Decision Model and Notation 101

Overview and Demo

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DECISION MODEL AND NOTATION 101

Agenda

- Brief History of DMN
- Components of a DMN solution
- Conformance levels
- DMN – The big picture
- Demo: an end-to-end solution for DMN

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WHAT IS DMN?

"DMN, which stands for *Decision Model and Notation*, is a relatively new standard managed by OMG, the organization behind BPMN. It is trying to do for Business Decision Management what BPMN did for Business Process Management a decade ago: empower the business to take charge of the logic that drives its operations, through a vendor-independent diagramming language." (Bruce Silver, **http://methodandstyle.com/what-is-dmn/**)

- The spec defines among other things:
  - a graphical language for business decision modelling
  - a standard notation for decision tables
  - an expression language called FEEL (which stands for Friendly Enough Expression Language)
  - a metamodel and an interchange format (XML)
  - 3 conformance levels for tool implementations
- More details: http://www.omg.org/spec/DMN/1.1/

BRIEF HISTORY

Versions released:

- 1.0 – September 2015
  - Introduced DMN
  - Had several problems (bugs) on both the XML schema definition and the FEEL language that prevented its full implementation.
- 1.1 – June 2016
  - RTF group worked to fix most of the problems from the version 1.0
  - It is the first version of the spec that is fully implementable (with a few minor issues)

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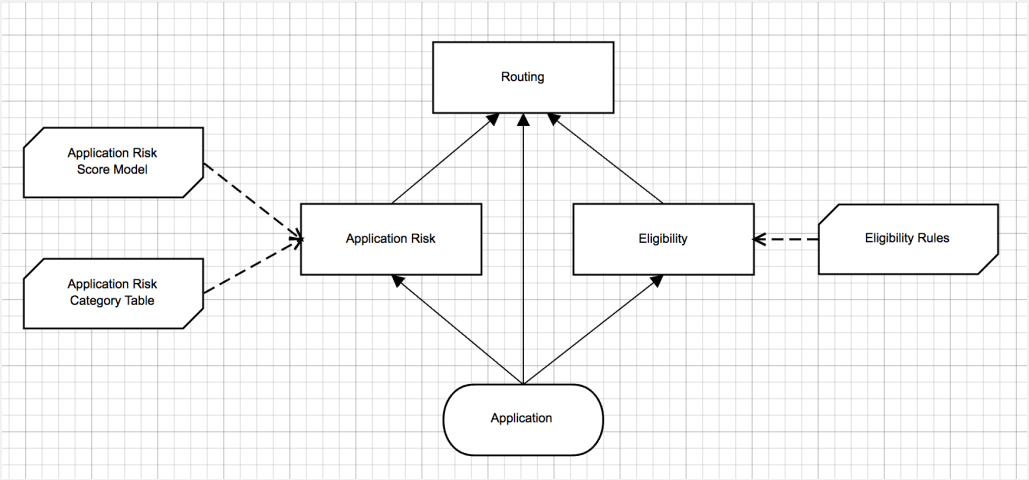
DMN GRAPHICAL LANGUAGE – EXAMPLE



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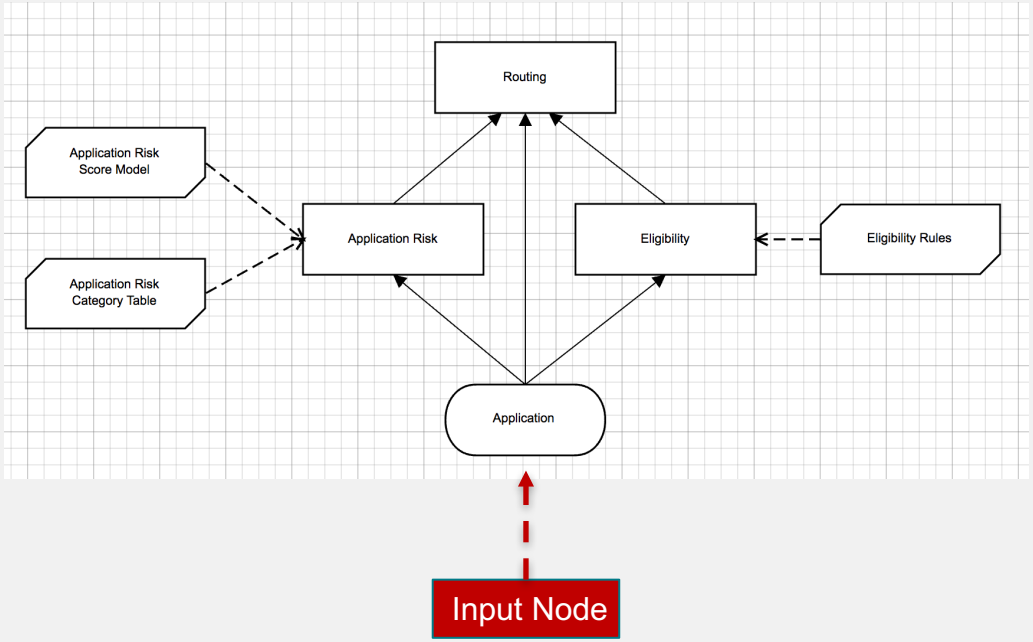
DMN GRAPHICAL LANGUAGE – EXAMPLE



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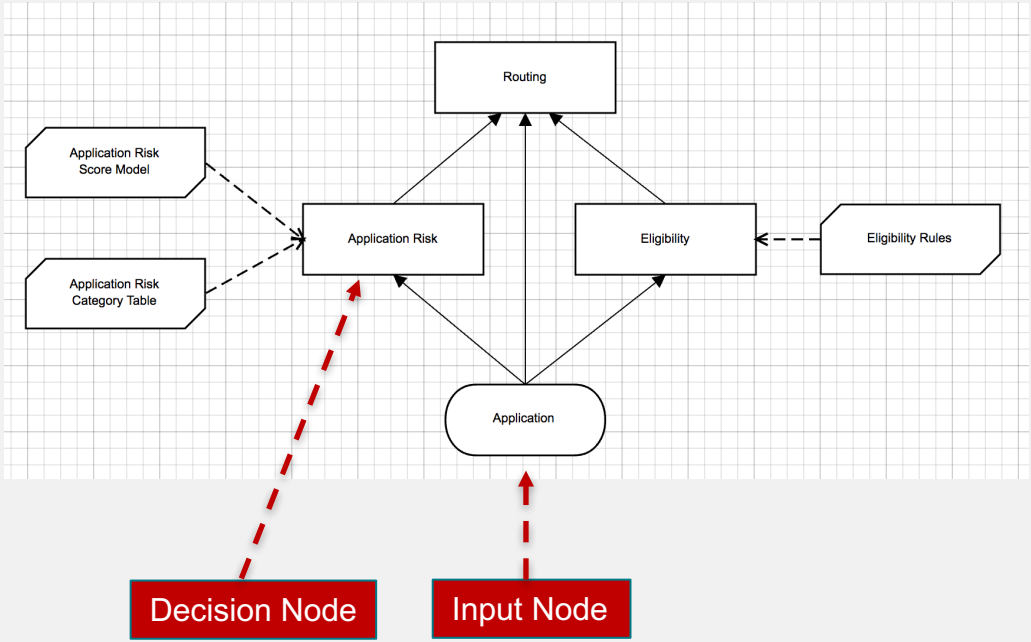
DMN GRAPHICAL LANGUAGE – EXAMPLE



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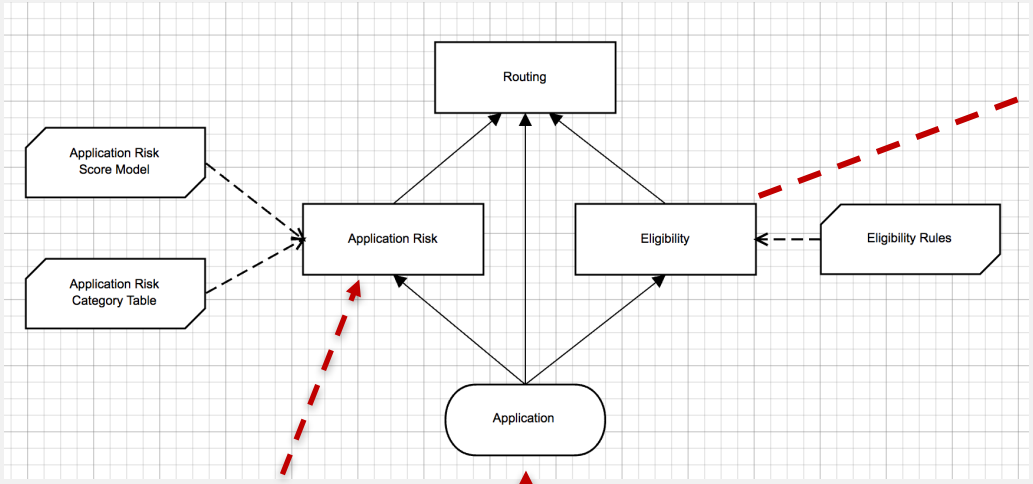

Eligibility	
Eligibility Rules	
Employment Status	Application.Applicant.Employment.Status
Country	Application.Applicant.Country
Age	Application.Applicant.Age

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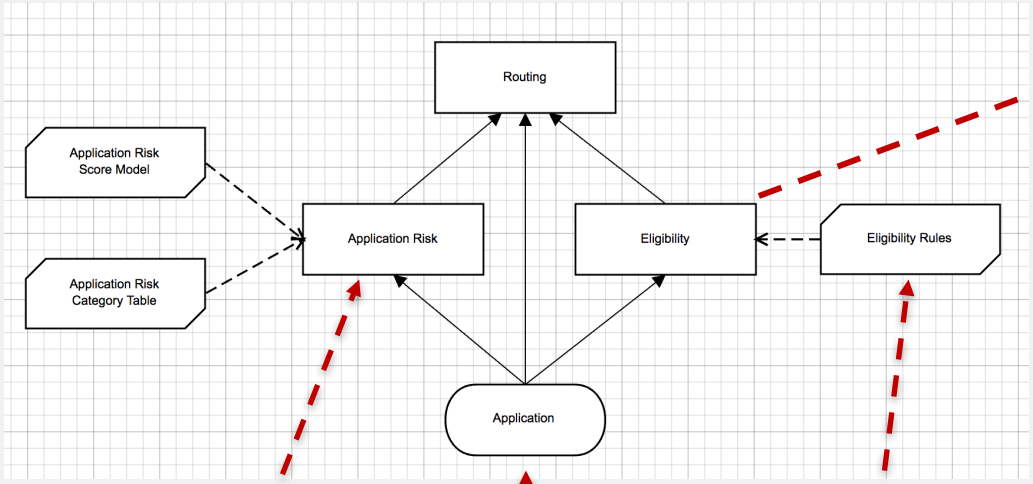
DMN GRAPHICAL LANGUAGE – EXAMPLE



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Decision Node

Input Node

Business Knowledge Model

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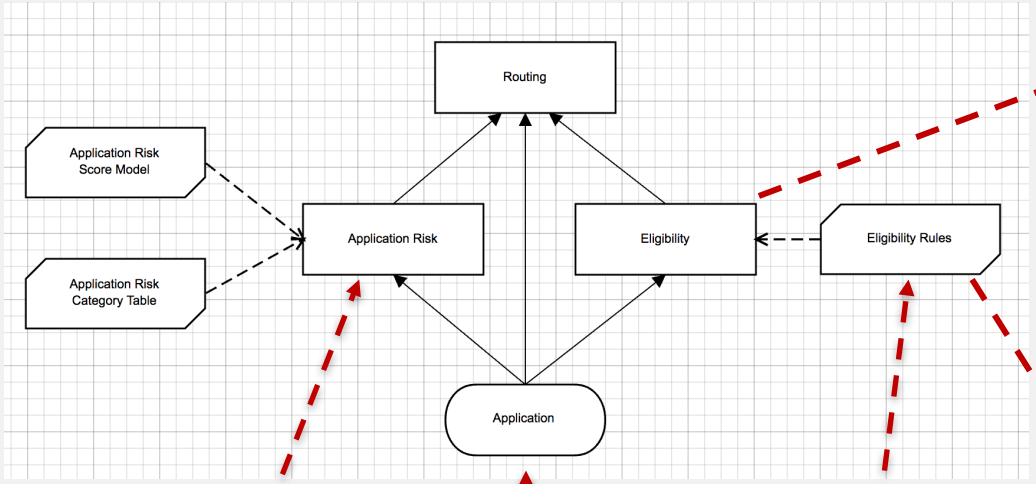

Eligibility

Eligibility Rules

Employment Status	Application.Applicant.Employment.Status
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Eligibility Rules

P	Employment Status	Country	Age	Eligibility Rules
				["INELIGIBLE", "ELIGIBLE"]
1	"UNEMPLOYED"	-	-	"INELIGIBLE"
2	-	not("UK")	-	"INELIGIBLE"
3	-	-	<18	"INELIGIBLE"
4	-	-	-	"ELIGIBLE"

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DECISION TABLES

Pre-bureau risk category table

U	Existing Customer	Application Risk Score	Pre-bureau risk category table
			["DECLINE", "HIGH", "MEDIUM", "LOW", "VERY LOW"]
1	false	<100	"HIGH"
2		[100..120)	"MEDIUM"
3		[120..130]	"LOW"
4		>130	"VERY LOW"
5	true	<80	"DECLINE"
6		[80..90)	"HIGH"
7		[90..110]	"MEDIUM"
8		>110	"LOW"

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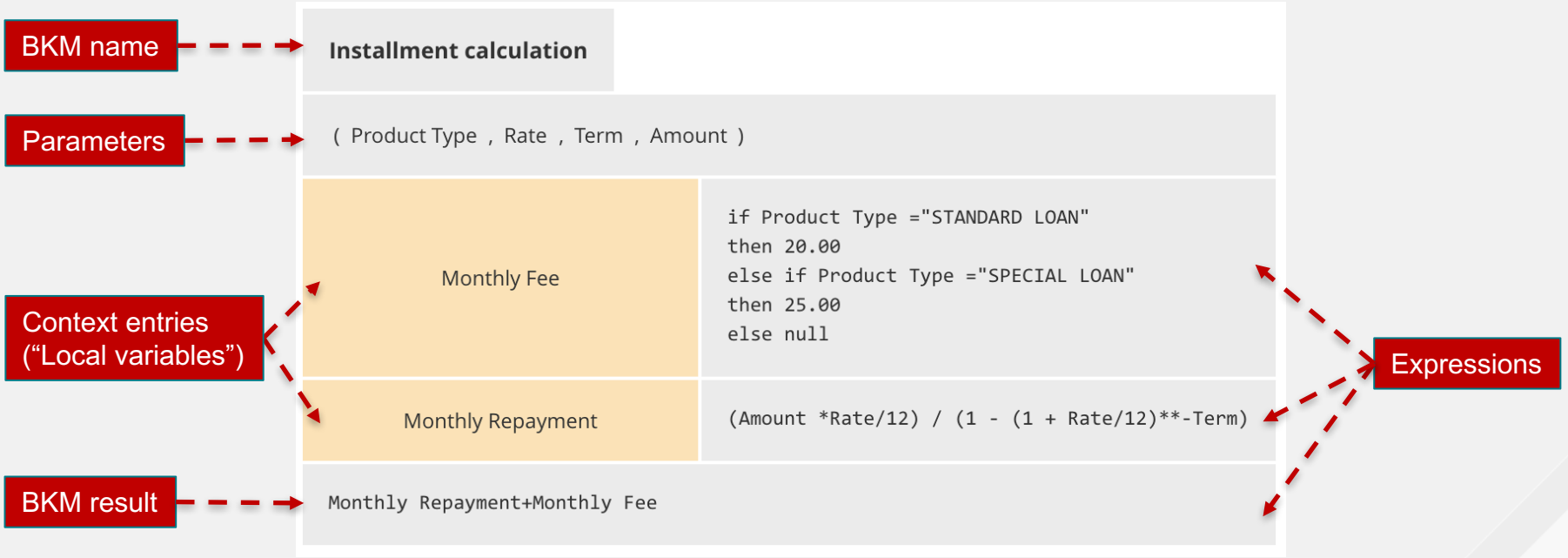
WHAT IS FEEL?

FEEL, which stands for *Friendly Enough Expression Language*, is a new expression language defined by the DMN specification. It aims to bridge the gap between decision modelling and execution, by assigning semantics to the decision model constructs.

- Aims to be usable by any user “capable of using Excel macros”
- Is used both in DRD (Decision Requirement Diagrams) as well as Decision Tables
- Two levels of compliance:
  - Level 2: requires only the features of S-FEEL (a simplified FEEL defined in chapter 9 of the spec)
  - Level 3: require full implementation of FEEL (as defined in chapter 10 of the spec)

FEEL EXAMPLE ON A BOXED EXPRESSION



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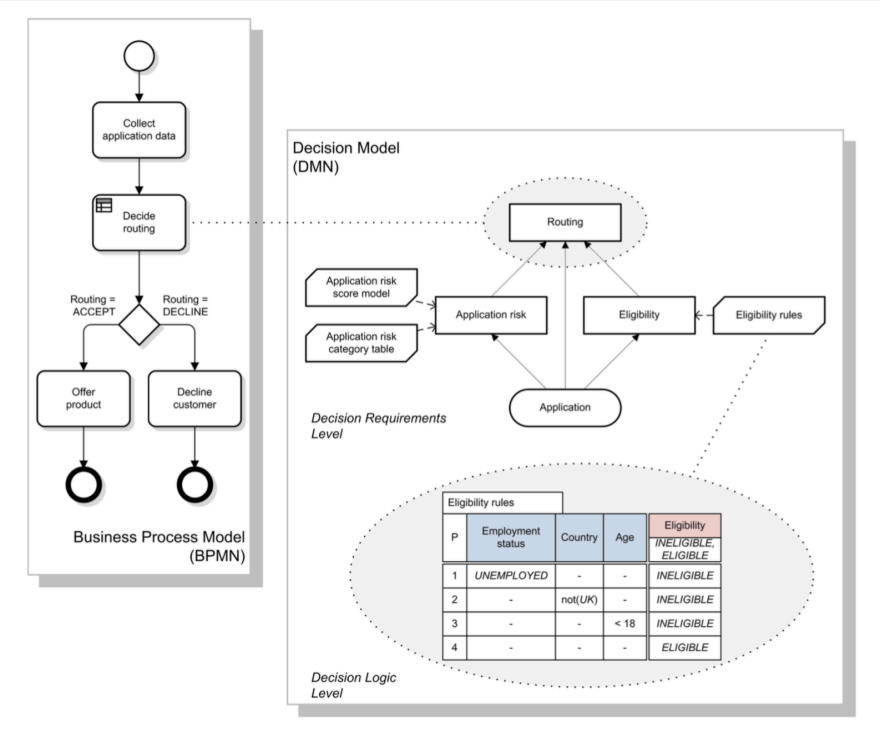
CONFORMANCE LEVELS

The spec defines 3 incremental conformance levels for implementations:

- Conformance Level 1:
  - Requires support for authoring of Decision Requirements Diagram, Decision Logic and Decision Tables
  - This conformance level is basically “documentation only”, no execution required
- Conformance Level 2:
  - Everything from conformance level 1, plus support for the S-FEEL (simplified FEEL) expression language
  - Requires execution, and requires the logic modelled in CL1 to be expressed in S-FEEL
- Conformance Level 3:
  - Everything from conformance level 2, plus support for the full FEEL language
  - This includes additional modeling elements like “boxed expressions”

DMN - THE BIG PICTURE



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DEMO: An end-to-end DMN solution

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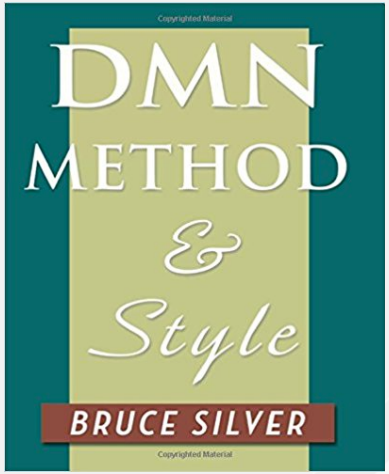
AN INTEGRATED END-TO-END SOLUTION

MORE INFORMATION

- DMN Quick Start program: www.trisotech.com/DMNQuickStart
- Drools project: www.drools.org
- Red Hat BRMS: https://access.redhat.com/products/red-hat-jboss-brms/
- DMN specification: http://www.omg.org/spec/DMN/1.1/
- DMN book and training: http://methodandstyle.com/



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