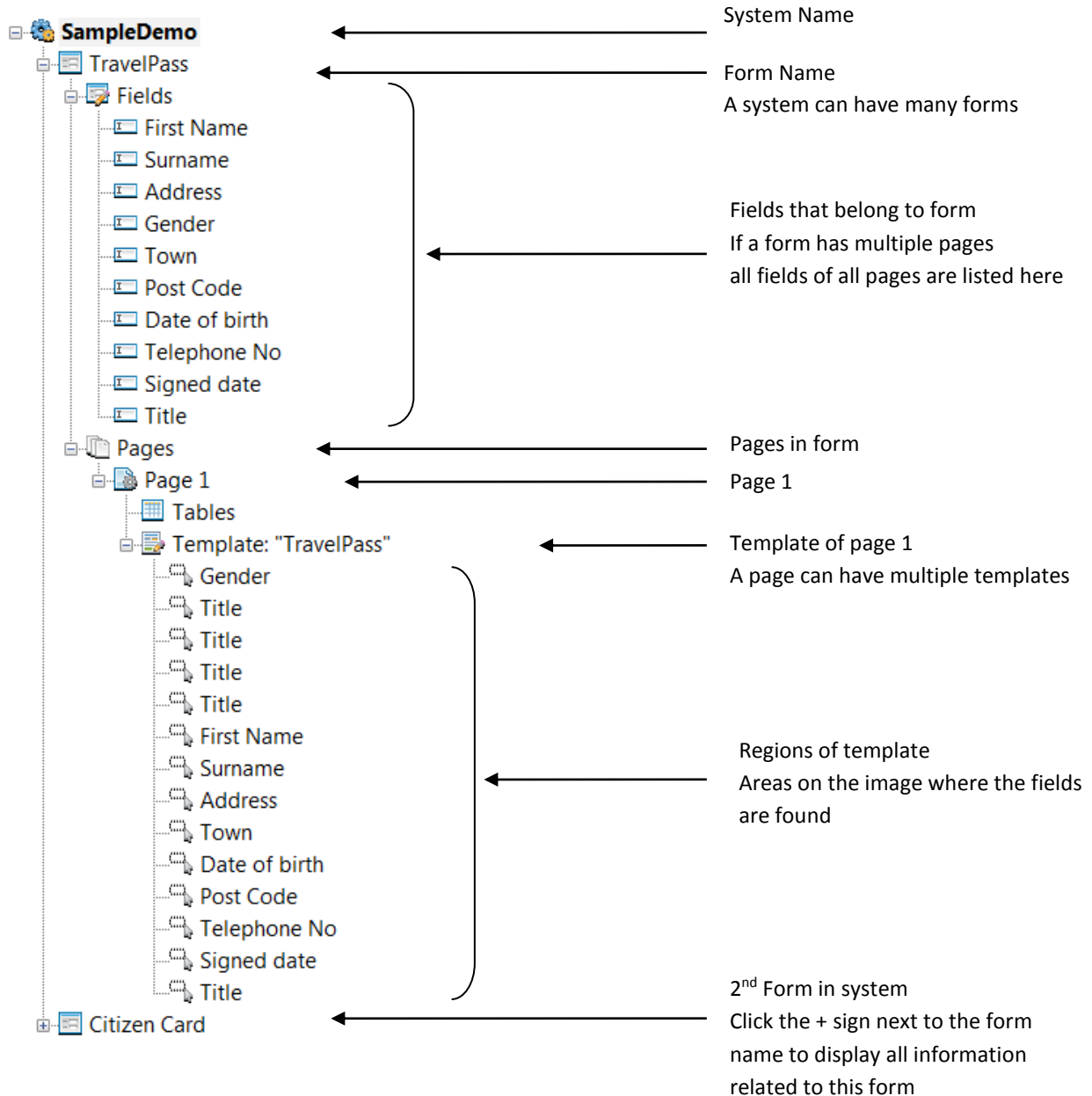
The screenshot shows the FormStorm SampleDemo Setup application. The interface is divided into several sections:

- System Definitions:** A tree view on the left showing the hierarchy of the system. It includes 'SampleDemo', 'TravelPass', 'Fields' (with sub-items like First Name, Surname, Address, Gender, Town, Post Code, Date of birth, Telephone No, Signed date, Title), 'Pages' (with sub-item Page 1), and 'Tables' (with sub-item Template: "TravelPass").
- FormStorm Modules:** A set of tabs at the top of the main window: 'Quick Setup', 'General', 'Capture', 'OCR', 'Verify', 'Export', 'Documents', 'Events', 'AutoForm', 'Classification', 'Workflow', and 'More'. The 'Quick Setup' tab is currently selected.
- System Tabs:** A set of icons at the bottom of the window representing different system components: 'Setup', 'SemiForm', 'Capture', 'OCR', 'Matching', 'Verify', 'TruTypist', 'Supervisor', 'Quality Control', 'Export', and 'Queues'.
- Tab Related Data:** The main content area on the right, which displays configuration settings for the selected 'Quick Setup' tab. This includes sections for 'Directories' (Queues, Data Export, Image Export, Logs, Folder Scan), 'Data Export Settings' (Format: CSV, Write One File for each: Job, Form, Page), 'Image Export Settings' (Format: TIF, Write One File for each: Job, Form, Page), 'Scanning Params' (Resolution: 200, Adaptive, Black and White, Gray, Color, Brightness, Contrast), 'Auto Rotate' (During Capture, During OCR, None, Auto Rotate Char Set), and 'Misc' (Process only First Page, Allow OCR on CtiQ).

Arrows point from the labels below to their corresponding parts in the screenshot:

- System Definitions:** Points to the tree view on the left.
- FormStorm Modules:** Points to the 'Quick Setup' tab.
- System Tabs:** Points to the 'Setup' icon in the bottom toolbar.
- Tab Related Data:** Points to the 'Quick Setup' configuration panel.

System Definitions



3.2. System Definitions - Detail

Creating a system involves the following high level steps:

1. Define the System Level definitions

System Properties

General | Capture | OCR | Verify | Export | Documents | Events | AutoForm | Classification | Workflow | More | Legacy

Basics

Name: SampleDemo Description: System Template: 2 Forms: 2 Add Form

Directories

Directory	Warn (MB)	Stop (MB)
Queues Directory: C:\FormStorm\SampleDemo\Queues\	2000	200
Data Export Directory: C:\FormStorm\SampleDemo\DataExp\	2000	200
Image Export Directory: C:\FormStorm\SampleDemo\ImageExp\	2000	200
Logs Directory: C:\FormStorm\SampleDemo\Logs\	2000	200
Database Directory:	2000	200
AutoForm Backups Directory:	2000	200
Export Backup Directory:	2000	200

More

Log Parameters

☐ Show Critical Log
☐ Write Date to Log Files
☐ Log Original File Names
☐ Log Activity to DB

Template Storage Mode

☒ Templates in XML
☐ Templates in Binary Files
 Changing Storage Mode Requires Saving All Changes
 Change

Miscellaneous

☐ Job is One Floating Form
☐ Split Queues Directory
☐ Original Name as JobName
☐ Process only First Page
☐ Manage Queues in DB

2. Define the Field Level definitions

Field Properties

General | Rules | Dictionary | OCR | Verify | Export | Events | Classification | Workflow

Basics

Name: First Name Description: Page No: 1 Always Exists

Field Type: Alpha Default Value: Default Date Format: YYYYMMDD

Advanced

Upper / Lower Case

☐ Keep Upper/Lower ☒ Convert to Upper ☐ Convert to Lower

Table Column

Table Name: (not a column)

Auto Form Properties

Default Region Type: -none- ☒ Auto Locate ☐ Top/Right
☐ Create Field Title
☐ Do Not Create Region
☐ Do Not Create Id Region

More

In Page Split - Field Can Appear in: Any Page ☐ Show in Queues ☐ Save Colors
☐ Use for Priority ☐ Crowd JSON

Alias: ☐ Include in Auto Separation

3. Create the Regions (areas on form where data is to be found)

The screenshot displays the Form Storm software interface. On the left is a tree view showing the form structure, including fields like First Name, Surname, Address, Gender, Town, Post Code, Date of birth, Telephone No, Signed date, and Title. The 'First Name' field is highlighted with a red box. In the center, the 'Region Properties' dialog box is open, showing tabs for 'Quick Setup', 'General', 'Advanced', and 'OCR'. The 'Quick Setup' tab is active, displaying settings for 'Field: First Name', 'Region Type: Normal', and 'OCR Type: Private Name'. Below the dialog, a sample form for a 'CONCESSIONARY TRAVEL PASS' is shown. The form includes a barcode, the title 'APPLICATION FORM FOR A CONCESSIONARY TRAVEL PASS', and various input fields for personal details. The 'First Name(s)' field is highlighted with a red box, indicating the region created for data extraction.


4. Creating a New System

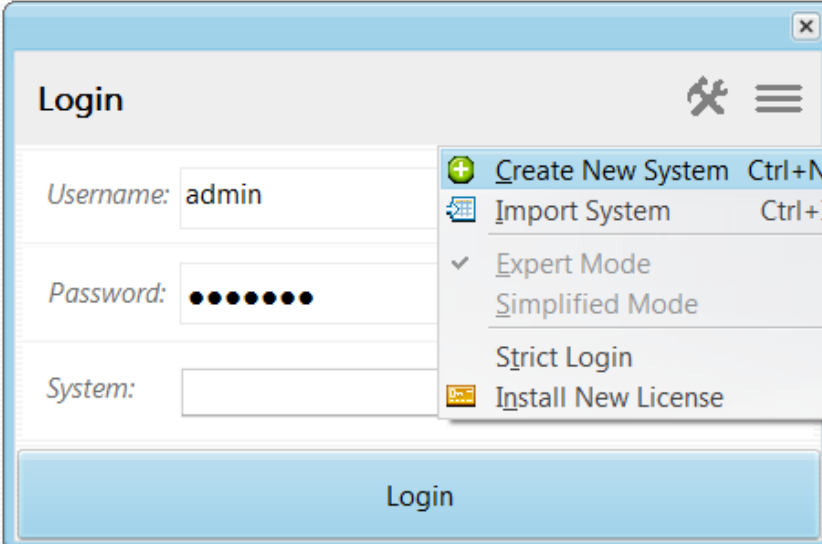
In this section a new system similar to SampleDemo will be created. This guide does not repeat all steps required to create the complete system but rather provides enough information so that the full system can be completed on your own

4.1. Creating the System

The first screen displayed once FormStorm is started is the Login window. The window will display the User Name and System of the previous Login

❶ Enter your User Name and Password

❷ Click the Tools icon  and select 'Create New System'



The default user name and password are:

User Name - admin

Password – admin51

The Create System window will be displayed

- ③ Enter the new system name in the New System Name field

The Directory for XML file is where the XML file holding the system definitions will be stored. All system definitions are stored in this file

The Quick Setup section is used for requesting a blank system to be created or a ready-made system. The ready-made system for Invoice Processing is not part of this guide

- ④ Click the Create and Login button

FormStorm will open with the new system created.

4.2. Defining the System Properties

This step includes defining all the System level parameters. Only the very basic parameters will be explained. For a complete description of all parameters refer to the FormStorm User Guide

The General Properties

At this stage no need to make changes to any of the General definitions. Note the location of where the output will be exported to

System Properties

General | Capture | OCR | Verify | Export | Documents | Events | AutoForm | Classification | Workflow | More | Legacy

Basics

Name: Tutorial Description: System Template: Forms: 0 Add Form

Directories

Directory	Warn (MB)	Stop (MB)
Queues Directory: C:\FormStorm\Tutorial\Queues\	2000	200
Data Export Directory: C:\FormStorm\Tutorial\DataExp\	2000	200
Image Export Directory: C:\FormStorm\Tutorial\ImageExp\	2000	200
Logs Directory: C:\FormStorm\Tutorial\Logs\	2000	200
Database Directory: C:\FormStorm\Tutorial\DB\	2000	200
AutoForm Backups Directory:	2000	200
Export Backup Directory:	2000	200

The Data Export directory is where the data files will be exported to

The Image Export directory is where the image files will be exported to

More

Log Parameters

☐ Show Critical Log

☐ Write Date to Log Files

☐ Log Original File Names

☐ Log Activity to DB

Template Storage Mode

☒ Templates in XML

☐ Templates in Binary Files

Changing Storage Mode Requires Saving All Changes

Change

Miscellaneous

☐ Job is One Floating Form

☐ Split Queues Directory

☐ Original Name as JobName

☐ Process only First Page

☐ Manage Queues in DB

The Capture Properties

Capturing images can be done from three sources:

- Scanning using FormStorm
- Selecting existing images
- Instructing FormStorm to access a certain directory every few seconds and import any images which are placed there

Depending on which method you plan to use will determine what parameters you will need to define in this screen

System Properties

General
Capture
OCR
Verify
Export
Documents
Events
AutoForm
Classification
Workflow
More

Scanning Parameters

Resolution
Resolution: 200

Pixel Control
☒ Black and White
☐ Gray
☐ Color

Size
Width: 11.7 Height: 8.5 XPos: 0 YPos: 0

Brightness: 50 Contrast: 50
☐ Adaptive
☒ Gray
☒ Red
☒ Green
☒ Blue

Advanced Scanning
☐ Keep Colors
☒ Twain Resize
☐ Twain Reload
☐ Duplex
☒ Detect ADF
☐ Auto Extend
☐ TWAIN GUI

Empty Pages Operations
☐ Stop on Empty Page
☐ Remove Empty Page
☒ Remove Empty Header and Footer

Folder Scan

Directory Name

Include Files
☒ TIF
☐ PDF
☐ JPG
☐ Numeric
☐ DOC/X
☐ XLS/X
☐ PNG

Download Emails
☐ Activate Email Scanner
Email Scan Settings

Miscellaneous

Job Info
☐ Job Info Required
☐ UNC
☐ Job Info from File Name

Page Order
☐ Check Form Pages
☐ Check Right Order
☐ Reorder

Auto Rotate
☐ Auto Rotate
Auto Rotate Char Set
Latin

Printing (Endorsement)
Descriptor

Scanning Parameters

- ❶ Enter the Resolution if you plan to scan using FormStorm
- ➡ Higher resolution is preferred for OCR but does mean more storage space requirements.

Scanning Parameters

Resolution: 200

Size: Width: 11.7, Height: 8.5, XPos: 0, YPos: 0

Pixel Control: ☒ Black and White, ☐ Gray, ☐ Color

Brightness: 50, Contrast: 50

☐ Adaptive, ☒ Gray, ☒ Red, ☒ Green, ☒ Blue

- ❷ Leave Black and white as the pixel control
- ➡ Sometime Gray images will provide higher quality but those are rare cases
- ➡ Select the Color option only if you wish to scan in color in order to export the whole image or part of it (e.g. a photo) in color. If the Color option is selected make sure to select Keep Colors option as well. If Keep Colors is not ticked the color image is discarded during scanning after it is converted to Black and White. (Black and White is always required for OCR purposes).

For this tutorial make sure Keep Colors is not ticked

Advanced Scanning

☒ Keep Colors, ☒ Twain Resize, ☐ Twain Reload

☐ retain color image after scan

☐ Auto Extend, ☐ TWAIN GUI

Folder Scan

- ❶ If you want FormStorm to poll a directory during processing time and pick up any images placed in that directory, enter the location where the images will be picked up
- ❷ Tick the types of files to be picked up from the directory

Folder Scan

Directory Name: [Text Field]

Include Files: ☒ TIF, ☐ PDF, ☐ JPG, ☐ Numeric, ☐ DOC/X, ☐ XLS/X, ☐ PNG

- ➡ If you have just started using FormStorm best to leave this option for later and either scan or import existing images at this initial stage

The OCR Properties

At this stage no need to make changes to any of the OCR definitions. At a later stage this screen can be used to define some image enhancements parameters

System Properties

General Capture **OCR** Verify Export Documents Events AutoForm Classification Workflow More

Basics

Image Enhancement
Before Template Recognition

For OCR only

Recognize Barcode for Every Page
Barcode Options

Template Matching

Template Matching
Try Rotations ☒ 0 ☐ 90 ☐ 180 ☐ 270
☐ OCR if No Match ☐ Fax

Max Shift
Horizontal default Vertical default

Do Not Match
☐ If Page Contains Table Only

OCR Parameters

Default Languages
☐ Catalan ☐ Croatian ☐ Czech ☐ Danish ☐ Dutch ☐ English ☐ Finnish ☐ French

Full Page
☐ OCR Full Page ☐ Ignore Tables

Auto Rotate in OCR
☐ Auto Rotate Auto Rotate Char Set Latin

Advanced Matching Parameters

Template Condition:

Template Condition:

Template Matching

- ❶ The Minimal Regular Template Match is the threshold level for template matching. Images matched to a template with a score higher than this number are regarded as 'matched to template' below this number is regarded as no match
- ➡ At this stage leave the score as 25 which is the default level. If during preliminary testing many images are not matched to templates it is advisable to lower this score and see if it improves matching. A lower score will mean more images matched to templates but could also mean wrong matching so there is a trade-off.

The Verify properties define how the Verify station (data entry) will look and feel. At this stage no changes need to be made to the default settings

System Properties

The Export Properties


The Export properties define how the data and images will be exported

System Properties

General Capture OCR Verify **Export** Documents Events AutoForm Classification

Data Export Parameters

Data Export Parameters

Format XML  ☐ Export CHR

Write Separate Data File for each: ☒ Job ☐ Form/Document ☐ Page

In Case of Data File Already Exists: Overwrite

☐ Export XML after OCR ☐ Export Before Supervisor

Advanced Data Export Parameters

Field Delimiter , Line Delimiter LF ☐ No Header ☐ No Form Name

☐ Export Original Page File Name ☐ UNC path

☐ Export Target Page File Name ☐ Use Job Info as File Name

☐ Skip Instructions XML Nodes ☐ Export Data Before Images



Data File Name Descriptor %j  Page OCR File Name Descriptor 

Image Export Parameters

Image Export Parameters


Write Separate Image File for each: ☒ Job ☐ Form/Document ☐ Page


In Case of Image File Already Exists: Overwrite

☒ Export Original Images ☐ Export Registered Images

☒ TIF ☐ PDF ☐ Searchable PDF (registered only) ☐ PDF (Color)

Advanced Image Export Parameters


Image File Name Descriptor %j 

Color Image File Name Descriptor 

☐ Export Color Images %j\Page%p

☐ Keep Original Rotation in Colored Images

Database

☐ Export to DB  Database... ☐ Export to DB before Sup

Data Export Parameters


- 1 Select CSV as the format for the exported data file

System Properties

General Capture OCR Verify **Export** Documents Events AutoForm

Data Export Parameters

Data Export Parameters

Format CSV  ☐ Export CHR

Write Separate Data File for each: ☐ Job ☐ Form/Document ☐ Page

In Case of Data File Already Exists: Overwrite

☐ Export XML after OCR ☐ Export Before Supervisor



Advanced Data Export Parameters


Field Delimiter , Line Delimiter LF ☐ No Header ☐ No Form Name

☐ Export Original Page File Name ☐ UNC path

☐ Export Target Page File Name ☐ Use Job Info as File Name

☐ Skip Instructions XML Nodes ☐ Export Data Before Images


Data File Name Descriptor %j  Page OCR File Name Descriptor 

Color Image File Name Descriptor 

☐ Export Color Images %j\Page%p

☐ Keep Original Rotation in Colored Images

Database

☐ Export to DB  Database... ☐ Export to DB before Sup

- 2 Select how the data will be exported, as one file for the Job or as separate files per Form or per Page

- ➡ Job means data from all pages in a Job are exported into a single file. Forms means data is exported per each Form (as Form can be one or more pages). Page means data from each page is exported to a different file

- 3 Use the cog wheels icon to the right of the Data File Name Descriptor to define the name of the data file to export

- ➡ If the option of Form or Page is selected for data output, make sure the file name is unique, for example you can add the page number to the file name %j%p

Image Export Parameters

- 1 Select the images to export. Original images are exactly as they were scanned, Registered images are after enhancements are applied
- 2 Select how the images will be exported, as one file for the Job or as separate files per Form or per Page

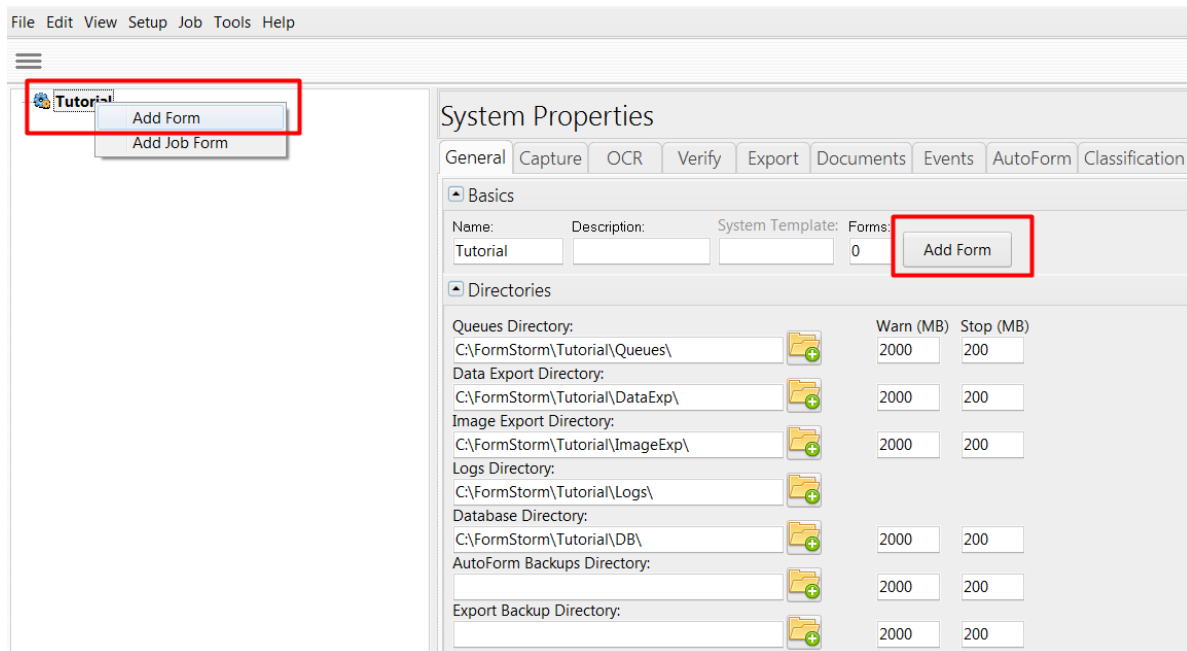
- ➡ Job means images of all pages in a Job are exported into a single file. Forms means images are exported per each Form (as Form can be one or more pages). Page means each page is exported as a separate file

- 3 Use the cog wheels icon to the right of the Image File Name Descriptor to define the name of the image file to export

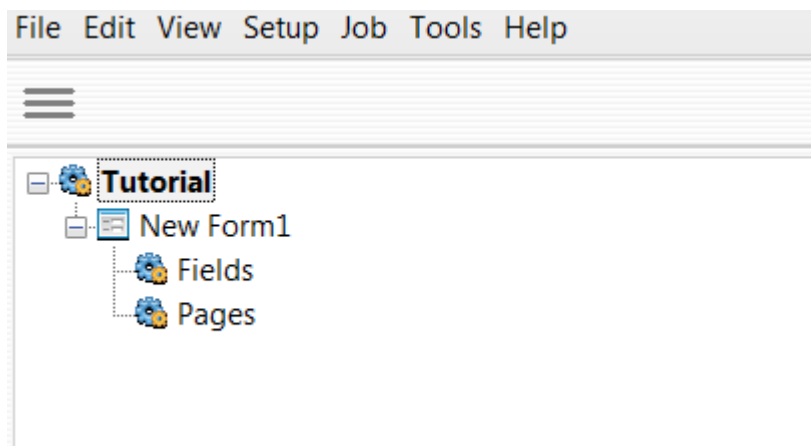
- ➡ If the option of Form or Page is selected for image output, make sure the file name is unique, for example you can add the page number to the file name %j%p

4.3. Defining the Form

- 1 Right click on the system name or click the Add Form button



- 2 Expand the tree structure by clicking the + sign



- ③ Click on New Form1 then enter 'TravelPass' as the name of the Form

- ④ Leave the Verify in Page Mode option ticked if you want verification to be done with image of full page displayed. Unticking this option means verification will be done in Field Mode which means seeing snippets of fields

This is how the Verify screen will look if:

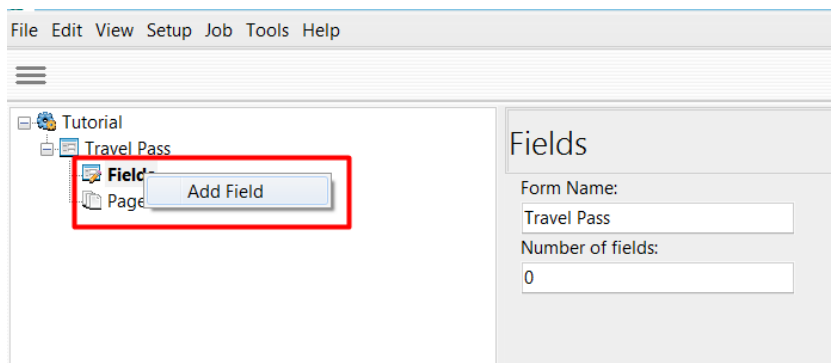
Page Mode 'Verify in Page Mode' ticked

Field Mode 'Verify in Page Mode' un-ticked

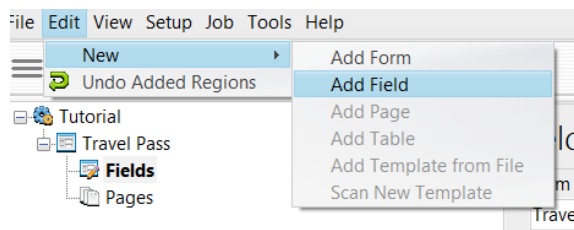
4.4. Defining the Fields

Once the Form is defined the next step is to define the fields. There are two ways to define fields. One way is to define the field first and later to draw the region on the image where the field is. The other way is to draw the region on the image first. In this section we will define the field first, in a later section we will define the region first and then the field.

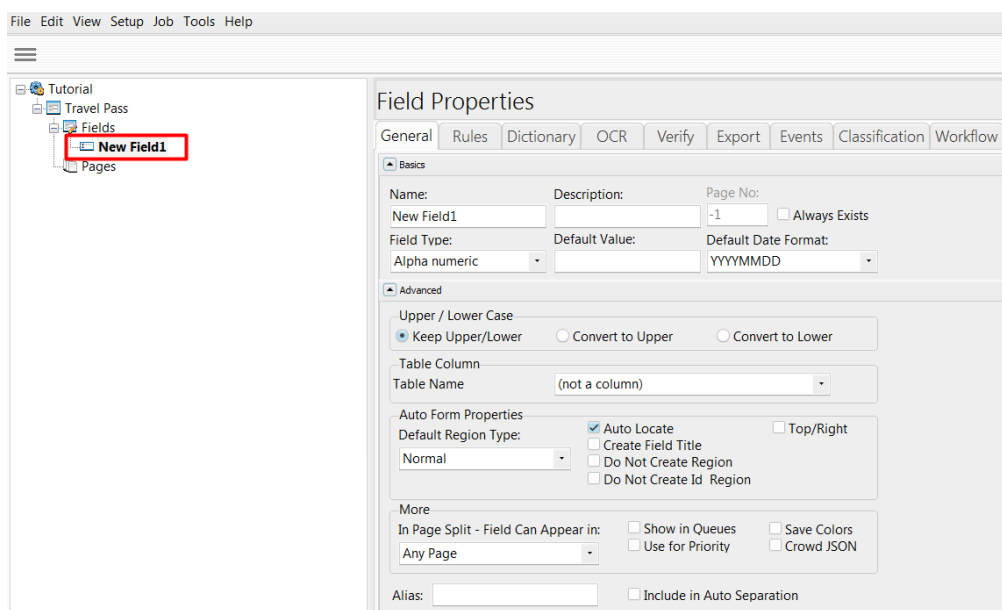
- 1 Right click on the word Fields and click on Add Fields



- 2 You can also add fields from the menu Edit ➤ New ➤ Add Field



A New Field is created



4.5. Defining the Field Properties

For each field we need to define the field properties which describe what values can be entered for the field and how the field will behave.

The General Properties

Field Properties

General Rules Dictionary OCR Verify Export Events Classification

Basics

Name: New Field1 Description: Page No: -1 ☐ Always Exists

Field Type: Alpha numeric Default Value: Default Date Format: YYYYMMDD

Advanced

Upper / Lower Case
☒ Keep Upper/Lower ☐ Convert to Upper ☐ Convert to Lower

Table Column
 Table Name: (not a column)

Auto Form Properties
 Default Region Type: Normal ☒ Auto Locate ☐ Top/Right
☐ Create Field Title
☐ Do Not Create Region
☐ Do Not Create Id Region

More
 In Page Split - Field Can Appear in: Any Page ☐ Show in Queues ☐ Save Colors
☐ Use for Priority ☐ Crowd JSON

Alias: ☐ Include in Auto Separation

❶ Enter the field name e.g. First Name

❷ Select the Field Type. In this case we expect the First Name to include only alpha characters

Field Properties

General Rules Dictionary OCR Verify Export Events Classification

Basics

Name: First Name Description: Page No: -1 ☐ Always Exists

Field Type: Alpha numeric Default Value: Default Date Format: YYYYMMDD

Advanced

Convert to Upper ☐ Convert to Lower ☐

Table Column
 Table Name: (not a column)

Auto Form Properties
☒ Auto Locate ☐ Top/Right
☐ Create Field Title
☐ Do Not Create Region
☐ Do Not Create Id Region

More
 In Page Split - Field Can Appear in: Any Page ☐ Show in Queues ☐ Save Colors
☐ Use for Priority ☐ Crowd JSON

Alias: ☐ Include in Auto Separation

The Rules Properties

Field Properties

General
Rules
Dictionary
OCR
Verify
Export
Events
Classification

Basics

Minimal Length: 1
Maximal Length: 10
Maximal Lines: 1
Display Length: 0

Allowed Letters:
Minimal Value:
Maximal Value:

☐ Value is required for this field

Patterns

Root Field: --none--

☐ Correct Automaticall
☐ Display Unverified
☐ Auto Update

- Enter the minimum and maximum length expected for the field. E.g. if the First Name can be as short as 1 character and as long as 30 characters:

Field Properties

General
Rules
Dictionary
OCR
Verify
Exp

Basics

Minimal Length: 1
Maximal Length: 30
Maximal Lines: 1
Di: 0

Allowed Letters:
Minimal Value:
Maximal Value:

☐ Value is required for this field

Patterns

The Dictionary Properties

Dictionaries are used for fields which have a fixed set of possible values. Dictionaries greatly enhance the OCR results as the OCR will use the list of values to attain improved final results. The field First name is not a good contender for a dictionary since it does not have a fixed set of possible values. In this case we do not make changes in this tab

Field Properties

General
Rules
Dictionary
OCR
Verify
Export
Events
Classification
Workflow

Basics

Dictionary:

Group No: 0
Column No: 0

OCR Options

☐ Correct Automatically
Min Item Match: 70

Verify Options

☐ Auto Fill
☒ Must Be in Dictionary
☐ Show Partial Match

Dictionary Display Options

☒ Popup List Box
☐ Combo Box


The OCR Properties

The OCR properties are used to select the OCR parameters and other options which can increase the OCR recognition.

Field Properties

General Rules Dictionary **OCR** Verify Export Events Classification Workflow

Basics

Default OCR Type: InvMachine  Confidence Level: Low 30

Date Post Processing

☒ Date Post Processing
☐ Year Auto Complete
☒ Allow Future Date
☐ Time Post Processing
☐ International Date is Allowed

Languages
☐ Catalan
☐ Croatian
☐ Czech
☐ Danish

Alternate OCR Type:

Number Post Processing

☐ Amount Post Processing
☐ Price Post Processing
☒ Amount always has Decimal Digit

☒ Keep Decimal Digit
☐ IDs Post Processing
☐ Extract Digits

☐ Extract Digits and Delimiters

OMR Post Processing

☒ OMR One Choice Value if More than One Mark

More

☐ One Word Post Processing
☐ Dictionary Post Processing
☐ Email Post Processing
☐ Get Scanner MICR
Handprint OCR Type:

☐ Not In Table
☐ Try General Algorithm
☐ If Fax Put this Value:
Max. Ambiguous Chars: 9

Table Field Properties
☐ Left Aligned
☐ Right Aligned
☐ Center
☐ Multilines

OCR Type

The OCR Type is a set of OCR settings that are saved together as a group of parameters called 'OCR Type' so that you can assign the same group of parameters to many fields.


For example if you have many alpha numeric fields that are similar. You can create an appropriate OCR Type that is good for such fields and then assign this OCR Type to all alpha numeric fields.

- 1 Click the icon next to the Default OCR Type field

Field Properties

General Rules Dictionary **OCR** Verify Export

Basics

Default OCR Type: InvMachine  Confidence Level: Low 30

Date Post Processing

The OCR Build Region Parameters window will open

Build Region Parameters

OCR Type:

General | OCR | Hints

What should be recognized ?

- ☐ Handwriting or Specific Font
- ☒ Machine Print
- ☐ Machine Print then Handwriting
- ☐ OMR
- ☐ Barcode
- ☐ FieldScript
- ☐ Custom Function

General Parameters

☒ Keep Form Data

☐ Use for Voting

Image Enhancement:

Custom String:

② Select Handwriting as the type of writing expected in this field

Build Region Parameters

OCR Type:

General | ICR | Hints

What should be recognized ?

- ☒ Handwriting or Specific Font
- ☐ Machine Print
- ☐ Machine Print then Handwriting
- ☐ OMR
- ☐ Barcode

General Parameters

☐ Keep Form Data

☐ Use for Voting

Image Enhancement:

➡ Make sure Keep Form Data is un-ticked. This is an advanced feature not required at this point

③ Click on the ICR tab and make sure the Classifiers JustICR and Kadmos fields are populated with usanhp and handus. If the fields are empty, click the Open File icon and select usanhp as the JustICR classifier and handus as the Kadmos classifier.

Build Region Parameters

OCR Type:

General | ICR | Hints

Classifiers

Classifier	Weight
JustICR: usanhp	50
Kadmos: handus	

➡ The Classifiers are sample files that the OCR engine uses. Selecting different classifier files is explained in the User Guide

- ④ Click on the Hints tab and select the Segmentation Type. In our case we only expect this field to contain one word i.e. the First Name itself. Also select the characters expected, in our case it is a field with alpha characters only, we expect there could be upper and lower case characters

- ⑤ Click Save as Type and Exit. Enter a name in the Field Type Name and click OK

- ➡ It is recommended to create separate OCR Types for each system so that if changes are done to an OCR Type it does not affect other systems.

- It is recommended to give the OCR Type a name which includes the system name as well as the type of characters this OCR is used for e.g. in this case we named the OCR Type as System name 'Tutorial' followed by the type of field which is HandWriting hence TutorialHw
- Once you click OK the Default OCR Type field will show the OCR Type selected for this field

Field Properties

General Rules Dictionary OCR Verify Export E

Basics

Default OCR Type: TutorialHW

Confidence Level: Low 30

The Verify Properties

The Verify properties are used to define how the field will appear and behave in the verify station used for data entry.

Field Properties

General Rules Dictionary OCR Verify Export Events Classification Workflow

Basics

Display Conditions

Display Field to Verifier if: Not Legal

☒ Display if No Match ☐ Supervisor Only

Editing Properties

☐ Auto Tab ☐ Force Auto Tab ☐ Mosaic

☐ Disabled ☐ Size as Image ☐ Right to Left

☒ Always Highlight ☐ Read Only

☐ Always Highlight Color ☐ Read Only Fields Color

☐ Processed Region Color ☐ Field Zoom 0 %

TruTypist

Display Field to TruTypist if: Never

☐ Show Empty Field ☒ Show OCR ☐ Show Verify

☐ Send Conflicts to Supervisor ☐ Dont Check Conflicts

Hint

Hint

Text Color

Back Color

Alignment in Page Mode

☐ Line Break After ☐ Page Break After ☐ Hide Description ☐ Show Snippet

☐ Line Break Before ☐ Page Break Before ☐ Full Label ☐ Align Image Vertically

Quality Control

❶ In Display Field to Verifier if: select Always

➡ This field determines the conditions to determine if a field will be displayed to the Verifier during the verification process

Not Empty – display field if there is a value in this field

Not Legal – display field if it breaks some rule and therefore has a value not allowed e.g. an alpha character in a numeric field

Always – field is always shown even if blank

Never – field is never displayed to the Verifier

Empty / illegal – display if field is empty or has an illegal value

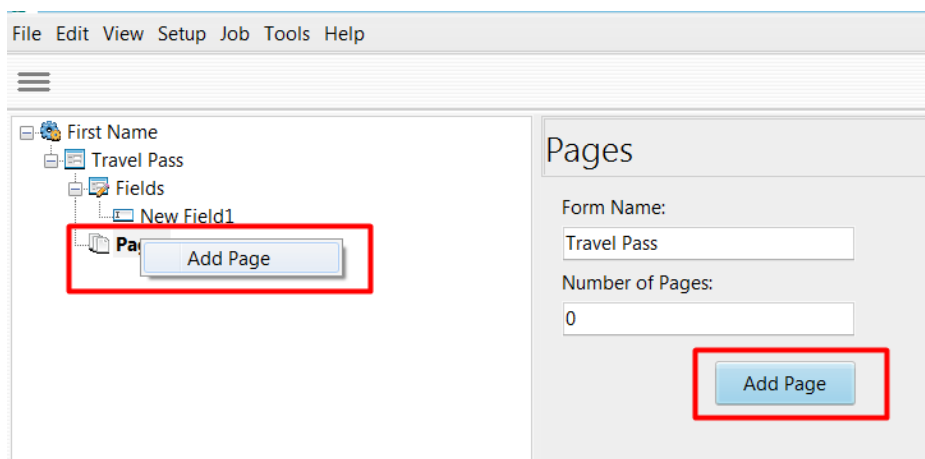
Display Page – display field only if page needs to be displayed for example if for a certain Form being processed, all fields are correct and there is no need to display any of them then this field is also not displayed


4.6. Defining the Page

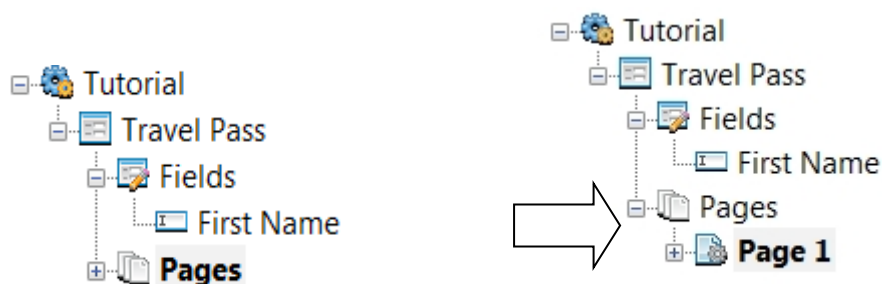
A Form can include one or more pages.

For example, a duplex form will have 2 pages, the front and the back

- 1 Right click on the word Pages or click on the Add Page button



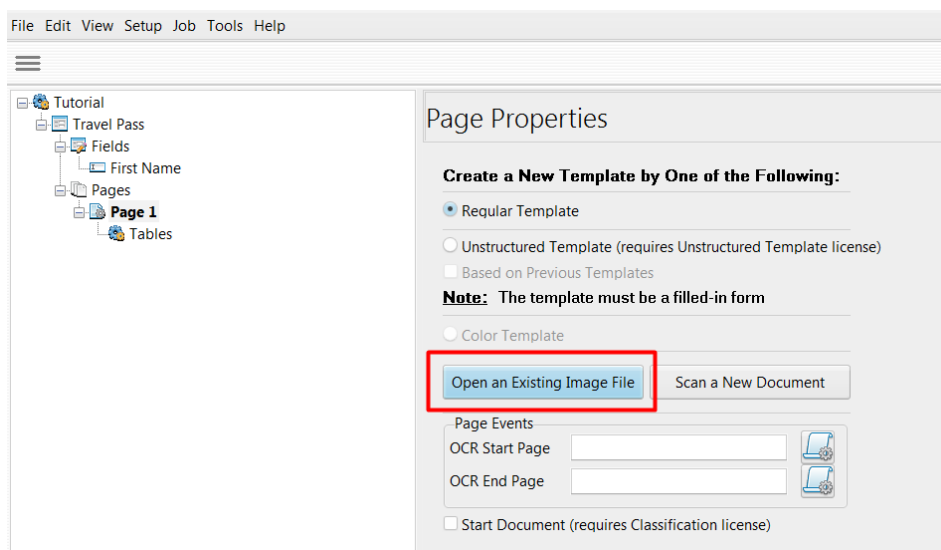
- 2 Click the  sign next to the word Pages to open up the tree structure



4.7. Creating the Template

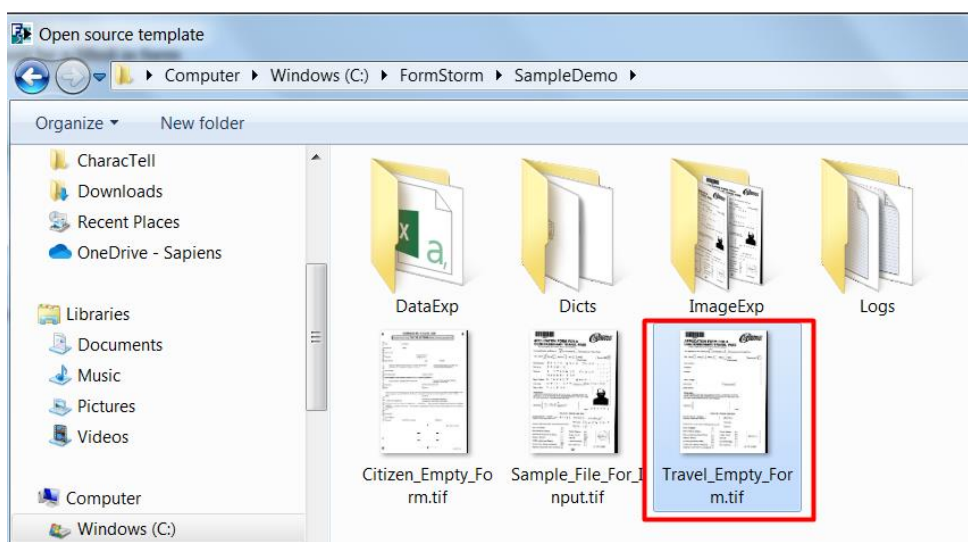
Each page requires one or more templates. The template is simply an image of a blank form. FormStorm uses the templates to match the forms being processed so it can determine which form and which page it is processing

- 1 Click on Page 1 on the left hand Pane and click the Open an Existing Image File button



- 2 You can also select to scan a page by selecting the Scan a New Document button

- 2 Under the FormStorm Directory select SampleDemo and select Travel_Empty_Form.tif and click Open



- 2 In this case we are simply using the blank image supplied with the SampleDemo system

- ③ Click the Save button to confirm the image as a template

Empty Form Image

Zoom: 28%

Rotate

Deskew

Clear Region

Fill Region

Templates:

Template Name: Travel_Empty_Form

Save

Cancel

You can use Clicks to select words/lines

- ➡ This window allows you to make some enhancements to the template before saving it

The Template Properties screen appears with the template image displayed (make sure you have selected the template on the left hand side)

File Edit View Setup Job Tools Help

Tutorial

- Travel Pass
 - Fields
 - Pages
 - Page 1
 - Tables
 - Template: "Travel_Empty_Form"

Template Properties

Quick Setup General Advanced Template Synchronization

Name: Travel_Empty_Form

☐ Do not Try to Match

☐ Allow Region Overlap

590868

APPLICATION FORM FOR A CONCESSIONARY TRAVEL PASS

(Please complete the sections below in block capitals)

I am applying for an Elderly (☒) or Disabled (☒) Concessionary Travel P

Title Mr(☒) Mrs(☒) Miss(☒) Ms(☒) Other (Please state)

First name(s)

4.8. Creating the Template Regions

Regions are areas marked on the template which are assigned to fields. FormStorm then knows where the data for each field resides on the form

- 1 Drag the mouse to draw a region corresponding to the area of the First Name

The screenshot shows the FormStorm interface. On the left is a tree view with 'Tutorial' > 'Travel Pass' > 'Fields' > 'First Name' selected. The main area displays a form template for 'APPLICATION FORM FOR A CONCESSIONARY TRAVEL PASS'. A yellow rectangular region is drawn over the 'First name(s)' field. The 'Region Properties' dialog box is open, showing 'Field: (none)', 'Region Type: Normal', and 'OCR Type: <No OCR>'. There are checkboxes for 'Auto Locate', 'Allow Region Overlap', and 'Lock All Regions'.

- 2 Select the field First Name to link the field to the region. The Region Type in this case is Normal and the OCR Type is the one we selected before in Field Properties OCR parameters

This is a close-up of the 'Region Properties' dialog box. The 'Field' dropdown menu is open, showing 'First Name' selected. The 'Region Type' is set to 'Normal' and the 'OCR Type' is set to 'TutorialHW'. The 'Auto Locate' checkbox is unchecked.

The First Name field and its associated region have now been defined.

4.9. Alternate Way to Create Fields

In the previous example, a field was created then it was assigned to a region. There is another way to create regions and fields by creating the region first. The following example will show how this is done to define the Surname field

- 1 Drag the mouse to draw a region corresponding to the area of the Surname

File Edit View Setup Job Tools Help

Tutorial
Travel Pass
Fields
First Name
Pages
Page 1
Tables
Template: "Travel_Empty_Form"
First Name
Region

Region Properties

Quick Setup General Advanced OCR

Field: (none) Region Type: Normal OCR Type: <No OCR>

☐ Allow Region Overlap
☐ Lock All Regions
☐ Auto Locate

590868

APPLICATION FORM FOR A CONCESSIONARY TRAVEL PASS
(Please complete the sections below in block capitals)

I am applying for an Elderly (✓) ☐ or Disabled (✓) ☐ Concessionary Travel Pass

Title Mr(✓) ☐ Mrs(✓) ☐ Miss(✓) ☐ Ms(✓) ☐ Other (Please state) Gender (M/F) ☐

First name(s)

Surname

Address

- 2 Click on the Field icon

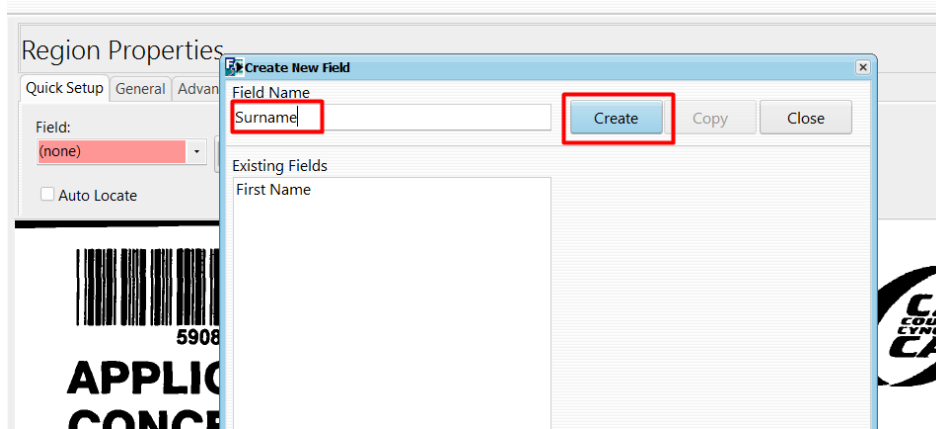
Region Properties

Quick Setup General Advanced OCR

Field: (none) Region Type: Normal

☐ Auto Locate

- 2 Enter the field name and click Create



The Create New Field window opens

Create New Field

Field Name: Surname [Create] [Copy] [Close]

Field Properties

General | Rules | Dictionary | OCR | Verify | Export | Events | Classification

Basics

Name: Surname Description: Page No: -1 ☐ Always Exists

Field Type: Alpha numeric Default Value: Default Date Format: YYYYMMDD

Advanced

Upper / Lower Case
☒ Keep Upper/Lower ☐ Convert to Upper ☐ Convert to Lower

Table Column
 Table Name: (not a column)

Auto Form Properties
 Default Region Type: Normal ☒ Auto Locate ☐ Top/Right
☐ Create Field Title
☐ Do Not Create Region
☐ Do Not Create Id Region

More
 In Page Split - Field Can Appear in: Any Page ☐ Show in Queues ☐ Save Colors
☐ Use for Priority ☐ Crowd JSON

Alias: ☐ Include in Auto Separation

- The Create New Field window has exactly the same Field Properties tabs as before. Selecting the field properties is done in exactly the same way as before. Define all field properties and click Close when finished

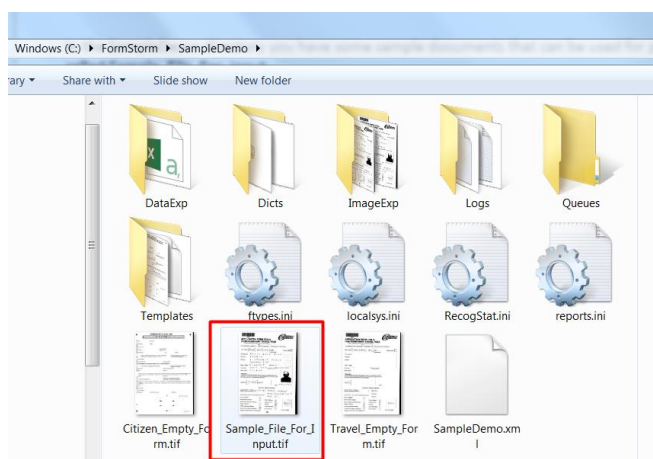
5. Completing the System

You can now continue to define all the fields in the Form in the same manner, either defining the field first and then drawing the appropriate region for that field and linking the region to the field or creating the region first and then defining the field

You can log out of the Tutorial system and log back into the SampleDemo system to see how the other fields were defined

Once all fields are defined in the Setup you can process images in the Tutorial system to see the results.

In the SampleDemo directory you have some sample documents that can be used for processing. The file is called Sample_File_For_input



THE END