wxM_tutorial.wxm

In this wxMaxima document we show how to use wxMaxima (a multi-platform GUI for the Maxima computer algebra system) to develop text and input cells.

The wxMaxima system uses the concept of a live mathematical document (like this document) in which text cells and input cells are mixed.

This allows the user to see code (within a text cell) for possible future computations without it being currently active in an input cell.

e.g.
diff(x^3/3,x);

Each cell has a bracket on the left border of the document.

```
(%i1) diff(x^3/3,x);
```

$$(\%o1)\quad x^2$$

The input cells below (i.e. the Maxima code within them) can be evaluated with CTRL-R. That can be tried now. Key in CTRL-R.

Any output wxMaxima (the GUI) gets from Maxima (the computation system) will be attached into the output part of the input cell, after the code generating the output.

The semi-colon ";" at the end of any line of code allows the result from that line to be displayed

```
(%i2) diff(x^4/4,x);
```

$$(\%o2)\quad x^3$$

The "$" at the end of any line supresses the display.

```
(%i3) diff(x^4/4,x)$
```

Resulting values may be assigned to a variable name using the operator,":" and may then be displayed using the semi-colon ";"

```
(%i4) ddxx4:diff(x^4/4,x)$
      ddxx4;
```

$$(\%o5)\quad x^3$$

The variable may be displayed by name

```
(%i6) ldisplay(ddxx4)$
```

$$(\%t6)\quad ddxx4 = x^3$$

The % sign is used to carry the result of the previous computation forwards to the next line without having to assign a variable name, making for very compact code.

```
(%i7) integrate(x^3,x)$
      ldisplay(%)$
```

$$(\%t8)\quad \% = \frac{x^4}{4}$$

In order to modify the contents of a cell, put the cursor into it.

The left cell bracket will be highlighted, to show that the cell is being edited.

If the cursor is moved upwards past the beginning of a cell a horizontal line appears between cells.

This line is like a horizontal cursor. Pressing any character key will insert a new input cell, while pressing CTRL-1 will open a new text cell.

In order to delete a cell, select the bracket on the left with shift/arrow and press the delete key.

The cut, copy and paste actions need the usual CTRL-X, CTRL-C and CTRL-V commands.

Any document can thus be edited then 'saved as' with Shift-CTRL-S or just resaved with CTRL-S.

The output parts of input cells will not be saved, but may be saved with the File>Export option.

Any cell can be mostly hidden by clicking into the empty triangle at the top of the bracket of e.g. the input cell above. The output can be shown again by clicking again into the triangle. A full triangle shows that the cell (and any output) may be mainly hidden.

When entering brackets of any type into code there is an automatic bracket pair created, but the end bracket can be deleted if it is not yet needed and the bracket closed at the end of the expression.
