If you thought that things like Artificial Intelligence or logical programming are all dead and buried in the 80s and have no relevance to our enterprise projects, think again. Drools is a Java framework that implements a form of AI called rule-based Expert System that, it might not win you Jeopardy ([http://en.wikipedia.org/wiki/Watson\_%28computer%29http://en.wikipedia.org/wiki/Watson\_%28computer%29](http://en.wikipedia.org/wiki/Watson_(computer)http://en.wikipedia.org/wiki/Watson_(computer))) but it is an open-source project that can help you quickly process data according to large sets of business rules and it will allow you to define those rules in a readable, user-friendly way. When looking at a rule, it is pretty clear of what it is about to both a developer with little business domain knowledge and to a business analyst:

<funky example of dslr>

**Some theoretical background**

Expert Systems are computer systems that make decisions like a human expert would, based on a method of knowledge representing (which forms their so called knowledge base) they infer conclusions. This is different from conventional programming because it doesn't work by following a procedure but instead it tries to mimic human reasoning about knowledge. Drools is a Rule Engine that uses the rule-based approach to implement an Expert System. A Rule engine is any system that uses rules, in any form, that can be applied to data to produce outcomes.

To bring back some of the traumas of the August exams in college, the official documentation adds that Drools is more precisely classified as a Production Rule System, a concept in Formal Grammars (<http://en.wikipedia.org/wiki/Formal_grammar>).

The process of that decides weather each fact satisfies the Rules is called Pattern Matching, and is performed by the so called Inference Engine. There are several algorithms that can be used by an Inference Engine for pattern matching, Drools implements the Rete algorithm (some details later on). If a fact satisfies more than one rule, the matched rules are said to be in conflict and it becoms the job of a component called Agenda to decide the order in which those rules will be executed.

The Rules are stored in the Production Memory and the facts that the Inference Engine matches against are kept in the Working Memory.

There are two methods a rule system can work: Forward Chaining and Backward Chaining. Drools implements both.A description...