

USER GUIDE

REQUIREMENTS

RECOMMENDED BROWSERS

Supports the following Web Browsers:

- Microsoft Edge 39 and above
- Firefox 53 and 52 ESR and above
- Google Chrome Version 59 and above

SYSTEM OVERVIEW

LOT disposition recommendation system aims to assign the LOH responsibility to respective functional domains based on certain pre-defined rules. Firstly, the test measurement data is extracted and statistical tests are performed on the possible contributing factors (site-related, temperature-related, hardware-related or test program-related) to determine the cause of the low yield which trigger the LOH. The statistical tests performed indicate the significance of the factors contributing to the violation. Then, the test outcomes will decide the lot disposition assignment based on certain pre-defined production rules.

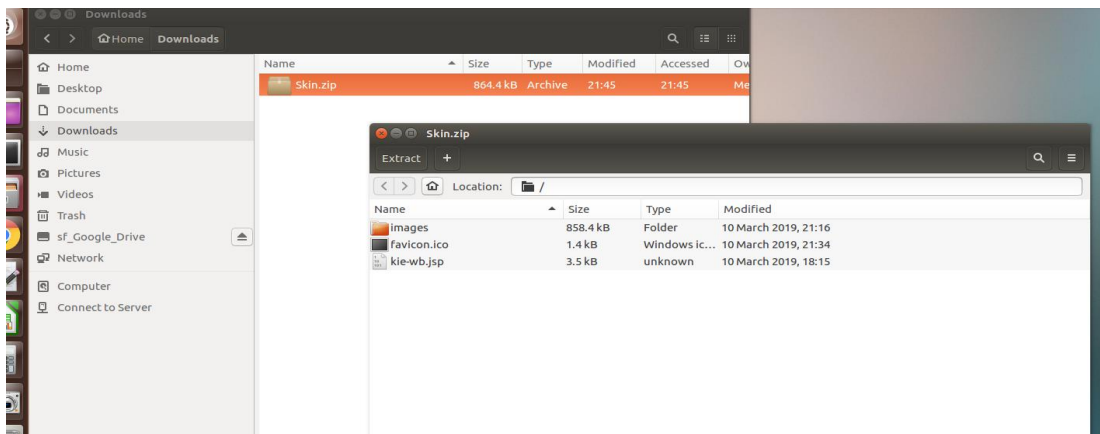
Finally, the engineering domain that is assigned for the LOH disposition will carry out further investigation to mitigate the problem, by assessing the risk and perform corrective action accordingly.

The application is designed only for single product use with the assumption that the product tested are with sufficient production lot loading.

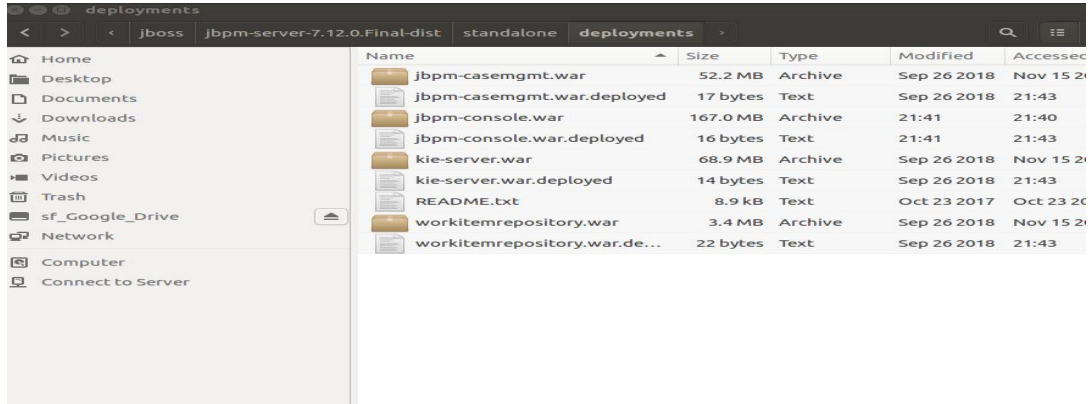
USER INTERFACE

Our user interface base on KIE Workbench. Once users input the information, the data will be get by R script and rule engine, which will help to assign the issues to different engineer.

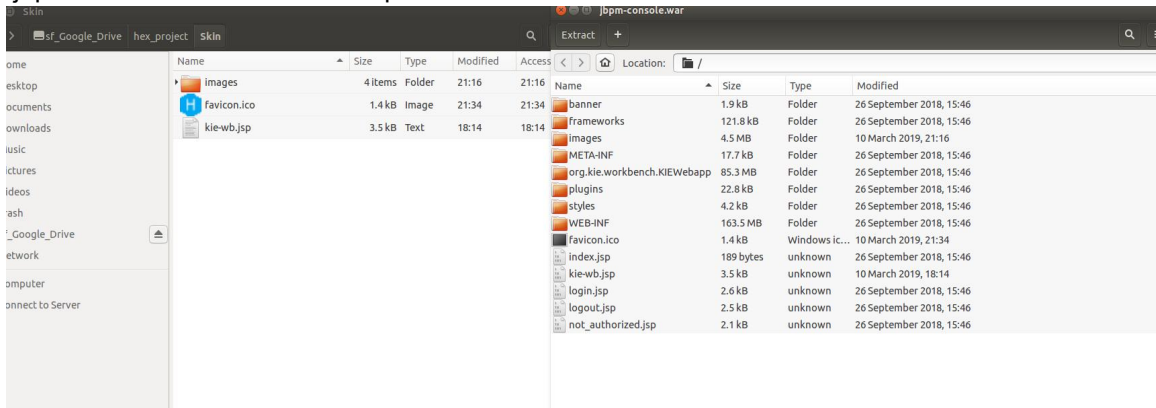
To use our HEX skin for this project, please download “Skin.zip” from the Misc Folder. Extract its contents somewhere.



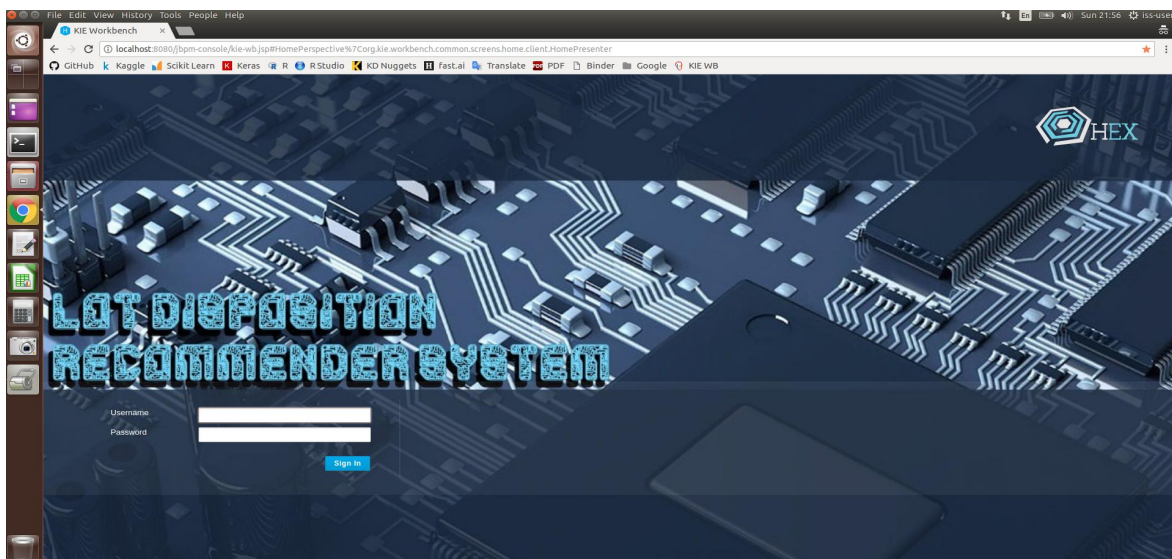
Next, navigate to the directory of JBPM (In the VM, /iss-vm-program/is-intelligent-reasoning-systems/jboss/jbpm-server-7.12.0.Final-dist/standalone/deployments).

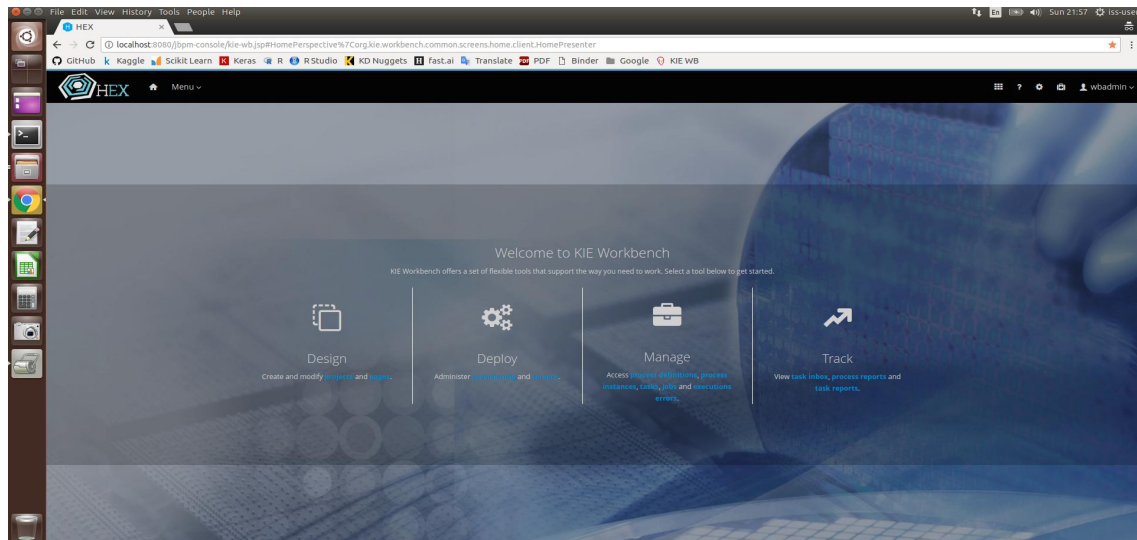


Back up jbpms-console.war in another folder. Make sure jbpms server is not started (important!). Open up jbpms-console.war after backed up.



Drag all of the skin's contents into jbpms-console.war. After that, it's done. You can proceed to start up KIE server.





DEPLOYMENT

Our system is deployed by KIE Drools and R script. In order to run the system, you will need to install:

- Java (1.8.0_191 and above)
- R (3.4.3 and above)
- KIE Workbench (7.12 and above)

IMPORT PROJECT

1. Download and unzip the project under path /home/iss-user/Desktop/workshop

```

iss-user@iss-vm: ~/Desktop/workshop
File Edit View Search Terminal Help
iss-user@iss-vm:~/Desktop/workshop$ pwd
/home/iss-user/Desktop/workshop
iss-user@iss-vm:~/Desktop/workshop$ ll
total 400
drwxrwxr-x 6 iss-user iss-user 4096 Mar  8 21:33 ./
drwxr-xr-x 4 iss-user iss-user 4096 Mar  8 23:07 ../
-rwxrwx-- 1 iss-user iss-user 299120 Dec 27 2017 Anaconda-Navigator cheatsheet.pdf*
-rw-rw-r-- 1 iss-user iss-user 14111 Dec 25 2017 animal.clp
-rw-rw-r-- 1 iss-user iss-user 2653 Dec 25 2017 git clone example.ipynb
-rw-rw-r-- 1 iss-user iss-user 24878 Jan 17 2018 health-check-Python.ipynb
-rw-rw-r-- 1 iss-user iss-user 17391 Dec 25 2017 health-check-R.ipynb
-rw-rw-r-- 1 iss-user iss-user 3060 Mar 15 2018 health-check-Rstudio.R
drwxrwxr-x 5 iss-user iss-user 4096 Mar  7 01:04 Hex_Lot_Project/
drwxrwxr-x 8 iss-user iss-user 4096 Mar  8 21:36 ISS_MR/
drwxrwxr-x 2 iss-user iss-user 4096 Mar 16 2018 orange-exanple/
-rw-rw-r-- 1 iss-user iss-user 564 Dec 28 2017 README
-rw-rw-r-- 1 iss-user iss-user 382 Oct 27 09:20 .Rhistory
drwxrwxr-x 2 iss-user iss-user 4096 Mar 16 2018 sql-example/
iss-user@iss-vm:~/Desktop/workshop$

```

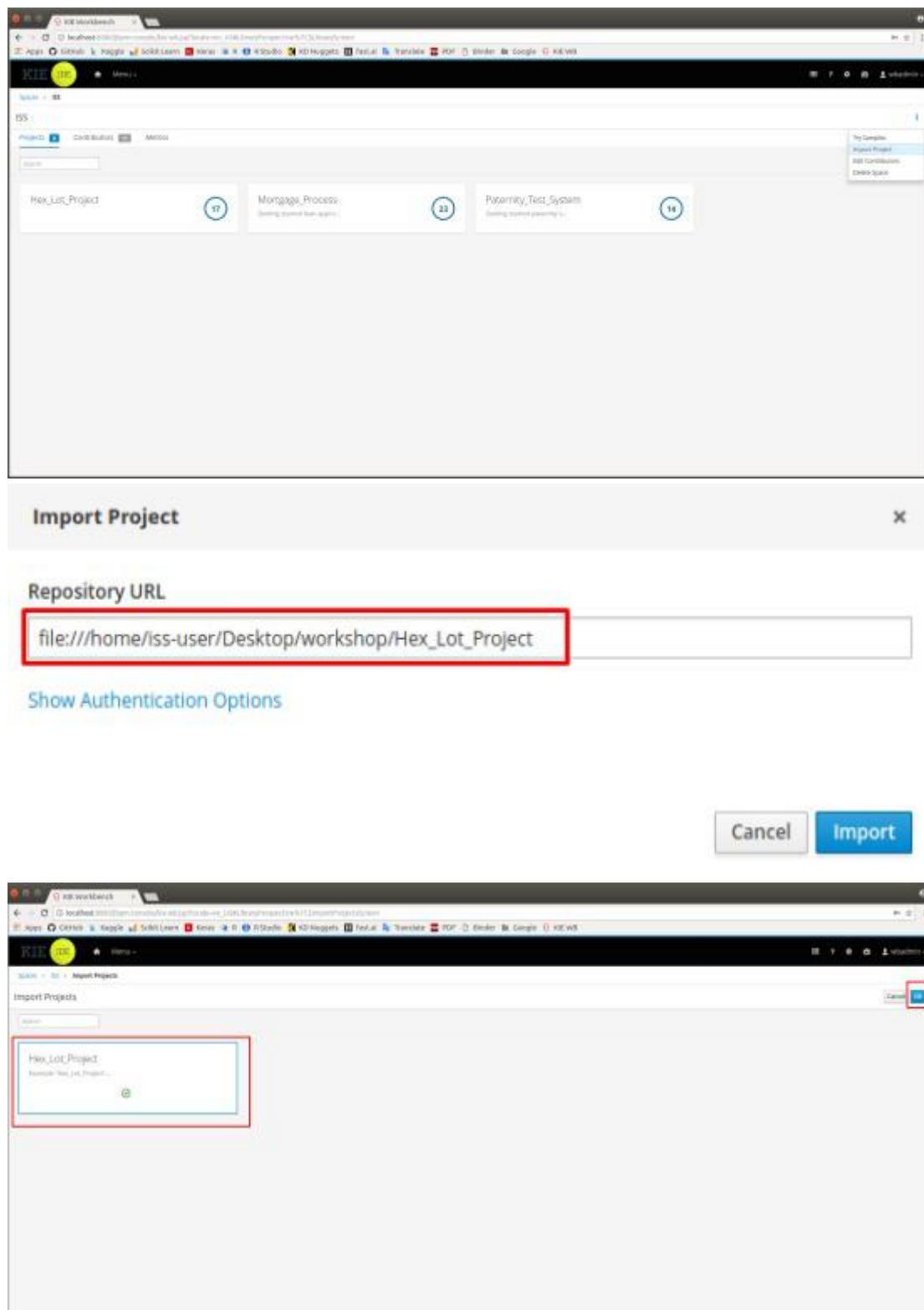
2. Put the required R script and csv file from Miscellaneous folder and put them under the /home/iss-user/Downloads (Should be exactly the same path).

```

iss-user@iss-vm: ~/Downloads
File Edit View Search Terminal Help
iss-user@iss-vm:~/Downloads$ pwd
/home/iss-user/Downloads
iss-user@iss-vm:~/Downloads$ ll
total 572
drwxr-xr-x 4 iss-user iss-user 4096 Mar  9 17:29 ./
drwxr-xr-x 64 iss-user iss-user 4096 Mar  9 17:59 ../
-rw-rw-r-- 1 iss-user iss-user 8136 Mar  9 16:55 commonality test.R
-rw-rw-r-- 1 iss-user iss-user 1550 Feb 26 11:22 ISS_Work_Helix_Project_src_main_java_com_iss_work.zip
-rw-rw-r-- 1 iss-user iss-user 8118 Mar  6 00:39 lotList.csv
-rw-rw-r-- 1 iss-user iss-user 8 Mar  9 17:50 processData.csv
-rw-rw-r-- 1 iss-user iss-user 104 Mar  9 17:50 processResult.csv
-rw-rw-r-- 1 iss-user iss-user 507235 Mar  3 22:05 rawData.csv
-rw-rw-r-- 1 iss-user iss-user 79 Feb 25 22:59 readme.md
-rw-rw-r-- 1 iss-user iss-user 0 Mar  9 16:58 .Rhistory
-rw-rw-r-- 1 iss-user iss-user 2059 Mar  5 21:04 RulesCSV.csv
-rw-rw-r-- 1 iss-user iss-user 8800 Feb 21 01:01 S-MR bank loan exanple v001.xlsx
drwxrwxr-x 5 iss-user iss-user 4096 Mar  3 16:14 testProj/
drwxrwxr-x 6 iss-user iss-user 4096 Dec 17 09:55 Workshop-Project-Submission-Template-master/
iss-user@iss-vm:~/Downloads$

```

3. Run the KIE Workbench and import the project

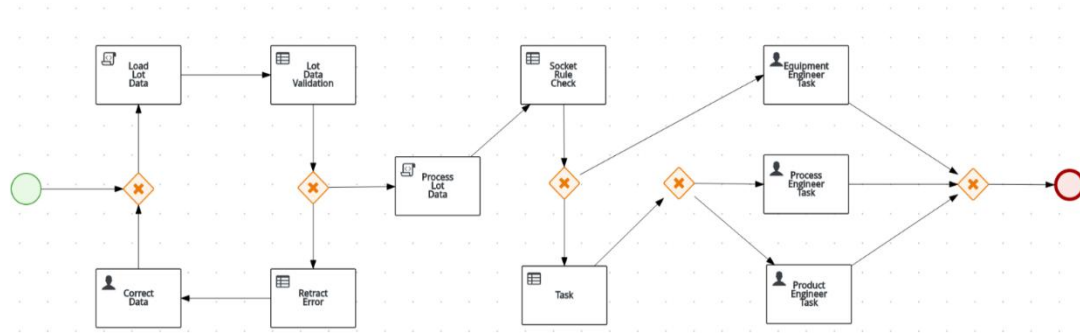


4. Create user:

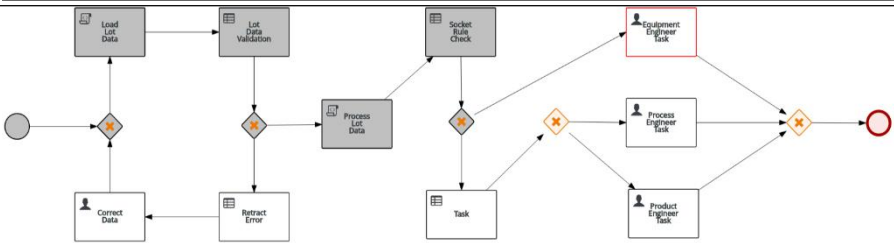
Role	Group	User
user	kie-server	Technician
user	kie-server	EquipmentEngineer
user	kie-server	ProcessEngineer
user	kie-server	ProductEngineer

APPENDIX B: Sample system input and output

BUSINESS PROCESS MODEL



TEST SCENARIO

Test Case 1	Login as Technician Lot Number : lot6 Meas Step : B2 The Task is assigned to EquipmentEngineer
User Input	<div> <div>Start process instance</div> <div> <div>Correlation key</div> <div>Form</div> <div>LRequest</div> <div> <div>Lot Number *</div> <div>lot6</div> </div> <div> <div>Meas Step *</div> <div>B2</div> </div> <div>TResult</div> <div> <div> <input type="checkbox"/> Socket Number <input type="checkbox"/> Load Board </div> <div> <input type="checkbox"/> Handler <input type="checkbox"/> Tester </div> <div> <input type="checkbox"/> Test Program <input type="checkbox"/> Kelvin Temp </div> </div> <div>Submit</div> </div> </div>
System out put	 <div> <div>Login as Equipment Engineer</div> <div> <div> <div>Home</div> <div>Task instance</div> <div>Task: 3</div> </div> <div>3 - Equipment Engineer Task</div> <div> <div>Work</div> <div>Details</div> <div>Assignments</div> <div>Comments</div> <div>Admin</div> <div>Logs</div> </div> <div> <div>Outputs:</div> <div>LRequest</div> <div> <div>Assign User</div> <div>Equipment Engineer</div> </div> <div> <div>Lot Number</div> <div>lot6</div> </div> <div> <div>Meas Step</div> <div>B2</div> </div> <div> <div>Lot Qty</div> <div>1000</div> </div> <div>Test Result</div> <div> <div> <input type="checkbox"/> Socket Number <input type="checkbox"/> Load Board </div> <div> <input type="checkbox"/> Handler <input type="checkbox"/> Tester </div> <div> <input type="checkbox"/> Test Program <input type="checkbox"/> Kelvin Temp </div> </div> <div> <div>Final Conclusion *</div> <div>The issue has been fixed</div> </div> <div> <div>Save</div> <div>Release</div> <div>Complete</div> </div> </div> </div> </div>

Test Case 2	Login as Technician Lot Number : lot26 Meas Step : B1 The Task is assigned to Process Engineer
User Input	<div> <div>Start process instance</div> <div> <div>Correlation key</div> <div>Form</div> <div>LRequest</div> <div> <div>Lot Number *</div> <div>lot26</div> </div> <div> <div>Meas Step *</div> <div>B1</div> </div> <div>TResult</div> <div> <div> <input type="checkbox"/> Socket Number <input type="checkbox"/> Load Board </div> <div> <input type="checkbox"/> Handler <input type="checkbox"/> Tester </div> <div> <input type="checkbox"/> Test Program <input type="checkbox"/> Kelvin Temp </div> </div> <div>Submit</div> </div> </div>
System out put	<p>Login as ProcessEngineer</p> <div> <div>KIE</div> <div>Menu</div> <div>Task 9</div> </div> <div> <div>9 - Process Engineer Task</div> <div>Work Details Assignments Comments Admin Logs</div> <div> <div>Outputs</div> <div>LRequest</div> <div> <div>Assign user</div> <div>Process Engineer</div> </div> <div> <div>Lot Number</div> <div>lot26</div> </div> <div> <div>Meas Step</div> <div>B1</div> </div> <div> <div>Lot Qty</div> <div>2013</div> </div> <div> <div>Test Result</div> <div> <div> <input type="checkbox"/> Socket Number <input type="checkbox"/> Load Board </div> <div> <input type="checkbox"/> Handler <input type="checkbox"/> Tester </div> <div> <input type="checkbox"/> Kelvin Temp </div> </div> <div> <div>Final Conclusion *</div> <div>For the issue already</div> </div> <div> <div>Save</div> <div>Release</div> <div>Complete</div> </div> </div> </div> </div>

Test Case 3	Login as Technician Lot Number : lot19 Meas Step : B3 The Task is assigned to Product Engineer
User Input	<div> <div>LotProcess</div> <div> <div>Correlation key</div> <div>Form</div> </div> <div> LRequest <div> <div>Lot Number *</div> <div>lot19</div> </div> <div> <div>Meas Step *</div> <div>B3</div> </div> </div> <div> TResult <div> <div>Socket Number</div> <div>Load Board</div> </div> <div> <div>Handler</div> <div>Tester</div> </div> <div> <div>Test Program</div> <div>Kelvin Temp</div> </div> </div> <div>Submit</div> </div>
System out put	<p>Login as ProductEngineer</p> <div> <div>KIE</div> <div>Menu</div> </div> <div>Home > Task Info > Task: 9</div> <div>9 - Process Engineer Task</div> <div>Work Details Assignments Comments Admin Logs</div> <div> <div>Outputs:</div> <div>LRequest</div> <div> <div>Assign User</div> <div>Process Engineer</div> </div> <div> <div>Lot Number</div> <div>lot19</div> <div>Meas Step</div> <div>B3</div> </div> <div> <div>Lot Qty</div> <div>1013</div> </div> <div> <div>Test Result</div> <div> <div>Socket Number</div> <div>Load Board</div> </div> <div> <div>Handler</div> <div>Tester</div> </div> <div> <div>Test Program</div> <div>Kelvin Temp</div> </div> </div> <div> <div>Final Conclusion *</div> <div>The issue has been fixed</div> </div> <div> <div>Save</div> <div>Release</div> <div>Complete</div> </div> </div>

Test Case 4 (Negative)	Login as Technician Lot Number : lot100 (lot doesn't exist) Meas Step : B3 The Task is assigned to Product Engineer
User Input	<div> <div>Start process instance</div> <div> <div>Correlation key</div> <div>Form</div> <div>LRequest</div> <div> <div>Lot Number *</div> <div>lot100</div> </div> <div> <div>Meas Step *</div> <div>B3</div> </div> <div>TResult</div> <div> <div>Socket Number</div> <div>Load Board</div> <div>Handler</div> <div>Tester</div> <div>Test Program</div> <div>Kelvin Temp</div> </div> </div> <div>Submit</div> </div>
System out put	<p> Login as Technician Correct the data </p> <p> Login as EquipmentEngineer </p>

