

SEP # : 36 – Pretty print of variable

Version: 1

Author: Sylvestre Ledru

Review:

Commented:

State:

Scilab-Version: 5.2

Vote:

Created: November 17, 2009

Abstract

This SEP details the evolution of `texprint` and the introduction of a `prettyprint` function.

Rationale

In the version 5.2 – beta 1 of Scilab, the capability to render graphics with LaTeX or MathML has been introduced. However, the output produced with `texprint` is not compatible with the new text rendering features.

Proposal

The proposal consists in three elements:

- 1) Write a new function called *prettyprint* which take any Scilab datatype and provide an output to TeX, LaTeX or MathML
- 2) Plug the previous function `texprint` on `prettyprint` to keep the previous compatibility
- 3) Tag the function `pol2tex` as obsolete since the feature will be included in the *prettyprint* function

prettyprint function

The profile of the `prettyprint` function will be:

prettyprint(*ScilabVariable*, *outputFormat*, *processByElement*, *isWrapped*, *delimiter*)

ScilabVariable: the variable to print

outputFormat: can be *latex*, *mathml* or *tex*. Default: *latex*. Note that `tex` is not support by the text rendering of Scilab.

processByElement: if the variable will be displayed as a whole or not.

For example, `prettyprint(a=rand(3,3),fnt="latex", processByElement=%t)` will process element of the matrix by element. If `processByElement = %f`, a single matrix will be displayed. Default: `%f`

isWrapped: Add the special keyword of Tex or LaTeX export (it does not have any effect on MathML). Default: `%t`. Note that it is mandatory for the text rendering in Scilab graphics

delimiter: Defines which delimiter should be used for representation of the matrix. The delimiter can be '(', '{', '[', '|', '||' or ". Default: '('

Example:

```
xstring(0.2,0.2,prettyprint(rand(3,3)))
```

```
xstring(0.2,0.2,prettyprint(rand(3,3),"latex",%t))
```

```
xstring(0.2,0.2,prettyprint(a=rand(3,3),"latex",%f,%t,"["))
```

```
xstring(0.2,0.2,prettyprint(rand(3,3),"mathml"))
```

```
prettyprint(rand(2,3),"tex")
```

```
s=poly(0,'s'); G=[1,s;1+s^2,3*s^3]; xstring(0.2,0.2,prettyprint(G))
```

```
x=poly(0,'x'); p1=(x+1)*(x-3)^5;p2=(x-2)*(x-3)^3;
```

```
xstring(0.1,0.1,prettyprint(p1+p2));
```

```
xstring(0.2,0.2,prettyprint(p1));
```

```
xstring(0.3,0.3,prettyprint(p2));
```

texprint function

The `texprint` function will be replaced by the following code:

```
function [tt] = texprint(a)
```

```
    tt=prettyprint(a,'tex');
```

```
endfunction
```

And tagged as obsolete for version 5.3 of Scilab.

Changelog

1.0 – Initial version

Copyright

Sylvestre Ledru