



Merchant Onboarding Demonstration User Guide

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1.0 System Overview

The Merchant Onboarding system is an integrated web based application. Our targeted users are financial institutions who need to make critical assessment before onboard their potential business partners. Moreover, our system provides their potential partners with accessibility to an assessment submission platform. The web platform will require users (potential business partners) to input several key information of their business.

1.1 User Interface

The front-end system is built with HTML5 using Python Django framework.

2.0 Requirements

2.1 Recommended Browsers

Merchant Onboarding demonstration supports the following web browsers:

- Internet Explorer 11
- Microsoft Edge 39 and above
- Firefox 53 and 52 ESR and above
- Google Chrome Version 59 and above
- Safari Version 10 and above

3.0 Deployment

Our system is capable of running on both Windows or Linux Systems. To demonstrate, we will only deploy in ISS Virtual Machine.

3.1 Prepare and run KIE Workbench with ISS VM

1. Download pre-built virtual machine from <http://bit.ly/iss-vm>
2. Start iss-vm
3. Open terminal in iss-vm
4. Start the Tool KIE 7.12 on desktop
5. Wait until KIE server successfully started up

3.2 Setup the JBPM project on KIE Workbench

1. Go to jBPM web console using browser: <http://localhost:8080/jbpm-console>

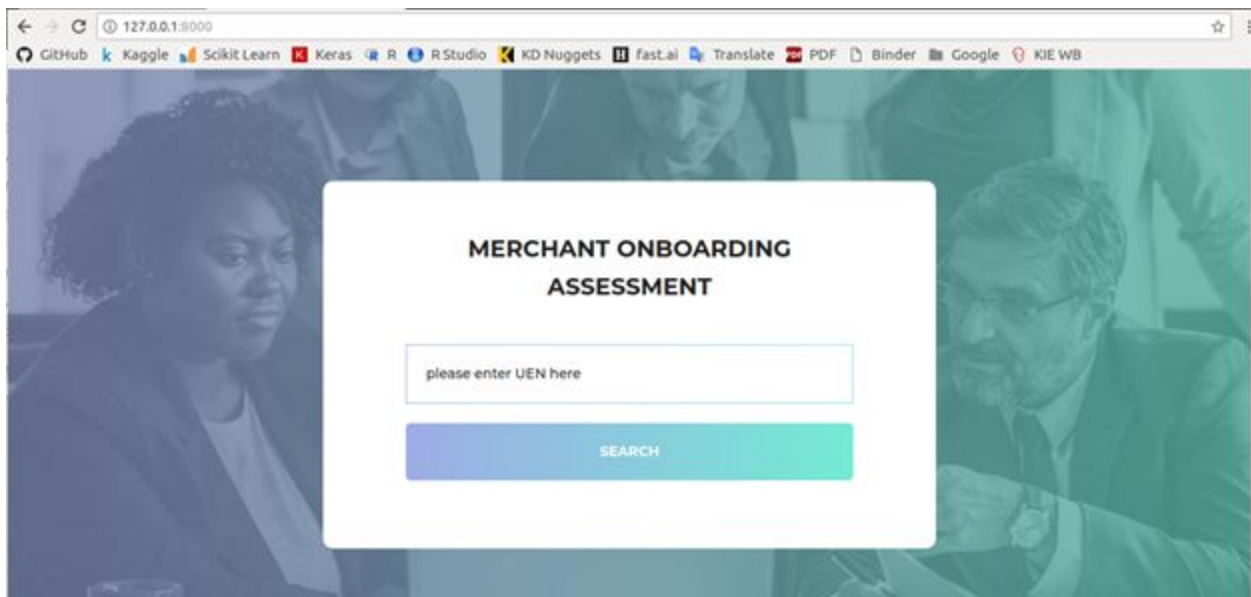
2. Login using username/password: **wbadmin/wbadmin**
3. Import project using git import within KIE Workbench from URL:
https://github.com/gu-lijian/IRS-MR-2019-01-19-IS1PT-GRP-ai.Orz-MerchantOnboarding
4. Deploy the MerchantOnboarding Project, and make sure it is running with version **1.0.0**

3.3 Setup the Python Web Platform

1. Make sure django framework is available: ***pip install django***
2. Make a new directory, and start a command prompt at this directory
3. Clone project from github: ***git clone https://github.com/gu-lijian/mr_groupproject_web.git***
4. Navigate to web platform directory: ***cd /mr_groupproject_web/merchantapp***
5. Run command to execute Web Platform: ***python manage.py runserver***
6. Go to Web Platform URL using web browser: ***http://127.0.0.1:8000/***

4.0 Walkthrough

Open up your preferred browser and go to the URL “http://127.0.0.1:8000” as shown below:



Key in your Unique Entity Number (UEN: e.g. 53272992K) and Click on the “Search” button. Please note that our system queries real life ACRA API which returns actual data related to this UEN. Failure of providing correct UEN will lead to rejection of application. Below is an example:

MERCHANT ONBOARDING ASSESSMENT

Sdq321dsasa

SEARCH

UEN VERIFICATION

UEN not found from ACRA! Assessment result: Rejected.

You may verify again [here](#)

Upon successfully validate UEN, the system will display corresponding business entity information. Shown below:

UEN VERIFICATION

UEN: 53272992K
Business Activity: WHOLESALE AND DISTRIBUTOR OF PETS AND PETS RELATED PRODUCTS
Street Name: WOODLANDS INDUSTRIAL PARK E1
Building Name: ADMIRALTY INDUSTRIAL PARK
Block: 25
Unit No: 04
Postal Code: 757743
Registration Date: 2014-09-03T17:26:48
Entity Name: 316 PET SUPPLIES
Entity Status: Live

PROCESS TO ASSESS

Once user clicks “Process To Assess” button, the system will prompt 7 fields for user to key in. Shown below:

MERCHANT DETAILS

UEN: 53272982W

Please enter CEO NRIC here

Please enter net income here

Please enter employee size here

Please enter founding year here

Please select founding country here

Please enter total deposit value here

Please enter VAT ID here

SUBMIT

After all the critical information have been obtained, the web platform will kick start assessment process on back-end system (jBPM). Using our back-end rule engine, the system will then output back-end process id and certainty factors that describe user's business entity from 3 perspectives and an overall final certainty factor. Below shows one such example of the output:

INITIAL ASSESSMENT RESULT

Your Process ID: 4
Operational Certainty Factor: 0.6
Credibility Certainty Factor: 0.0
Financial Certainty Factor: 0.2
Combined Factor: 0.68

CHECK STATUS

Now that application has been submitted to back-end user (bank: wbadm in this case) for final approval. System will display final result once back-end user completes the process. Shown below:

ASSESSMENT RESULT

You Assessment Result is not out yet.

[CHECK AGAIN](#)

[Return Home](#)

Home » Task Inbox » Task: 4

4 - Onboard

1990

Financial Assessment Certainty Factor

0.2

Operational Assessment Certainty Factor

0.6

Credibility Assessment Certainty Factor

Credibility Assessment Certainty Factor

Outputs:

Final Assessment Result

Final Assessment Result

Claim

Home » Task Inbox » Task: 4

4 - Onboard

1990

Financial Assessment Certainty Factor

0.2

Operational Assessment Certainty Factor

0.6

Credibility Assessment Certainty Factor

Credibility Assessment Certainty Factor

Outputs:

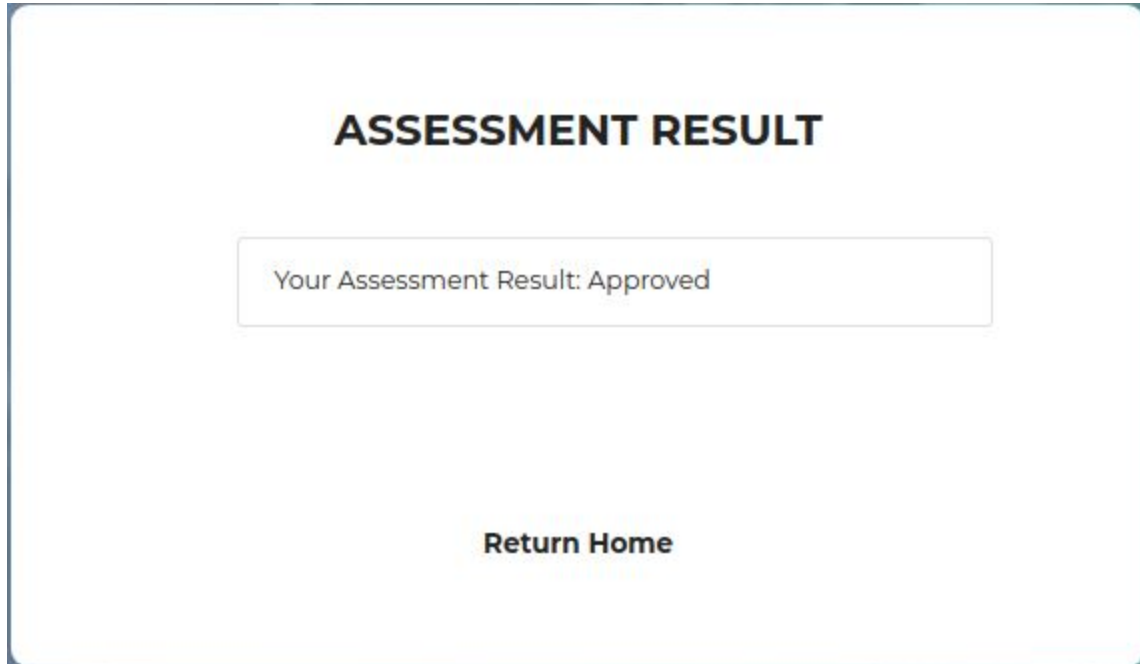
Final Assessment Result

Approved

Save

Release

Complete



5.0 Business Scenarios - Sample Input and System Output

5.1 Scenario 1

SCENARIO 1 Characteristic of user (Standard Case)	There could be 3 types of users/applicants 1. Companies that have not registered with ACRA. (No valid UEN ID). 2. UEN ID was inaccurate/incomplete. 3. Fraud programs who send random data for the purpose of hacking.
Questions:	Are we able to retrieve basic info from ACRA with the UEN? Outcome: If no, the request is stopped at the web server end, blocked from reaching KIE engine. The whole onboarding process stopped here.

5.2 Scenario 2

SCENARIO 2 Characteristic of user (Standard Case)	Companies who have proper registration with ACRA, but has incomplete background information.
Questions:	<p>Is the company able to provide all 3 categories of information?</p> <ol style="list-style-type: none"> 1. Financial info 2. Operational info 3. Credibility Info <p>Outcome: If no, it is highly likely the application will be rejected.</p>

5.3 Scenario 3

SCENARIO 3 Characteristic of user (Standard Case)	Companies who have proper registration with ACRA, provide all the required information, but have some serious/suspicious issue in some of the key information.
Questions:	<p>Does this company have major issue in any of the key indicators?</p> <p>Outcome: Each indicator will be evaluated with certain weightage, and the overall weighted calculation with all the key values, unhealthy/suspicious figures would result in the application getting rejected.</p>

5.4 Scenario 4

SCENARIO 4 Characteristic of user (Standard Case)	Companies who are eligible for onboarding.
Questions:	<p>Does this company receive quick feedback regarding their application?</p> <p>Outcome: If the 3 type of data entered by the company is correct and the decision table rules have shown the positive result. The final approver (human) will be notified immediately.</p> <p>On the human task screen, a few simple clicks will complete the whole application process and applicant company will receive the notification.</p>