

King's Gambit Quest Workflow systems Process Mining 2024

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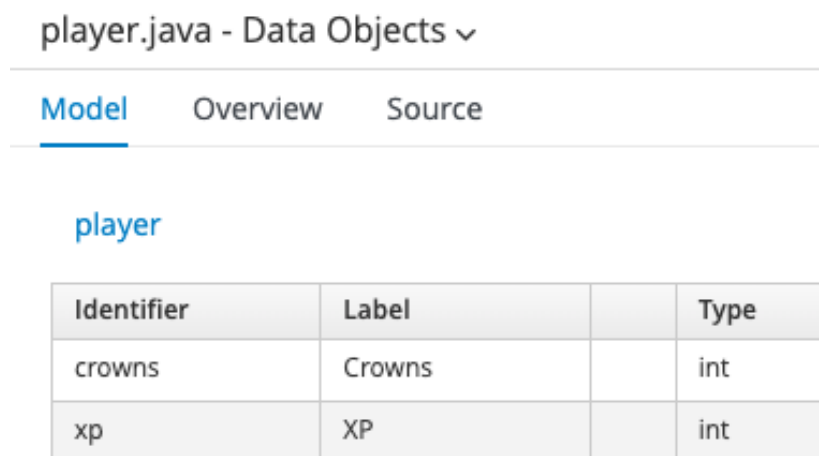
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1 Description of the problem

This report presents the implementation of the King's Gambit quest from The Witcher 3: Wild Hunt [3] as a business process in jBPM. In this quest, Geralt aims to reach the Place of Power. He faces numerous dangers, including fistfights and a massacre by three berserkes. To adopt the quest to the business process, some facts from the original description have been altered. The source code for this project can be found at <https://github.com/kapibblue/jbpm-witcher>.

The basic data objects used in this implementation are Player and Game:



player.java - Data Objects ▾			
Model Overview Source			
player			
Identifier	Label		Type
crowns	Crowns		int
xp	XP		int

Figure 1: Player data object.

Game.java - Data Objects ▾			
Model Overview Source			
Game			
Identifier	Label		Type
fight_counter	Fight counter		Integer
game_result	Game result		Boolean
player	Player		com.player

Figure 2: Game data object.

They store the basic information about the player (XP and Crowns – the money) and the state of the game (fight counter and game result). The initialization of these values is the responsibility of the administrator. In a similar spirit, the administrator evaluates the game results. Other necessary variables are specified as process data:

▾ Process Data

Process Variables

Name	Data Type	Tags ⓘ	+
game_result	Boolean ▾		
fight_count	Integer ▾		
is_game_won	Boolean ▾		
fight_for_swo	Boolean ▾		
talk_to_cerys	Boolean ▾		
challenge_vid	Boolean ▾		
help_cerys	Boolean ▾		
game	Game [com] ▾		

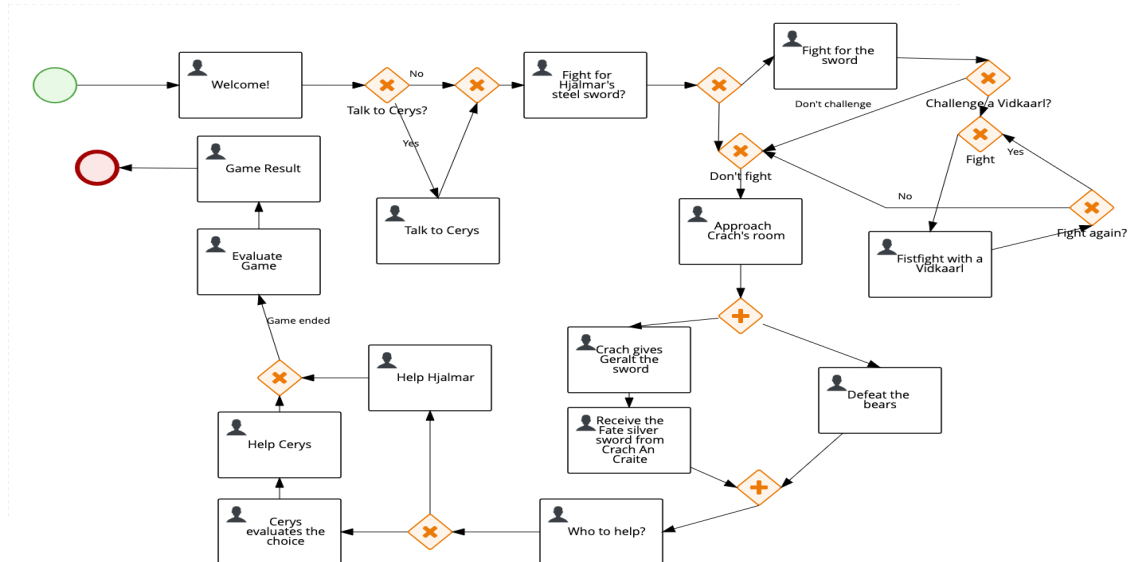
Figure 3: Process variables.

Thanks to the process variables, it is possible to collect decisions from the actors during execution. For example, if Geralt marks the 'Talk to Cerys' field in the form, based on this decision the process will move to the 'Talk to Cerys' block. All decisions are implemented in this way.

Most process variables are boolean, with the *fight_count* being an exception. The *fight_count* is a counter for fights with Vidkaarls during the process (up to three fights are allowed).

Discussions between actors are implemented using forms. The forms also provide general information about the setting and the events. Some of them are accompanied by images in HTML blocks. The image sources are [2] and [1].

The process diagram of the quest is shown below:



Each XOR decision has an associated process variable. For instance, the block shown below splits based on the value of *talk_to_cerys*:

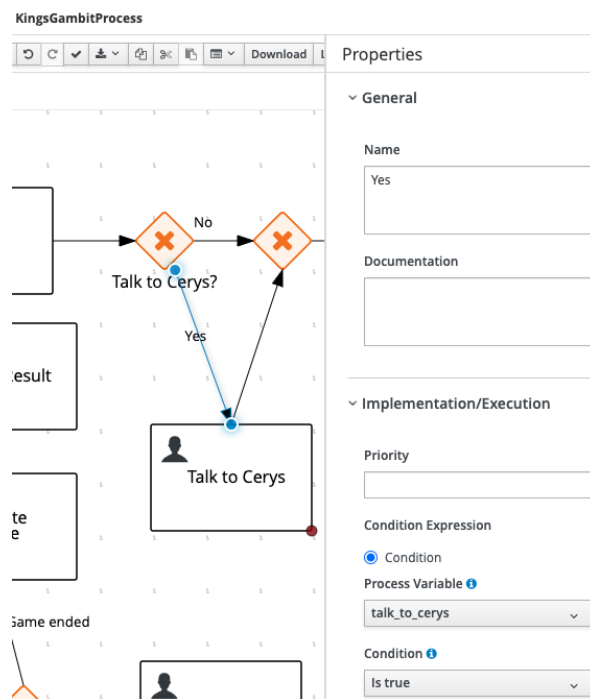


Figure 4: The Talk to Cerys XOR decision and the *talk_to_cerys* process variable. Marking the appropriate field in the form results in following the path highlighted in blue. Otherwise, the top arc is followed.

Finally, it is time to introduce the actors:

- Geralt – The main actor. Most tasks are assigned to him.
- Cerys – She gives Geralt advice and marks the game result as positive if Geralt chooses to help her.
- Crach An Craite – He gives Geralt the Fate silver sword.
- Vidkaarl1, Vidkaarl2, Vidkaarl3 – Vidkaarls that Geralt can challenge. They belong to the *Vidkaarls* group.
- Admin – He fills in the game state form once the process is initialized by Geralt. He also evaluates the game at the end.

2 A sample business case

In this section, a sample business case is presented. It is the most extensive path available in the quest and the optional activities are accompanied by a [O] preceding the activity title.


2.1 Process initialization

Geralt starts a new process instance. A form with the first decision appears.

Start process instance

Correlation key

Form



Welcome!

Beware, you are about to enter the secondary quest of The Witcher 3: Wild Hunt. Stay brave.

You enter the feast hall, where you see Hjalmar and Cerys quarrel. You can explore the room. Furthermore, you can talk to Cerys if you want. Please mark your choice below.

☐ Talk_to_cerys *

Submit

2.2 Welcome

This activity is performed by the administrator. It allows for the initialization of the game state.

43 - Welcome!

[Work](#) [Details](#) [Assignments](#) [Comments](#) [Admin](#) [Logs](#)

Game *

Player *

Xp *

Crowns

Fight counter


☐ Game result

2.3 [O] Talk to Cerys

The first optional activity. Cerys shares an enigmatic piece of advice. We will see that this becomes clearer later in the game.

44 - Talk to Cerys

[Work](#) [Details](#) [Assignments](#) [Comments](#) [Admin](#) [Logs](#)



Hey, Geralt! Just one piece of advice from me: think who you help!

2.4 Fight for Hjalmar's steel sword?

Another decision is to be made here. Optionally, Geralt may fight with a Vidkaarl to win Hjalmar's steel sword (and some XP, naturally).

45 - Fight for Hjalmar's steel sword?

[Work](#) [Details](#) [Assignments](#) [Comments](#) [Admin](#) [Logs](#)

Fight for Hjalmar's sword

There's a profitable opportunity if you approach Hjalmar while he's in the middle of a fistfight. He'll challenge you to defeat a Vidkaarl in a fistfight to win Hjalmar's steel sword. (100XP).

Please say if you would like to fight:

☒ Fight for sword?*

[Save](#) [Release](#) [Complete](#)

Geralt is brave and decides to accept the challenge.

2.5 [O] Fighting for the sword

After winning the fistfight, Geralt has a chance to fight with other Vidkaarls in a sequence of three fistfights. He agrees without hesitation.

46 - Fight for the sword

[Work](#) [Details](#) [Assignments](#) [Comments](#) [Admin](#) [Logs](#)



It was not an easy fight but...

you defeated the Vidkaarl and you get 100 XP.

You can challenge other Vidkaarls now up to three times. Or you can walk to Cranch's room.

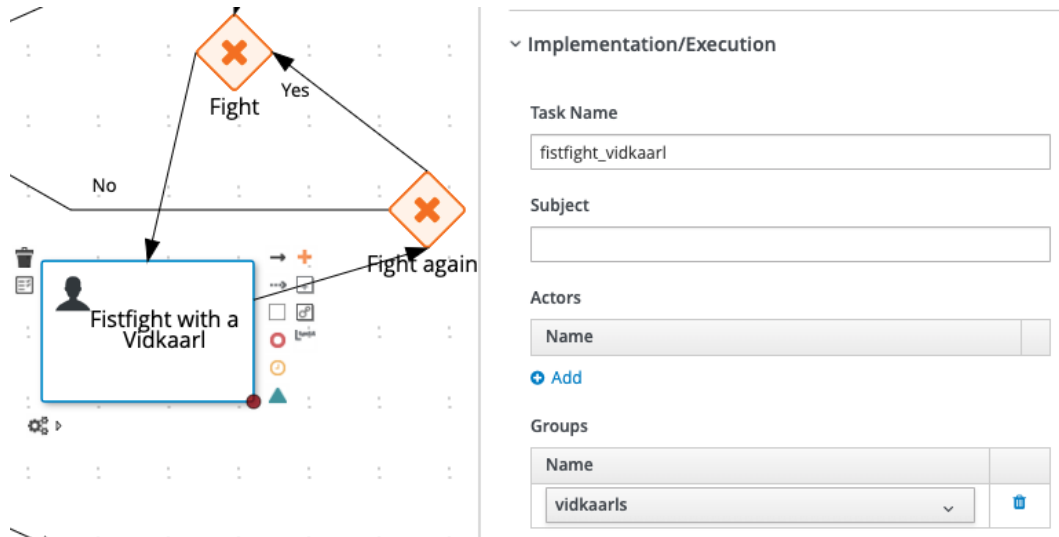
Please mark your choice below.

☒ Challenge a Vidkaarl?*

[Save](#) [Release](#) [Complete](#)

2.6 [O] Challenging Vidkaarls

These challenges are looped and assigned to the vidkaarl group:



Hence, any of the actors from this group can claim this task and fight. Each time the *fight_count* must be incremented.

47 - Fistfight with a Vidkaarl

[Work](#) [Details](#) [Assignments](#) [Comments](#) [Admin](#) [Logs](#)

Decide, you brave Vidkaarl brawler.

☒ Do you want to fight with Geralt? *

Fight Counter (increment, max=3) *

Fight_count

[Claim](#)

The first challenge is accepted by *vidkaarl1*.

47 - Fistfight with a Vidkaarl

[Work](#)

[Details](#)

[Assignments](#)

[Comments](#)

[Admin](#)

[Logs](#)

Decide, you brave Vidkaarl brawler.

☒ Do you want to fight with Geralt? *

Fight Counter (increment, max=3) *

Save

Release

Complete

Next, *vidkaarl2* claims the task.

48 - Fistfight with a Vidkaarl

[Work](#)

[Details](#)

[Assignments](#)

[Comments](#)

[Admin](#)

[Logs](#)

Decide, you brave Vidkaarl brawler.

☒ Do you want to fight with Geralt? *

Fight Counter (increment, max=3) *

Save

Release

Complete

Finally, *vidkaarl3*.

49 - Fistfight with a Vidkaarl

[Work](#)

[Details](#)

[Assignments](#)

[Comments](#)

[Admin](#)

[Logs](#)

Decide, you brave Vidkaarl brawler.

☒ Do you want to fight with Geralt? *


Fight Counter (increment, max=3) *

Save

Release

Complete

This screenshot from the log once again demonstrates who performed the aforementioned tasks:




11 minutes ago

Task 'Fistfight with a Vidkaar!' (Human) node was COMPLETED

▼ Details

Task data:


Updated On	27-Mar-2024 11:46:00
Created On	27-Mar-2024 11:45:23
Id	49
State	Completed
Owner	vidkaar13
Description	



12 minutes ago

Task 'Fistfight with a Vidkaar!' (Human) node was ENTERED

> Details




12 minutes ago

Task 'Fistfight with a Vidkaar!' (Human) node was COMPLETED

▼ Details

Task data:


Updated On	27-Mar-2024 11:45:23
Created On	27-Mar-2024 11:44:45
Id	48
State	Completed
Owner	vidkaar12
Description	



13 minutes ago

Task 'Fistfight with a Vidkaar!' (Human) node was ENTERED

> Details



13 minutes ago

Task 'Fistfight with a Vidkaar!' (Human) node was COMPLETED

▼ Details

Task data:

Updated On	27-Mar-2024 11:44:45
Created On	27-Mar-2024 11:43:33
Id	47
State	Completed
Owner	vidkaar11
Description	

2.7 Approach Crach's room

Once fighting is finished, Geralt is ready to approach Crach's room. This is where the parallel activity begins.

50 - Approach Crach's room ↺
✕

[Work](#) [Details](#) [Assignments](#) [Comments](#) [Admin](#) [Logs](#)


You approach the Crach's room

Birna Bran barges through the door while appearing a bit mad. She is complaining about the king-choosing system (which consists of voting for the next king) and implies that Svanrige, Bran's firstborn, should be the next king by birthright instead. Eventually she says that she will be leaving tomorrow and goes her own way.

Save Release Complete

2.8 Crach An Craite gives the sword to Geralt

This task is assigned specifically to Crach An Craite.



Implementation/Execution

Task Name
crach-gives-sword

Subject

Actors
Name
crach-an-craite

52 - Crach gives Geralt the sword

[Work](#) [Details](#) [Assignments](#) [Comments](#) [Admin](#) [Logs](#)

Give Geralt the Fate silver sword

Save Release Complete

2.9 Geralt receives the sword

Well, not only the sword. He also gets 500 XP.

53 - Receive the Fate silver sword from Crach An Craite

[Work](#)[Details](#)[Assignments](#)[Comments](#)[Admin](#)[Logs](#)

Dear Geralt,

I am very, very grateful for helping my children. Please accept the Fate silver sword (500XP).

Crach An Craite

[Release](#)[Start](#)

2.10 Defeat the bears

Unfortunately, there is little time for the conversation with Crach.

51 - Defeat the bears

[Work](#)[Details](#)[Assignments](#)[Comments](#)[Admin](#)[Logs](#)

Well, things aren't quite right...

As Crach An Craite is giving you the sword, some people start to scream "Lu-gos! Lu-gos! Lu-gos!" and then suddenly, screams and a few roars are heard. You and Crach head for the feast hall and witness a massacre by three bears. You have to defeat the bears! (300 XP).

[Save](#)[Release](#)[Complete](#)

2.11 Who to help?

The parallel path joins here and thankfully Geralt is safe and sound. However, another decision is awaiting him.

54 - Who to help?



Cerys or Hjalmar



You discover the bears were actually berserkers — like werewolves, but people that turn into bears instead of wolves. Even though the fight was not easy, you defeated them using the *silver sword*. Good job!

At this point, you'll need to decide if you want to help Hjalmar or Cerys. It's important to think about this choice because it isn't as simple as determining how to find the culprit.

Note: this is an important decision.

☒ Help Cerys? (otherwise help Hjalmar) *

Save

Release

Complete

2.12 Cerys evaluates the choice

Here Cerys needs to log in and mark the field. Helping Cerys is the only way to win the game (although helping Hjalmar also completes the quest).

55 - Cerys evaluates the choice

Work

Details

Assignments

Comments

Admin

Logs

☒ Please confirm the positive resolution of the game *

Save

Release

Complete

2.13 Help Cerys

In this block, Geralt learns that he reached the Place of Power.

56 - Help Cerys

[Work](#)

[Details](#)

[Assignments](#)

[Comments](#)

[Admin](#)

[Logs](#)

Thanks Geralt... and good choice!

Cerys

By helping Cerys you will find the true culprit and reach the Place of Power. Congrats!

[Save](#)

[Release](#)

[Complete](#)

2.14 Game evaluation

This task must be performed by the administrator. The game state is updated based on the course of the game.

57 - Evaluate Game

Please update the player's variables according to the game result.

☒ Game Result

☒ Challenge Vidkaarl

Fight Count

3

Update XP and Crowns based on the results above.

Game *

Player *

Xp *

1950

Crowns

500

Fight counter

3

☐ Game result

[Save](#)

[Release](#)

[Complete](#)

2.15 Game results

Finally, Geralt can learn the results of the game. The checkbox specifies whether there is a positive or a negative result of the game.

[Home](#) » [Task Inbox](#) » **Task: 58**

58 - Game Result



THE END



Congratulations on completing the game.

Your XP and money was updated. It turns out that helping Cerys was the only way to reach the Place of Power. If this was your choice, the field below will have a tick. Regardless, thank you for the participation, and we wish you luck in the other quests!

Game

Player *

Xp *

1950

Crowns

500

Fight counter

3

☒ Game Result

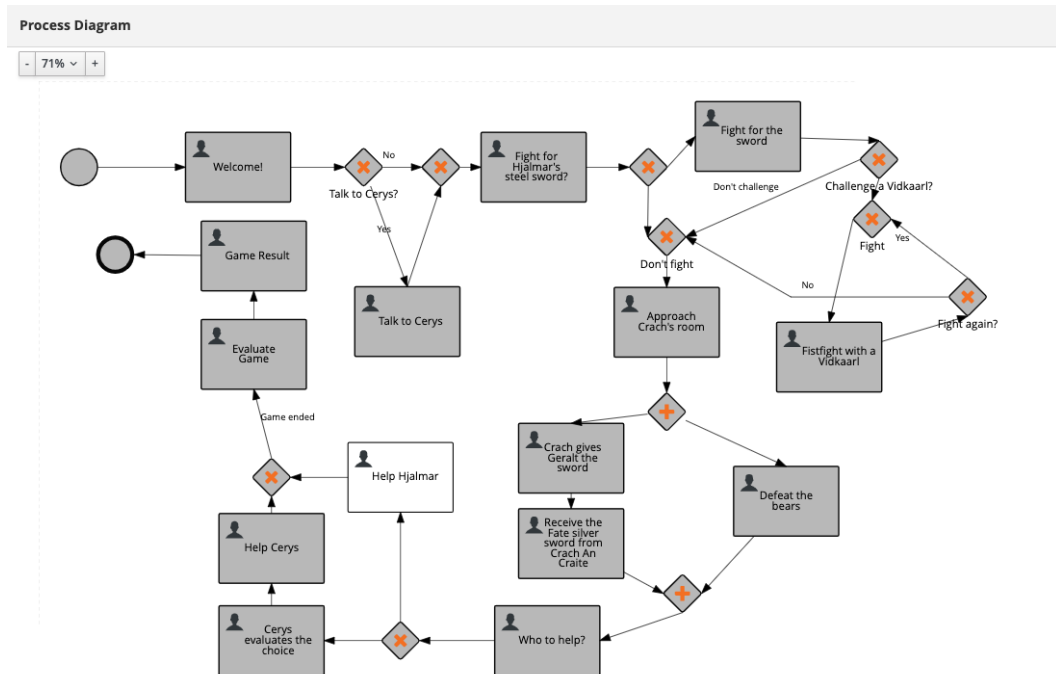
Save

Release

Complete

2.16 Diagram of the case

The path followed in the case is presented in the diagram below.



References

- [1] Michael Christopher. *The Witcher 3: A Guide To King's Gambit* — *thegamer.com*. <https://www.thegamer.com/witcher-3-kings-gambit-quest-walkthrough/>. [Accessed 27-03-2024]. 2024.
- [2] The Witcher 3: Wild Hunt Walkthrough Team. *King's Gambit Walkthrough and Best Choice* | *The Witcher 3 Game8* — *game8.co*. <https://game8.co/games/Witcher3/archives/280178>. [Accessed 27-03-2024]. 2024.
- [3] Contributors to Witcher Wiki. *King's gambit*. URL: https://witcher.fandom.com/wiki/King%27s_Gambit.