

# jBPM tool and analysis of Business exception handling

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**Abstract**—Business Process Management (BPM) is an order including any blend of displaying, mechanization, execution, control, estimation and advancement of business movement streams, in backing of big business objectives, crossing frameworks, representatives, clients and accomplices inside and past the venture limits. With today's clients interfacing more with items and administrations through programming, the meaning of BPM has become more extensive, alongside the BPM needs a solitary association may confront. BPM needs inside an association could incorporate top-down business change activities, keen process applications that join unique line-of-business data, custom applications that are IT driven or driven by business proprietors to settle particular process-based necessities, and client confronting applications that are sufficiently coordinated to stay aware of purchaser requests.

jBPM is one such tool which gives every one of the elements of Business process administration. jBPM is open source tool accessible for download and it can be utilized as online framework and in addition it can be coordinated with shroud ide for framework advancement. We will do our exploration on its working identified with business exception taking care of which is a vital component for advancement of mistake free application.

**Keywords**—business process managemnt, jBPM tool Business exception, business process analytics.

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## I. INTRODUCTION

jBPM is an adaptable Business Process Management (BPM) Suite. BPM makes the extension between business investigators, engineers and end clients. Every process User Form is made in JBPM as per client prerequisite either by investigator or business client, then inside these process create java code which keeps running as incorporated application framework associating with various comparative process alongside outsider tool.

Business exception taking care of is the range where jBPM do not have the control of expert who can do cluster of capacities utilizing process work process demonstrating by structure planning when taking after condition happens:

1. When a connection with an outer gathering or outsider framework does not go as arranged
2. When you can't completely check the information in your process (like a customer's location data, for instance)

The Business exception emerging from above circumstances can create specialized exceptions too, as NullPointerException, FileNotFoundException and so forth this will add to extra overhead on improvement of blunder free framework.

## II. JBPM TOOL BUSINESS EXCEPTION MANGEMENT

This paper provides detailed information about the functioning of jBPM business exception handling and possible solution for some exceptional cases.

### A. jBPM OVERVIEW (<http://www.jbpm.org/>)

jBPM is an adaptable Business Process Management (BPM) Suite. A business process permits you to demonstrate your business objectives by portraying the strides that should be executed to accomplish those objectives and the request of those objectives are delineated utilizing a stream diagram. This process significantly enhances the deceivability and nimbleness of your business rationale.

The center of jBPM is a light-weight, extensible work process motor written in immaculate Java that permits you to execute business processes utilizing the most recent BPMN 2.0 particular. It can keep running in any Java environment, inserted in your application or as an administration.

The following section describes the architecture and the components of the jBPM tool:

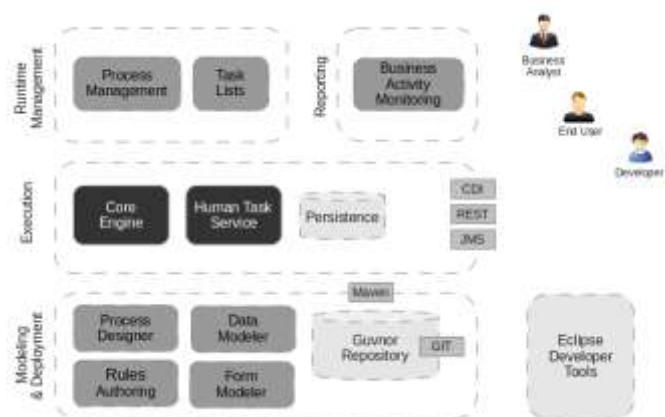


Figure 1- Architecture of jBPM

The architecture consists of 4 different User.

**Admin:** Administrates the BPMS system. Have full access rights to make any changes necessary. Also has the ability to add and remove users from the system.

**Analyst:** Creates rules, models, process flows, forms, dashboards and handles process change requests.

**Developer:** Implements code required for process to work. Mostly uses the JBDS connection to view processes, but may use the web tool occasionally.

**Business user:** Daily user of the system to take actions on business tasks that are required for the processes to continue forward. Works primarily with the task lists.

**Manager/Viewer-only User:** Viewer of the system that is interested in statistics around the business processes and their performance, business indicators, and other reporting of the system and people who interact with the system.

The component or functional parts of jBPM tool are:

**Modeling and deployment** - author your processes, rules, data models, forms and other assets

**Execution** - execute processes, tasks, rules and events on the core runtime engine

**Runtime Management** - work on assigned task, manage process instances, etc

**Reporting** - keep track of the execution using Business Activity Monitoring capabilities

jBPM gives these functionalities to its clients as indicated by their part and approval, Though there are distinctive segments in frameworks yet their incorporation is consistent and very much intended for Business process administration errands.

jBPM is not only a secluded process motor. Complex business rationale can be demonstrated as a mix of business processes with business standards and complex occasion processing. jBPM can be joined with the Drools venture to bolster one brought together environment that coordinates these standards where you show business rationale as a mix of processes, guidelines and occasions.

### B. Business Exception Mangment in jBPM:

jBPM gives elements to build up a framework by displaying business process with the assistance of structure tools. These business processes ought to should be very much incorporated and work in blunder freeway. There is dependably the case for sensible/specialized blunders.

What happens to a business process while something startling happens amid the process? More often than not, when making and outlining another process definition the initial step is to portray the regularizing or attractive conduct. Nonetheless, a process definition that lone depicts the greater part of the ordinary assignments and their execution request is deficient. The following stride is to consider what may turn out badly when the business process is run. What might happen if any of the human or specialized on-screen characters in the process don't react in sudden ways? Will any of the specialized frameworks that the process communicates with return sudden results - or not give back any outcomes by any means?

Deviations from the regularizing or "cheerful" stream of a business process are called exceptions. At times, exceptions won't not be that uncommon, for example, attempting to charge an unfilled financial balance. Be that as it may, a few processes may contain numerous mind boggling circumstances including exceptions, all of which must be taken care of accurately.

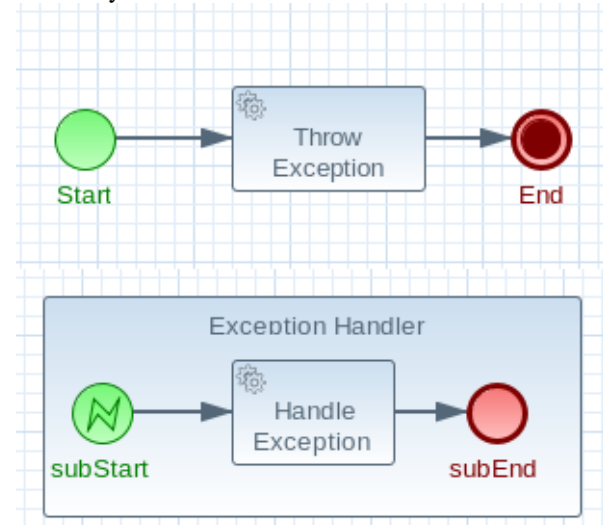


Figure 2- Exception Handling Overview

### C. Business Case where exception can occur and how it is managed:

#### Case 1:

In circumstance situation where the jBPM cooperates with a Banking application where it hopes to get telephone number for a client of whole number quality and max length ought to be 10 digit barring 91(Indian expansion code) on the off chance that the jBPM gets the estimation of under 10 digit which is a legitimate number information yet is not the right as indicated by business prerequisite so it will unquestionably going to create business exception when the jBPM application will use this telephone number either to send any SMS or accepting any data from this number.

This sort of circumstance will corrupt the consistency of the framework and will make startling blunder in application work process. Information Verification motor is the way where we can accept every approaching information in the framework.

With information check we can approve the telephone number is of 10 digit or does it incorporate +91. In the event that dislike that then forward it to Business exception handler which will do vital processing on it and return the required result, if in this process happens the specialized exception like there the telephone number containing string esteem which is off base so it will be sent to specialized exception handler.

Along these lines the Data Verification motor will assume its part in keeping up the right inflow of Data into jBPM framework and application work process won't be interfered with making the framework more predictable and blunder free.

#### Case 2:

Another comparable situation where jBPM is accepted to have record name from outside the framework as an info, yet the string got may not be correct one or the area of the document is not right then, in that circumstance there is dependably the

odds of creating specialized exception like FileNotFoundException Exception.

At the point when framework tries to open or get to this document it will create blunder this mistake must be taken care of preceding its execution, with a specific end goal to avert further breakdown of framework work process.

#### D. Data Verification Engine:

As explained in existing systems has issue in dealing with unverified input data from outside process that data needs to be verified by Data verification Engine? This Data verification Engine will treat all Data coming from outside the system as defined in process workflow by analyst. The process designer will be able to add this into process workflow model.

The Data Verification Engine will interact with Business exception handler, which will catch expected logical error. In case this logical error causes any technical exception it will be passed to Technical exception handler where it can deal with common technical exception like FileNotFoundException etc.



Figure 3- Exception handling existing system flow

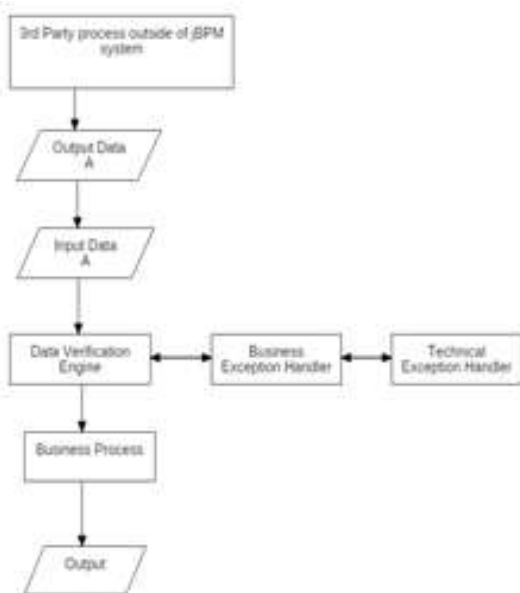


Figure 4- Exception handling proposed flow

### III. CONCLUSION

Business exceptions are sensible blunders which happens when all the conceivable instances of information approval is not considered at the season of planning the framework. Business blunders can likewise make specialized exception which breaks the frameworks ordinary work process.

So every one of the Data inputs to the framework must go through acceptance process which meets the necessity. Consequently business process administration tool like jBPM can have better risk of mistake free framework outline when it executes Data confirmation motor.

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