Scilab Graphics

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- The scilab graphics model
- Two dimensional plots
- Movies and animation
- Three dimensional plots

- Matlab: **hold on** to prevent clearing [hold off]
- Scilab: **clf** to do clearing [draw now/draw latter]
- Matlab: No paging
- Scilab: **lines(0)** turn off paging.
- Matlab: pi = 3 changes the value of π
- Scilab: Allows #, !, $ and ? in variable names

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Scilab Graphics are a moving target

3.0 matlab-like plot

4.1.3 Introduced title, xlabel, ylabel

5.1 Dump to jpg png pdf

5.1.1 Official Mac Support (but no tcl)
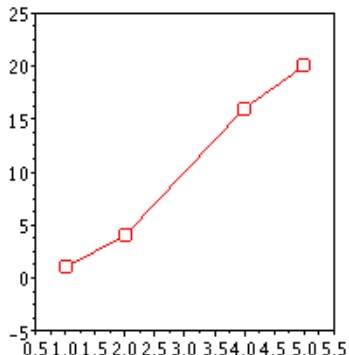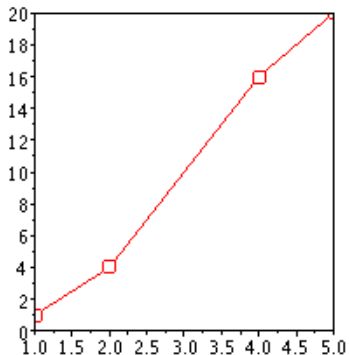
5.2 Latex strings in labels

5.2.1 xs2pdf finally works

```
x=1:10;plot(x,x^2,'b-',x,10*x,'r-');
f=gcf(); // Get Current Figure
a = f.children(1); a = gca(); // Get Current Axes
polyline1 = a.children(1).children(1); // blue plot
polyline2 = a.children(1).children(2); // red plot
```
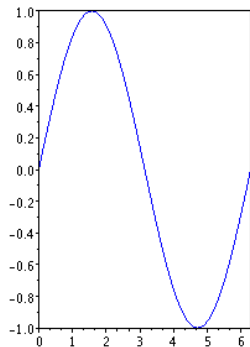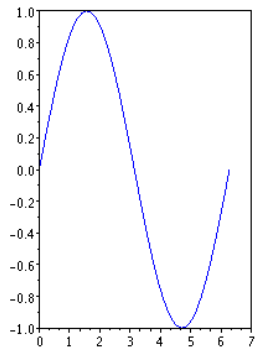
More room

```
a=gca(); a.data_bounds=[xmin, xmax, ymin, ymax];
```
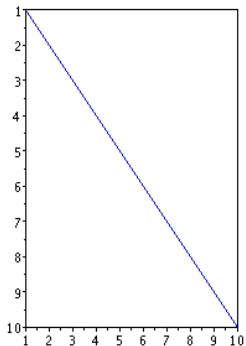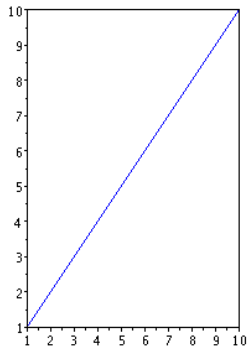
```
t=0:%pi/20:2*%pi; plot(t,sin(t));
a=gca(); a.tight_limits="on";
```
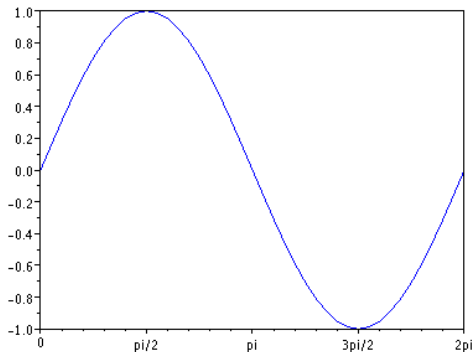
Reversing an axis

```
x=1:10;plot(x,x);
a=gca(); a.axes_reverse=["off","on","off"];
```
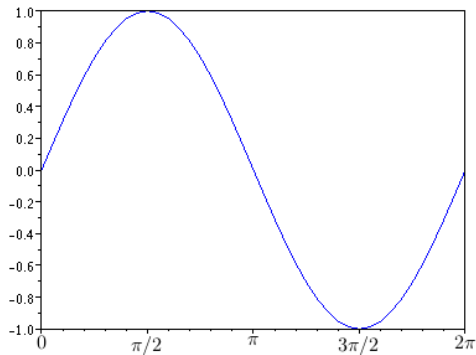
Changing Tick Marks I

```
a=gca(); newTicks = a.x_ticks;
newTicks(2)=[0; %pi/2; %pi; 3*%pi/2; 2*%pi];
newTicks(3)=['0'; 'pi/2'; 'pi'; '3pi/2'; '2pi'];
a.x_ticks=newTicks;
```
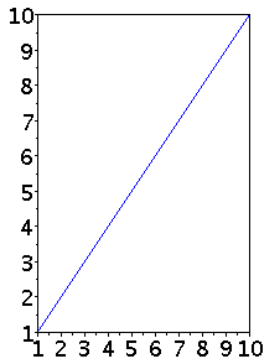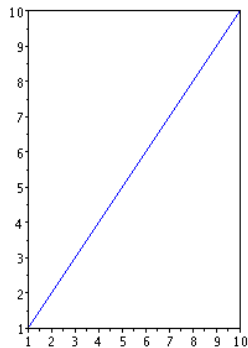
Changing Tick Marks II

Starting in Scilab 5.2

```
newTicks(3)=['$0$'; '$\pi/2$'; '$\pi$'; '$3\pi/2$';
a.x_ticks=newTicks;
```

Font Size

Default is 1, there are also font_style and font_color

```
a=gca(); a.font_size=4;
```

```
f=gcf(); f.color_map=hotcolormap(32);
```

autumn, winter, spring, summer, hot, cool, hsv, jet, bone, gray,
pink, copper, rainbow, ocean

Size of Output Picture

```
f=gcf(); f.figure_size=[460,438];
xs2png(0,'output.png');
```

Also output to pdf, eps, gif, jpg; the pdf was buggy still in
version 5.2, but might be ok in 5.2.1

Animations

```
f=gcf(); f.pixmap="on";
for i = 1:n,
    clf;
    plot;
    show_pixmap;
end;
f.pixmap="off";
```

The clf command clears the figure.
Strangely there is a command clear_pixmap which is useless.

```
disp('Click at Zoom-in Location');
here = locate(1); // one click
```

There is no getframe command, instead you have to save the data as matrix.
Graphics speed and or computation speed could be an issue.

3D Graphics

```
t=0:%pi/20:4*%pi;
param3d(cos(t),sin(t),t/%pi);
e=gce();e.mark_mode="on"; e.line_mode="off";
a=gca();a.children(1).mark_mode="on";
a=gca();a.children(1).line_mode="on";
```