The `decision-table` Package

Simon Vandevelde

2020/08/22

1 Description

The `decision-table` package allows for an easy way to generate decision tables in the Decision Model and Notation (DMN) format. (See Fig. 1) This package ensures consistency in the tables (i.e. fontsize), and is thus a better alternative to inserting tables via images.

Calculate BMI			
U	**Weight(kgs)**	**Length(m)**	**BMI**
1	—	—	weight/length*length

Figure 1: Example of a DMN table

2 How to use

The `decision-table` package adds the `dmntable` command, with which tables can be created. This command expands into a `tabular`, so it can be used within a `table` or `figure` environment. Furthermore, this allows labels and captions to be added seamlessly. It is also possible to place multiple DMN tables in one `table`/`figure` environment.

The `dmntable` command has the following inputs:

- title
- hit policy
- input column headers
- output column headers
- the table values

The command is used as follows:

```
\dmntable{title}{hitpolicy}{input}{output}{values}
```

The input, output and cell values are split by a comma. It is not necessary to include the row numbers for the cell values. For example, 1 is generated by the following code:

```
\begin{figure}[H]
    \centering
    \dmntable{Calculate BMI}{U}                    % Title and HP
             {Weight(kgs),Length(m)}{BMI}          % Input, output
             {---,---,weight/length*length}        % Cell values
    \caption{Example of a DMN table}
    \label{ex1}
\end{figure}
```

If a cell value contains multiple values (e.g. multiple string values), then accolades should be written around them. See the example 4.

3 Examples

This section contains some example code and their resulting tables.

```
\begin{figure}[H]
    \centering
    \dmntable{Calculate BMI}{U}                    % Title and HP
             {Weight(kgs),Length(m)}{BMI}          % Input, output
             {---,---,weight/length*length}        % Cell values
    \caption{Example of a DMN table}
\end{figure}
```

Calculate BMI			
U	**Weight(kgs)**	**Length(m)**	**BMI**
1	—	—	weight/length*length

Figure 2: Example of a DMN table

```
\begin{ligure}[H]
    \centering
    \dmntable{Decide BMI Level}{U}                 % Title and HP
             {BMI}{BMI Level, Risk Level}          % Input, output
             {$< 18.5$, Underweight, Increased,
              $[18.5..24.9]$, Normal, Low,
              $[25..29.9]$, overweight, Increased,
              $[30..34.9]$, Obese I, High,
              $[35..39.9]$, Obese II, Very High,
              $> 39.9$, Extreme Obesity, Extremely High}
    \caption{Example of a DMN table}
\end{figure}
```

Decide BMI Level			
U	**BMI**	**BMI Level**	**Risk Level**
1	< 18.5	Underweight	Increased
2	[18.5..24.9]	Normal	Low
3	[25..29.9]	overweight	Increased
4	[30..34.9]	Obese I	High
5	[35..39.9]	Obese II	Very High
6	> 39.9	Extreme Obesity	Extremely High

Figure 3: Example of a larger DMN table

```
\begin{figure}[H]
    \centering
    \dmntable{Decide Risk Level}{U}
             {BMI level, Waist(cm)}{Risk Level}
             {Overweight, $<=88$, Increased,
              Overweight, $ > 88$, High,
              Obese I,$ <= 88$, High,
              Obese II, ---, Very High,
              Extreme Obesity, ---, Extremely High,
              {not(Overweight, Obese I, Obese II, Extreme Obesity)}, ---, Low
             }
    \caption{Example of cell with multiple values}
    \label{ex2}
\end{figure}
```

Decide Risk Level			
U	**BMI level**	**Waist(cm)**	**Risk Level**
1	Overweight	$<= 88$	Increased
2	Overweight	> 88	High
3	Obese I	$<= 88$	High
4	Obese II	—	Very High
5	Extreme Obesity	—	Extremely High
6	not(Overweight, Obese I, Obese II, Extreme Obesity)	—	Low

Figure 4: Example of cell with multiple values

```
\begin{figure}[H]
    \centering
    \dmntable{Rule 1}{U}
             {Age, Service Years}{Eligible1}
             {$\leq 18$, ---, Yes,
              $\geq 60$, ---, Yes,
              {$[18, 60]$}, $\geq 30$, Yes
             }
    \dmntable{Rule 2}{U}
             {Age, Service Years}{Eligible2}
             {---,$\geq 30$, Yes,
              $\geq 60$,$<30$, Yes
             }
    \dmntable{Rule 3}{U}
             {Age, Service Years}{Eligible3}
             {$< 45$, {$[15, 30)$}, Yes,
              $> 45$, ---, Yes
             }
    \dmntable{Vacation days}{C+}
             {Eligible1, Eligible2, Eligble3}{Vacation Days}
             {---, ---, ---, 22,
              Yes, ---, ---, 5,
              ---, Yes, ---, 3,
              No, ---, Yes, 2
             }
    \caption{dmn table example for the Vacation Days}
\end{figure}
```

Rule 1

U	Age	Service Years	Eligible1
1	≤ 18	—	Yes
2	≥ 60	—	Yes
3	$[18, 60]$	≥ 30	Yes

Rule 2

U	Age	Service Years	Eligible2
1	—	≥ 30	Yes
2	≥ 60	< 30	Yes

Rule 3

U	Age	Service Years	Eligible3
1	< 45	$[15, 30)$	Yes
2	> 45	—	Yes

Vacation days

C+	Eligible1	Eligible2	Eligble3	Vacation Days
1	—	—	—	22
2	Yes	—	—	5
3	—	Yes	—	3
4	No	—	Yes	2

Figure 5: DMN table example for the Vacation Days

4 Contributing

Contributions are always welcome. The project is hosted at `https://gitlab.com/Vadevesi/dmn-tex`