

Supplementary VPython Handout — Plotting Graphs

In many of the programs that we will be doing this semester, it will be necessary to plot graphs of various quantities (in addition to showing the animation of objects). Examples of such plots might be $|\vec{F}|$ versus time in our orbit program, or position versus time. The following is a very brief tutorial on how to do this.

```
from visual.graph import *      # note the slight change here.
#
# Define a graph, this will open its own window. Note that the x=0 and y=0
# define the origin of the graph plot, width and height are the size in
# pixels on your computer screen, xmin,ymin, xmax and ymax are the
# minimum and maximum values on each axis, title is the global title,
# xtitle is the label on the x-axis and ytitle is the label on the
# y-axis. Colors are controlled with foreground and background.
#
mygraph=gdisplay(x=0,y=0,width=600,height=150,xmin=0,xmax=100,
                 ymin=-100,ymax=100,title='My Graph',xtitle='X-Axis',
                 ytitle='Y-Axis',foreground=color.white,background=color.black)
#
# You can then define curves that will appear in the graph window.
#
agraph=gcurve(color=color.blue)
bgraph=gcurve(color=color.yellow)
#
# You can not plot the curves. Assume that the time is t, and that the
# quantities A and B have been calculated.
#
agraph.plot(pos=(t,A))
bgraph.plot(pos=(t,B))
```