# Graph Generation, Notes/Recommendation

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**Plotting Frameworks:**

**Bokeh:**

Pros:

* Fast HTML generation
* interactive plots
* Can handle multiple plots up to a limit (see ‘testBokeh.py’ for an example of generation)

Cons:

* Can’t handle the number of plots requested
  + can handle up to about 5 with smaller data sets
* Has some issues with generation requiring different variable names (once again, see code)

**Plotly:**

Pros:

* Very pretty plots,
* allows for direct data comparison,
* MatPlotLib conversion built-in
  + see: <https://plot.ly/python/matplotlib-to-plotly-tutorial/>

Cons:

* Offline mode is the only way to save plots locally
* much slower than other two options
* to use unlimited online(private) storage a license would need to be purchased
* subplots (may?) not support multiple types

**MatPlotLib/PyPlot:**

Pros:

* Can handle multiple plots on a page,
* code already has a start from previous software (faster to implement),
* we already know it works.

Cons:

* Plots are simplistic,
  + not interactive,
* wouldn’t be much work to re-use code from the previous program to make the new one (not sure if this is an issue or not)

**Recommendation:**

My recommendation would be twofold:

* Stick with MatPlotLib for the time being in order to generate multiple plots per page
  + Simple to recode
    - Hardest part would be dynamically creating HTML, but that isn’t even that difficult
  + We know it can do everything we want
  + Could have a working module in less than a week
* Look into a “Advanced Plot” mode
  + Would allow the user to create a single, interactive plot
    - Limited options
    - Useful for getting into the nitty-gritty of a single set of data
  + Would use one of the more powerful engines for this (Bokeh or Plotly)
  + Allow the user to download that plot as a separate file as well for comparison sake.
  + Second mode would be easy enough to create once the multi-plot mode is done, as with using the simpler framework the first module would be created fairly rapidly.