

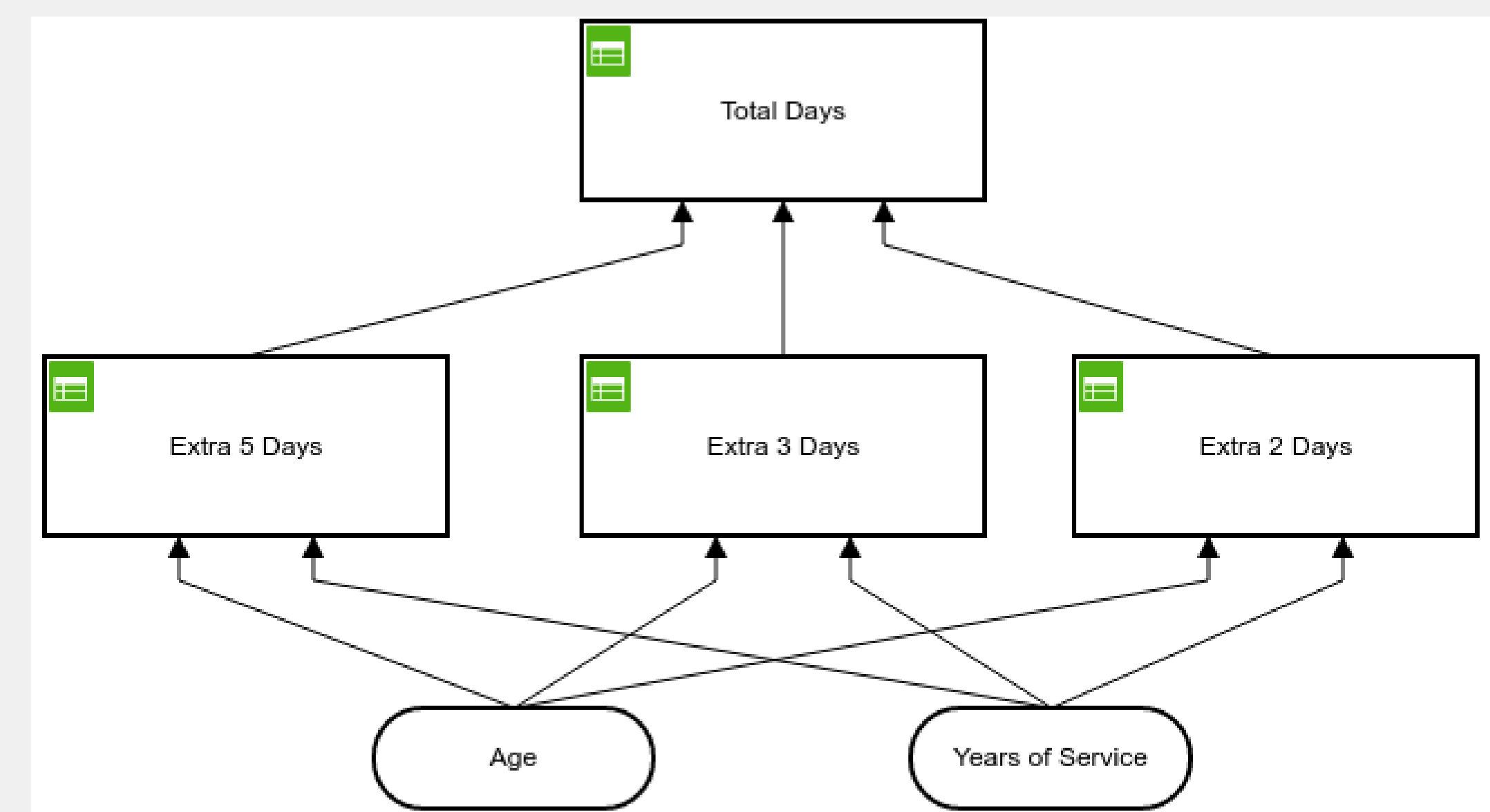
DMN-IDP

DMN-IDP is a user-friendly tool which combines the readability of the Decision Model and Notation (DMN) standard with the power of the IDP system through an interactive interface.

Decision Model and Notation

DMN is a table-based way of representing decision logic, with a focus on readability and user-friendliness. It consists of two parts:

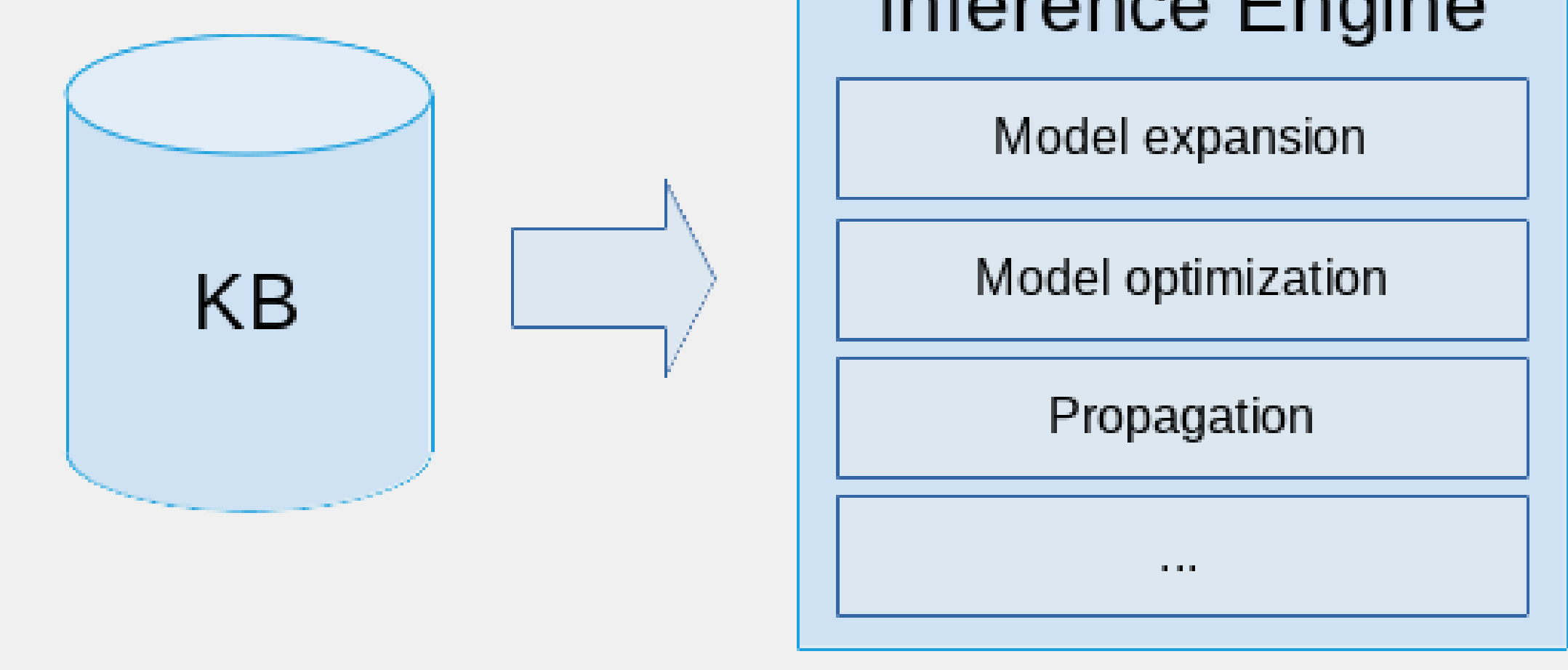
- ### Decision Requirements Diagram
- Represents structure of decision model
 - Displays inputs, decision tables, knowledge sources, ...



- ### Decision Tables
- Decide outputs (blue) based on inputs (green)
 - Rows represent rules, columns represent values
 - Behaviour defined by Hit Policy

Eligible for 5 extra days			
U	Age	Years of Service	Eligible5
1	< 18	—	Yes
2	[18, 60]	≤ 10	No
3	[18, 60]	≥ 10	Yes
4	≥ 60	—	Yes

- Knowledge is encoded using FO(.)
- Extension of First Order Logic
 - Adds types, aggregates, (inductive) definitions and more



Interactive Consultant (Pierre Carbonnelle, Marc Denecker) is an IDP-based interface, which allows for user-friendly interaction with knowledge bases. It has some interesting features:

- Propagating information in all directions
- Reasoning on incomplete data
- Can explain decisions
- Showing which decisions are relevant
- Optimization of terms

The DMN-IDP Tool

- DMN-IDP combines a DMN editor and the Interactive Consultant.
- The knowledge base is in the form of a DMN model
 - User can upload or create DMN models
 - Automatic translation to FO(.)
 - DMN models become useable in more situations

IDP & Interactive Consultant

The IDP system is an implementation of the Knowledge Base Paradigm

- Knowledge is stored in a Knowledge Base
- Inference methods to apply knowledge
- Goal: clear separation between knowledge, and use

```
//Eligible for 5 extra days
{
  extra5 () <- Age () < 18.
  extra5 () <- Age () >= 60.
  extra5 () <- Years_of_Service () >= 30.
}
```