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| Brighleaf Functional Specifications Document |

**DOCUMENT VERSION 0.2 Draft**

**24-Jan-2019**

**DOCUMENT HISTORY**

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| --- | --- | --- | --- |
| **Date** | **Version** | **Document Revision Description** | **Document Author** |
| 10-Jan-2019 | 0.1 Draft | First Draft of the Functional Specifications Document | Shama Tungare |
| 24-Jan-2019 | 0.2 Draft | Second draft after incorporating suggestions from Samir and Ranjita | Shama Tungare |
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**APPROVALS**

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| **Approval Date** | **Approved Version** | **Approver Role** | **Approver** |
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# 

# Introduction

This document describes the functional specifications of the new Text Extraction Engine (TEE). The functional specifications are based on the existing system. This document describes the system requirements from users’ perspective.

## Purpose of the document

The Functional Specification Document is a document that provides detailed information on *how* the system solution will function and the requested behavior. This document is created based on the high-level requirements identified. Included in this document will be the detailed functional requirements including use cases, system inputs and outputs, process flows, diagrams, and mock ups.

## Project Scope

The scope of the project is identifying the user, based on the role and responsibilities of the user, allow user to access certain part of the system, generate reports of users, create annotations, apply rules to documents, extract attributes, verify the extraction, and generate results.

## Scope of the document

The scope of the document is to list down all the functionalities TEE is going to perform, use cases, process flow and high-level schema design.

## Related documents

|  |  |  |
| --- | --- | --- |
| **Component** | **Name (with link to the document)** | **Description** |
|  |  |  |

## Terms/Acronyms and Definitions

|  |  |  |
| --- | --- | --- |
| **Term/Acronym** | **Definition** | **Description** |
|  |  |  |

## Risks and Assumptions

In the first phase, the system will support PDF documents (image/OCR) and proper text behind documents. In future the software will support PDF documents with tables and invoices.

In future, if any other document type needs to be supported, the software architecture will be modular enough to add a new chunker as this will be done using micro service design pattern.

# System/ Solution Overview

The goal of the system is to give access to only that part of the system to which the user is allowed, create annotations effortlessly and the process of creation of rules should be user friendly. Extraction should correctly extract attributes. Results should to exported to Excel.

## Process Flow – Admin Module

Company Table

User\_role Table

Super User

user Table

User\_loggin Table

Admin Module

## Process Flow – Company Admin Module

Company Table

user Table

User\_role Table

Company Administrator

Company Admin Module

## Process Flow – User Module

System Admin

Company Administrator

Rule Writer

AttributeTable

Mongo

Document\_type Table

Rule

Ruleset

Rule Executor

User Module

## Process Flow – QA Module

QA

Excel

Mongo

QA Module

## System Actors

### User Roles and Responsibilities / Authority Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **User/Role** | **Frequency of Use** | **Security/Access, Features Used** | **Additional Notes** |
| Super user | Occasionally | Create/Edit/Delete Company, Create/Edit/Delete User, assign user to company, Generate report on user login/logout |  |
| Company admin | Frequently | Edit company details, Create/Edit/Delete User, Assign user to company | There is going to be a facility by means of which additional responsibilities can be assigned to users. For example, user addition to company responsibility can be given to rule executer under some circumstances |
| Rule writer | Frequently | Create document types, create annotations for extractions |
| Rule Executer | Frequently | Execute core extraction |
| QA | Frequently | Verify all the extracted entities for correctness against the said document, once all the attributes are verified, generate results report |

# Functional Specifications

## Login

### Purpose/ Description

User needs to be authenticated against the database to make sure only authorized users use the system.

### Use case

|  |  |
| --- | --- |
| **UC-1** | **Login** |
| **Primary Actor(s)** | Super user, company admin, rule writer, rule executer, QA |
| **Trigger** | Start of the system |
| **Pre-conditions** | None |
| **Post-conditions** | User enters into the system |
| **Main Success Scenario** | User enters user ID and password. User ID and password are checked against the existing database. If the details are correct, user is allowed to use the system. |
| **Extensions** | Forgot Password |
| **Priority** | High |
| **Special Requirements** | At the very start of the new system, there should be at least one “super user” account exist in the system |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| User ID | User ID shall be a valid user ID in user table | Invalid user ID |  |
| Password | User ID and password combination should exist in user table | Incorrect user ID/password | Password will be encrypted using BCrypt (favored encoding mechanism for Spring Security) |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Login | Verify if user ID and password are correct. If yes, extract user\_role record and check if the user belongs to more than one company, if yes refer to UC-3 else check if the company to which user belongs has two factor authentications. If yes, refer to UC-4 else login the user in the system. | OnMouseHover display the following message: “Please provide your user ID” | Yes, always | Disabled, by default.  Enabled, after first key entered in either username or password field. | User Home page or Select Company or Send OTP | If user belongs to only one company, then user\_loggin\_in record to be added. |
| Forgot Password | Refer to UC-2 |  |  |  |  |  |

## Forgot Password

### Purpose/ Description

If user forgets password, there should be a facility to allow user to change the password.

### Use case

|  |  |
| --- | --- |
| **UC-2** | **Forgot Password** |
| **Primary Actor(s)** | Super user, company admin, rule writer, rule executer, QA |
| **Trigger** | Forgot Password link is clicked on login page |
| **Pre-conditions** | None |
| **Post-conditions** | Mail is sent to user as to how the password can be reset |
| **Main Success Scenario** | User enters user ID. User ID is checked against the existing database. If it exists then mail is sent to its corresponding email address. |
| **Extensions** |  |
| **Priority** | Medium |
| **Special Requirements** | At the very start of the new system, there should be at least one “super user” account exist in the system |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| User ID | User ID shall be a valid user ID in user table | Invalid user ID |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Reset | Verify if user ID exists in the user table. If yes, extract email address from the user table and send reset link to the corresponding email address via email. | OnMouseHover display the following message: “Please provide user ID” | Yes, always |  | Login page |  |

**Buttons, Links and Icons:**

## Select Company

### Purpose/ Description

If user is assigned to more than one company, user should select the company for which further work is going to be done.

### Use case

|  |  |
| --- | --- |
| **UC-3** | **Select Company** |
| **Primary Actor(s)** | company admin, rule writer, rule executer, QA |
| **Trigger** | User logs in successfully and user\_role table shows that the user belongs to more than one company |
| **Pre-conditions** | User login is successful and user belongs to more than one company |
| **Post-conditions** | User home page is displayed |
| **Main Success Scenario** | User selects company, either home page is displayed or pop-up for OTP comes |
| **Extensions** | Send OTP |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Company Name (drop down list) | Select all the companies the user belongs to from user\_role table and select corresponding company names from company table | Invalid user ID |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Select | Select the company, check the company table for OTP. If the company does not require OTP then extract the permissions for the user for the selected company from user\_role table else refer to UC-4 |  | Yes, always |  | Home page with selected permissions or Send OTP |  |

## Send OTP

### Purpose/ Description

If user selects a particular company and the requirement of the company is two-part-authentication, then OTP is sent to the email address of the user.

### Use case

|  |  |
| --- | --- |
| **UC-4** | **Send OTP** |
| **Primary Actor(s)** | All the users |
| **Trigger** | User selects a company which has two-part-authentication requirement |
| **Pre-conditions** | User selects a company |
| **Post-conditions** | User home page is displayed |
| **Main Success Scenario** | User enters correct OTP, home page is displayed |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| OTP | Not null | Please enter valid OTP |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Validate OTP | OTP entered by user is checked against the OTP generated by the system. If OTP is correct then the user successfully logs into the system and homepage is displayed |  | Yes, always |  | Home page with selected permissions |  |

**Buttons, Links and Icons:**

## User Activity Report

### Purpose/ Description

Super user can view the report on who had logged in, from which IP address, at what time, if the user has logged out, at what time, how the user logged out, and which company the user was working for.

### Use case

|  |  |
| --- | --- |
| **UC-5** | **User Activity Report** |
| **Primary Actor(s)** | Super user |
| **Trigger** | Super user logs in successfully and wants to view user activity report |
| **Pre-conditions** | Super user login is successful |
| **Post-conditions** | Report on user activity is displayed |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | Medium |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| User Name | The data is extracted from user\_logged\_in table and displayed |  |  |
| Email ID |  |  |
| Company |  |  |
| Logged in time |  |  |
| IP Address |  |  |
| Logged out time |  |  |
| Way logged out |  |  |

## Switch Company

### Purpose/ Description

If user is assigned to more than one company, user is allowed to change the company for which he is working

### Use case

|  |  |
| --- | --- |
| **UC-6** | **Switch Company** |
| **Primary Actor(s)** | company admin, rule writer, rule executer, QA |
| **Trigger** | User logs in successfully and user\_role table shows that the user belongs to more than one company |
| **Pre-conditions** | User login is successful and user belongs to more than one company |
| **Post-conditions** | Pop-up with a drop-down list of all the companies excluding the current company is displayed |
| **Main Success Scenario** | User selects company, user is logged out of the current company and logged in to the selected company |
| **Extensions** | Send OTP |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Company Name (drop down list) | Select all the companies the user belongs to from user\_role table and select corresponding company names from company table |  |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| OK | Log out the user from current company. If the selected company requires OTP, refer to UC-4 else log in the user in selected company, extract the permissions for that user for the selected company |  | Yes, always | Enabled | Homepage with selected permissions or send OTP |  |
| Cancel | Continue with the current selected company |  | Yes, always |  | Home page with current company |  |

## Add Company

### Purpose/ Description

Company is added to the system for which work will begin.

### Use case

|  |  |
| --- | --- |
| **UC-7** | **Add Company** |
| **Primary Actor(s)** | Super user |
| **Trigger** | User logs in successfully and user\_role table shows that the user belongs to more than one company |
| **Pre-conditions** | User login is successful and user belongs to more than one company |
| **Post-conditions** | Company gets added to the database, Edit company, Add user to company button gets activated |
| **Main Success Scenario** |  |
| **Extensions** | Edit company, Add user to company |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Company Name | Same name should not exist in the company table  Company name should not be blank  Company name cannot contain any special character | Company name already exists  Please enter company name  Only alphanumeric characters are allowed | Company name with special characters creates problem on MongoDB |
| Company Address | Not null | Please enter address |  |
| Contact Person |  |  |  |
| Contact Address |  |  |  |
| Website |  |  |  |
| FTP location |  |  |  |
| Output date format | Not null | Please enter output date format |  |
| OTP required | No (default) |  |  |
| Number of QC level | Default is 1 | Number of QC levels should be numeric |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| OK | Company details are added to the company table, date of creation and created by are also added to the table, Edit company and add user to company buttons are activated |  | Yes, always |  | Home page |  |
| Cancel | Form data is cleared |  | Yes, always |  | Home page |  |

## Edit Company

### Purpose/ Description

User wants to update the details of the company or add new users to the company

### Use case

|  |  |
| --- | --- |
| **UC-8** | **Edit Company** |
| **Primary Actor(s)** | Super user, company admin |
| **Trigger** | Company exists in company table and user wants to update details of the company or add users to the company |
| **Pre-conditions** | Company exists in the company table |
| **Post-conditions** | Company details are updated and new users added to the company |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Company Name | Same name should not exist in the company table  Company name should not be blank  Company name cannot contain any special character | Company name already exists  Please enter company name  Only alphanumeric characters are allowed | Company name with special characters creates problem on MongoDB |
| Company Address |  |  |  |
| Contact Person |  |  |  |
| Contact Address |  |  |  |
| Website |  |  |  |
| FTP location |  |  |  |
| Output date format | Not null | Output date format cannot be blank |  |
| OTP required |  |  |  |
| Number of QC levels | Default is 1 | QC levels should be numeric |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| OK | Company details are updated to the company table, date of modification and modified by are also updated in the table, and add user to company button is activated |  | Yes, always |  | Home page |  |
| Cancel | Clear the form |  | Yes, always |  | Home page |  |

**Buttons, Links and Icons:**

## Add User to Company

### Purpose/ Description

New users are to be added to the company

### Use case

|  |  |
| --- | --- |
| **UC-9** | **Add User to Company** |
| **Primary Actor(s)** | Super user, company admin |
| **Trigger** | Company exists in company table and user wants to add users to the company |
| **Pre-conditions** | Company exists in the company table |
| **Post-conditions** | Company details are updated and new users added to the company |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| User ID | If ID already exists in the user table, extract the details and display | User ID cannot be blank |  |
| email | Cannot be blank | Email cannot be blank |  |
| Name |  |  |  |
| Address |  |  |  |
| Phone |  |  |  |
| Role | Display available roles from role table |  |  |
| Permissions | Show permissions according to role from role table and user can add or remove permissions |  |  |

**Form Business Rules and Dependencies:**

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| OK | User details are stored/updated in the user\_info table, date of addition or modification and added by or modified by are also updated in the table, user\_role table is updated with the user ID, company ID, role ID and permissions. |  | Yes, always |  | Home page |  |
| Cancel | Clear the form |  | Yes, always |  | Home page |  |

## Add Document Type

### Purpose/ Description

User wants to add document type for generating annotations

### Use case

|  |  |
| --- | --- |
| **UC-10** | **Add Document Type** |
| **Primary Actor(s)** | Rule writer |
| **Trigger** | User wants to add rules and before adding rules if document type for which user wants to add rules does not exist |
| **Pre-conditions** |  |
| **Post-conditions** | Document type is added to the table |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Grid | All existing document types and descriptions are displayed along with Edit and Delete button |  |  |
| Document Type | Not null | Document type cannot be blank |  |
| Description |  |  |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| OK | Document type and description gets added to the table |  | Yes, always | Disabled in the beginning, enabled after first character input in document type | Dashboard |  |
| Cancel | Clear the form |  | Yes, always |  | Dashboard |  |
| Edit | Same form with selected document type and description displayed |  | Yes, always in the grid |  | Document type update form |  |
| Delete | The selected document type is displayed |  | Yes, always in the grid |  | Pop-up asking for confirmation | There does not exist any rule for the selected document type |

## Add Attribute

### Purpose/ Description

User wants to add attributes for generating annotations

### Use case

|  |  |
| --- | --- |
| **UC-11** | **Add Attribute** |
| **Primary Actor(s)** | Rule writer |
| **Trigger** | User wants to add rules and before adding rules if attribute for which user wants to add rules does not exist |
| **Pre-conditions** |  |
| **Post-conditions** | Attribute is added to the table |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Grid | All existing attributes are displayed along with Edit and Delete button |  |  |
| Attribute Name | Not null | Attribute Name cannot be blank |  |
| Description |  |  |  |
| QC levels | Number of QC levels for the attribute (default will be 1) | Number of QC levels cannot be blank  Number of QC levels should be integer |  |
| Attribute type | Type of attribute can be normal attribute, clause, paragraph (this will change as we get more types of documents) |  |  |

**Implementation of QC levels for attributes, has to be worked out.**

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| OK | Attribute name, description, QC levels and attribute type gets added to the table |  | Yes, always | Disabled in the beginning, enabled after first character input in document type | Dashboard |  |
| Cancel | Clear the form |  | Yes, always |  | Dashboard |  |
| Edit | Same form with selected attribute name is displayed |  | Yes, always in the grid |  | Document type update form |  |
| Delete | The selected attribute name is displayed |  | Yes, always in the grid |  | Pop-up asking for confirmation | There does not exist any rule for the selected document type |

## Annotation

### Purpose/ Description

User wants to add rules for extraction for a type of document

### Use case

|  |  |
| --- | --- |
| **UC-12** | **Annotation** |
| **Primary Actor(s)** | Rule writer |
| **Trigger** | User wants to add rules for extraction or edit existing rules |
| **Pre-conditions** |  |
| **Post-conditions** | Rules are added to the company for which the user is working |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Document Type | Drop down list of document types from document type table. | Document type cannot be blank |  |
| Grid | For selected document type, existing rules are displayed in the grid with edit and delete buttons |  |  |
| Reference PDF | Select a PDF file from local/ftp location | PDF name cannot be blank |  |
| PDF Viewer | User can view the selected PDF file in this part of the page |  | Page will be divided in two parts. One part will display PDF and other part will be rule creation |
| Attribute | Drop down list of available attributes, additionally user can write new attribute name | Attribute name cannot be blank |  |
| Text before Attribute (5 fields) | Highlighted text to be pasted here | Text before and after attribute cannot be blank | Text before will be text1 and/or text2 and/or text3 etc |
| And/Or toggle button |  |  |
| Text after attribute (5 fields) | Highlighted text to be pasted here | Text after will be text1 and/or text2 and/or text3 etc |
| And/Or toggle button |  |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Edit | Form displayed with existing rule |  |  |  |  |  |
| Delete | Pop-up confirming delete |  |  |  |  | Rule can be deleted only if it is not applied in any existing transactions |
| OK | Rule gets added to the rule table |  | Yes, always |  | Dashboard |  |
| Cancel | Clear the form |  | Yes, always |  | Dashboard |  |

## Create Rule Set

### Purpose/ Description

User has created rules and now user wants to group few rules together to form a rule set which can be applied to a document or set of documents

### Use case

|  |  |
| --- | --- |
| **UC-13** | **Create Rule Set** |
| **Primary Actor(s)** | Rule writer |
| **Trigger** | User has created rules for extraction and user wants to group some of them together to apply to a document or set of documents |
| **Pre-conditions** | Rules are added to the company for which the user is working |
| **Post-conditions** | Selected rules are added to rule\_set table |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Type of document | Drop down list showing all the available types of documents from rule table |  |  |
| Rule Set Name | Not null | Rule Set Name cannot be blank |  |
| Attribute | Drop down list showing available attributes |  | If user had selected rules for this attribute, show the selected rules in right pane and (available – right pane rules) in left pane |
| Rules | Available rules on left pane |  |  |
| Group Rules | Move from left pane to right pane |  |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Save | Save in local storage  Attribute and rules |  | Yes, always |  | Dashboard |  |
| Done | Rule gets added to the rule\_set table |  |  |  |  |  |
| Cancel | Clear the form |  | Yes, always |  | Dashboard |  |

Cancel

Done

Type of Document:

Rule Set Name:

Attribute:

Selected Rules

Save

Available Rule

## Execute Transaction

### Purpose/ Description

User wants to execute a transaction on a selected document or on set of documents in single or batch mode

### Use case

|  |  |
| --- | --- |
| **UC-14** | **Execute Transaction** |
| **Primary Actor(s)** | Rule executer |
| **Trigger** | User wants to execute transaction on a selected document or set of documents in batch mode |
| **Pre-conditions** | Rules are created for the company |
| **Post-conditions** | Attributes are extracted and stored on MongoDB |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Radio Button  **Execution Type**  Single / Batch |  |  |  |
| Radio Button  **Document Location**  FTP / Local | If FTP is selected then FTP location is extracted from company table |  |  |
| Select File(s) | Not null | File name cannot be blank |  |
| Type of Document | Drop down list is filled with available document types | Type of document cannot be blank |  |
| Rule Set | Drop down list of available rule sets (select rule\_set\_name from rule\_set, rule where rule\_set.rule\_id = rule.rule\_id and rule.document\_type = selected document type) | Rule set cannot be blank |  |
| Output Date Format | Dropdown with possible date formats |  |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| OK | Attributes are extracted according to selected rules and stored in MongoDB |  | Yes, always |  | Dashboard |  |
| Cancel | Clear the form |  | Yes, always |  | Dashboard |  |

## Show Results

### Purpose/ Description

Transaction has been executed and results are produced, now user wants to verify the results for correctness, export the verified results to Excel or delete transaction

### Use case

|  |  |
| --- | --- |
| **UC-15** | **Show Results** |
| **Primary Actor(s)** | Rule executer |
| **Trigger** | User wants to see the results of all transactions |
| **Pre-conditions** | Execute transaction is done and results are stored in MongoDB |
| **Post-conditions** | User either selects verify results or export results depending on the case |
| **Main Success Scenario** |  |
| **Extensions** | Verify Results, Export Results |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Transaction ID | All the transaction IDs from database are displayed |  |  |
| Transaction Date |  |  |  |
| Transaction Status |  |  |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Verify | Refer to UC-15 |  | Yes |  |  |  |
| Export | Refer to UC-16 |  | Yes | If all the attributes from the transaction are not verified then this button is disabled | Export to Excel |  |
| Delete | Refer to UC-17 |  | Yes |  |  |  |
| Assign next level of QC | Refer to UC-18 |  | Yes | Enabled only after all the attributes are verified and current level of QC is < max level QC required by company |  |  |

## Verify Results

### Purpose/ Description

Transaction has been executed and results are produced, now user wants to verify the results for correctness of a particular transaction and user clicks on the transaction ID displayed in UC-13.

### Use case

|  |  |
| --- | --- |
| **UC-16** | **Verify Results** |
| **Primary Actor(s)** | Rule executer |
| **Trigger** | User wants to verify the results |
| **Pre-conditions** | Execute transaction is done and results are stored in MongoDB |
| **Post-conditions** | If attribute values are changed during verification process then old value and new value is stored in MongoDB. In all cases verified status, verified date and verified by are updated and saved |
| **Main Success Scenario** | User verifies the results and verified results are stored in MongoDB. If the user has changed the value of the result then old value and changed value is stored in MongoDB |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Transaction ID | Selected transaction ID |  |  |
| Transaction Date | Date of transaction |  |  |
| Attribute Name | All the attributes extracted in the transaction |  |  |
| Chunk | Chunks corresponding to the attribute |  |  |
| Attribute value | Actual value extracted |  |  |
| PDF Viewer on right pane | Selected chunk is highlighted on the PDF |  |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Verify | Attribute is verified, if attribute change value field is not blank then old value and new value is stored in MongoDB. MongoDB will also store the user ID of the person who has currently logged in and made changes. In all cases verified status, verified date and verified by are updated and saved |  | Yes, always |  | Same page |  |

## Export Results

### Purpose/ Description

All the attributes from a transaction are verified and now user wants to export results to Excel

### Use case

|  |  |
| --- | --- |
| **UC-17** | **Export Results** |
| **Primary Actor(s)** | Rule executer |
| **Trigger** | User wants to export the results to Excel |
| **Pre-conditions** | All the attributes from a transaction are verified |
| **Post-conditions** | All the attributes belonging to the transaction are exported to Excel |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

**Form Business Rules and Dependencies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Transaction ID |  |  |  |
| Transaction Date |  |  |  |
| Transaction Status |  |  |  |

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Export | All the attributes are exported to Excel |  | Yes, always | Disabled. In case all the attributes are verified, the button is enabled | Same page |  |

## Assign next level QC

### Purpose/ Description

All the attributes from a transaction are verified and now user wants to assign next QC level

### Use case

|  |  |
| --- | --- |
| **UC-18** | **Export Results** |
| **Primary Actor(s)** | Rule executer |
| **Trigger** | User wants to export the results to Excel |
| **Pre-conditions** | All the attributes from a transaction are verified |
| **Post-conditions** | All the attributes belonging to the transaction are exported to Excel |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| QC Personnel |  |  |  |

**Form Business Rules and Dependencies:**

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Assign | The selected user is assigned as next level QC person |  | Yes, always | Disabled initially. In case all the attributes are verified and current level of QC is < max level QC required by the company, the button is enabled | Same page |  |

## Delete Transaction

### Purpose/ Description

User wants to delete transaction

### Use case

|  |  |
| --- | --- |
| **UC-19** | **Delete Transaction** |
| **Primary Actor(s)** | Rule executer |
| **Stakeholders and Interest** |  |
| **Trigger** | User wants to delete a transaction |
| **Pre-conditions** | Transaction is executed but user wants to delete a transaction |
| **Post-conditions** | The transaction is deleted from MongoDB |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Transaction ID |  |  |  |
| Transaction Date |  |  |  |
| Transaction Status |  |  |  |

**Form Business Rules and Dependencies:**

**Buttons, Links and Icons:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Delete | Pop up asking for confirmation, if confirmed deletion, the transaction is delete from MongoDB and the corresponding files for the transaction are deleted |  | Yes, always |  | Same page |  |

## Assign Keywords

### Purpose/ Description

User wants to assign keywords for attributes which will be useful for extraction

### Use case

|  |  |
| --- | --- |
| **UC-20** | **Delete Transaction** |
| **Primary Actor(s)** | Rule writer |
| **Stakeholders and Interest** |  |
| **Trigger** | User wants to assign keywords to attributes |
| **Pre-conditions** |  |
| **Post-conditions** | Keyword will be assigned to attribute which will help in further extraction |
| **Main Success Scenario** |  |
| **Extensions** |  |
| **Priority** | High |
| **Special Requirements** |  |
| **Open Questions** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Label** | **Validation / Business Rules** | **Error Messages** | **Additional Info/ Notes** |
| Keyword | Not null | Keyword cannot be null |  |
| Attribute Name | Attribute name from attribute table |  | Keyword and attribute name will be displayed in a grid with Edit and Delete buttons |

**Form Business Rules and Dependencies:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Button, Link, Icon Label** | **OnClick Event** | **Other Event** | **Visible** | **Enabled Vs Disabled** | **Navigate To** | **Dependencies** |
| Assign | Keyword and attribute id will be stored in keyword table |  | Yes, always |  | Same page |  |
| Cancel | All the changes will be cancelled |  | Yes, always |  | Same page |  |
| Edit | Same form |  |  |  |  |  |
| Delete | Confirmation message, if confirmed delete the record |  |  |  |  |  |

**Buttons, Links and Icons:**

# System Configurations

MySQL and MongoDB to be installed

MySQL should have entire schema and basic master tables

Tomcat installed

# Schema

**Role**

role\_id

role name permission\_id

**Company**

company\_ID

company name

company\_address

contact person contact phone

output date format

creation date modification date created by

last modified by

MFA

Number of QC levels

Isdeleted

FtpLocationId

**Permission**

permission\_id permission\_name

creation date modification date

created by

last modified by

**Service\_configuration**

id

service name

host

port

**Login\_detail**

user\_id

company\_id

login time

logout time

IP address session

logout method

**User\_Role**

user\_id

company\_id

role\_id

user\_permissions

**Mongo\_configuration**

id

property

value

company\_id

**User\_info**

user\_id

email

password

name

creation date modification date

created by

last modified by

Used to display dashboard with limited permission

**FTPLocation**

Base\_location

ftp\_protocol

ftp\_host

ftp\_username

ftp\_password

Cration\_date

Created\_by

Last\_modoification\_date

Last\_modified\_by

**Rule**

rule\_id

document\_type

attribute\_id

text\_before1

op\_before1

text\_before2

op\_before2

text\_before3

op\_before3

text\_before4

op\_before4

text\_before5

text\_after1

op\_after1

text\_after2

op\_after2

text\_after3

op\_after3

text\_after4

op\_after4

text\_after5

created\_by modified\_by creation\_date modification\_date

**Rule\_Rule\_set**

rule\_set\_id

rule\_id

**Attribute**

attribute\_id

attribute\_name

description

QC\_levels

attribute\_type

created\_by

modified\_by

creation\_date

modification\_date

**Keywords**

keyword\_id

attribute\_id

value

value

**Document\_type**

document\_type\_id

description

Rule\_set, Keywords, company, mongo\_configuration tables are used for extraction

This table is used to specify special keywords for attribute extraction, like “inc”, “corp” etc for organization, “euro”, “rand” etc for currency

**Rule\_set**

rule\_set\_id

rule\_set\_name

created by

modified by creation\_date modification\_date

# Screen Layout

The general screen layout will have Brightleaf logo on the top. The screen will be divided in left pane and right pane. The divider can be moved or collapsed. This will give more visual space. On the left pane buttons will be placed and right pane will be used for executing command.

Company Name

Switch Company

Home

Transaction

Report

Result

Annotation

This divider will separate button pane from data pane. It will be movable and also expand/collapse type. This will give more visual area for transaction execution and result verification

Brightleaf Logo

User Name