

Classes - Specifying Object Characteristics

What Is a Class?

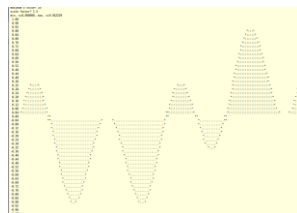
- Consider an *object*, such as a list
- What can you do with, or to, a list?
 - Add elements
 - Remove elements
 - Count the number of elements
 - Add a value to each element
 - Add each element from another list
 - Print each element
 - etc. ...
- The data object, plus the operations on it, can be grouped together as a *class*

User-Defined Classes

- Identify a value or set of values
- Identify operations you want to perform on the value(s)
- Group the value representations and the operations together
- voilà - you have defined a class

Example: Turn the Function-Plotter Into a Simple Class

- What is desired?
 - A text-based plot of X-Y data
 - » A plot like this is an *object*
 - » One *instance* of the soon-to-be-created Plot class
 - Could be horizontal or vertical
 - Filled curves?



Example: Turn the Function-Plotter Into a Simple Class

- What does a Plot object contain?
 - **Size of plotting area**
 - » Number of columns
 - » Number of rows
 - **Data to be plotted**
 - » List of X-values
or Xmin, Xmax plus the number of X points
 - » List of Y-values or a function of X
 - **Methods to draw the plot**
 - » horizontal
 - » vertical