

# SEP # : 36 – Pretty print of variable

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Review:

Commented:

State:

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Vote:

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## 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, delimiter, processByElement, isWrapped)*

*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.

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

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

For example, `prettyprint(a=rand(3,3),fmt="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

### Example:

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

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

$$\begin{bmatrix} 0.0683740 & 0.7263507 & 0.2320748 \\ 0.5608486 & 0.1985144 & 0.2312237 \\ 0.6623569 & 0.5442573 & 0.2164633 \end{bmatrix}$$

```
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*s-1))
```

$$\begin{pmatrix} -1 + s & -1 + s^2 \\ -1 + s + s^3 & -1 + 3s^4 \end{pmatrix}$$

```
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

1.1       - Change in the order of the input argument: delim becomes the  
third + screenshot added

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