

VDMJ One Page Guide

If you don't have time to read the complete *VDMJ User Guide*, the following gives some basic information to get you started. You will need a Java JRE, version 8 or later, to work with VDMJ.

Download the vdmj-4.n.n.jar file from *GitHub* (<https://github.com/nickbattle/vdmj>), and open a command line window in the same place that you saved the jar file.

Edit a simple text file and add the VDM specification you wish to work with. The following is a simple example to evaluate factorials in VDM-SL:

```
module F
definitions
functions

f: nat1 -> nat1
  f(a) == if a = 1 then 1 else a * f(a-1);

end F
```

If that specification is created in a file called F.vdm, then we can load the specification using the following command line:

```
$ java -jar vdmj-4.n.n.jar -vdmsl -i F.vdm
Parsed 1 module in 0.201 secs. No syntax errors
Warning 5012: Recursive function has no measure in 'F' (F.vdm) at line 5:1
Type checked 1 module in 0.016 secs. No type errors and 1 warning
Initialized 1 module in 0.084 secs.
Interpreter started
>
```

The -jar option identifies the VDMJ jar to execute. The -vdmsl option indicates that the specification is written in VDM-SL. The -i option indicates that we want to enter the interactive interpreter, and lastly, the file(s) to load are identified. The file(s) are parsed and checked automatically. Any errors at this stage would exit to the command line, but if there are no errors the interpreter prompt is given, ">". From here, commands can be typed to evaluate expressions against the specification loaded:

```
> print f(10)
= 3628800
Executed in 0.02 secs.
> print { f(x) | x in set {1, ..., 10} }
= {1, 2, 6, 24, 120, 720, 5040, 40320, 362880, 3628800}
Executed in 0.032 secs.
> quit
Bye
$
```

The "help" command gives a full list of interpreter options. The *VDMJ User Guide* explains how to use the various options in more detail. To exit the interpreter, use the "quit" command.

The various options to the VDMJ jar itself can be seen by entering the -jar option and nothing else, though again all the options are explained in detail in the *VDMJ User Guide*.

You can find out more about the VDM specification language here:

http://en.wikipedia.org/wiki/Vienna_Development_Method
<http://www.vdmportal.org/>
<http://www.overturetool.org/>