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"BOM WEATHER APP" (ie. AustWeather — name TBA).

- Uses SILO gridded climate data (available under a CC Attribution Licence).
- Input Latitude, Longitude, Start Date (mandatory parameters)
  - End Date, variables list, output filename,

and the script/App downloads the weather data for you by sending the formatted HTTP req

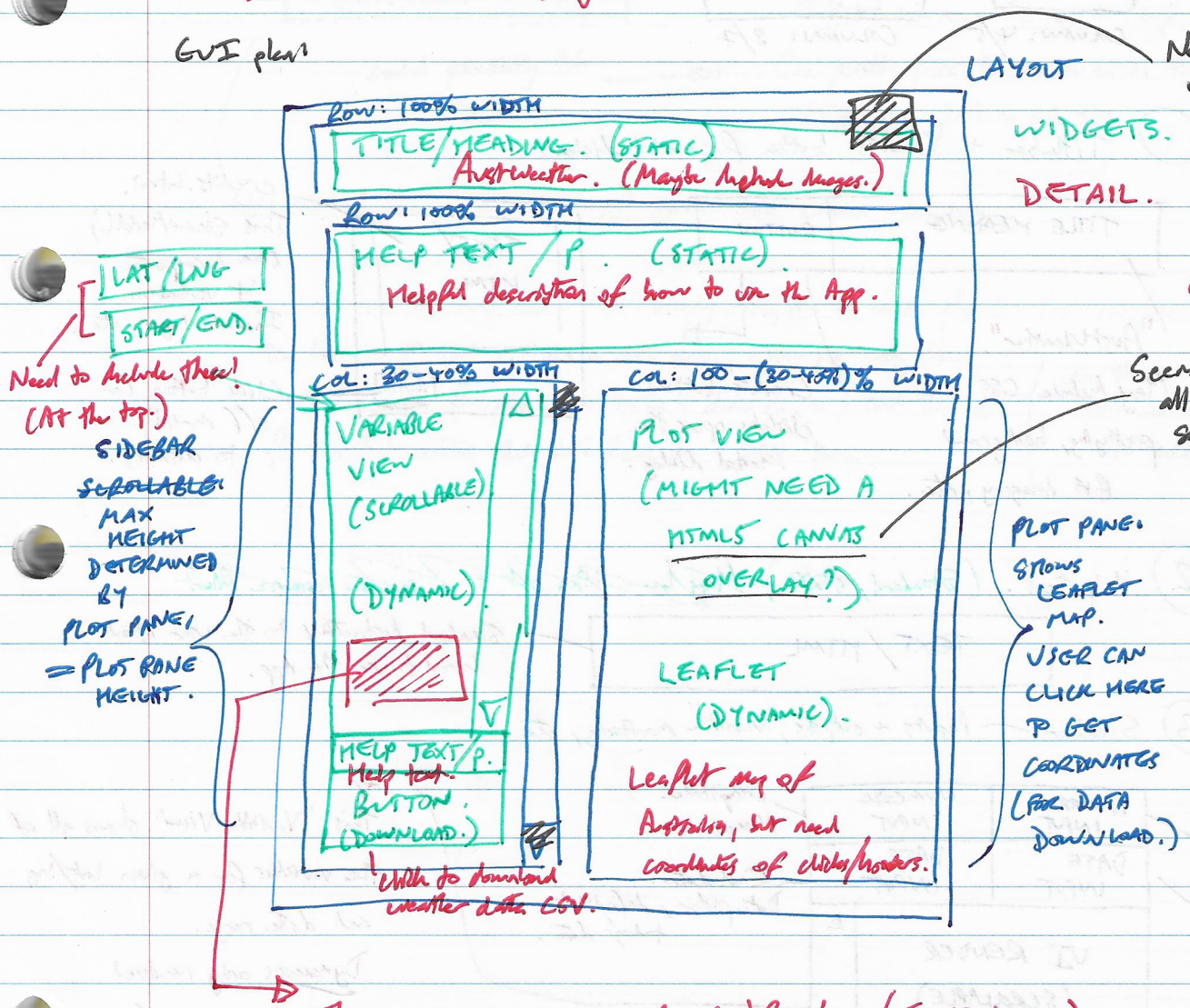
TODO: R/Shiny App version:

- need: a leaflet map: user clicks to get the coordinates (should be able to do this with base Leaflet/JavaScript if necessary.

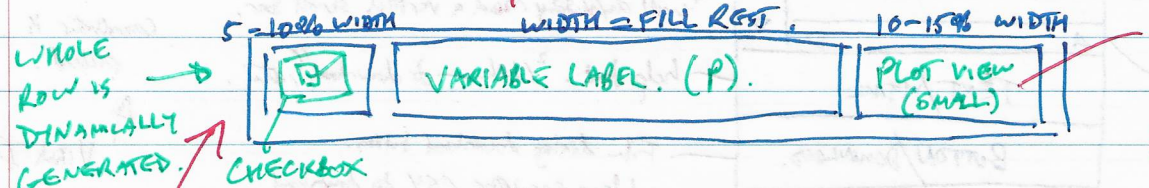
  ↳ plot views to show the data first
  - checkboxes for the variables to include.
  - library code — have the data download as a separate function that can be import into projects easily — gives easy data.frame access to the weather data?

will be similar to the current Ruby code.

GUI plan:



The variable view is composed of 'Rows': (Empty to start).



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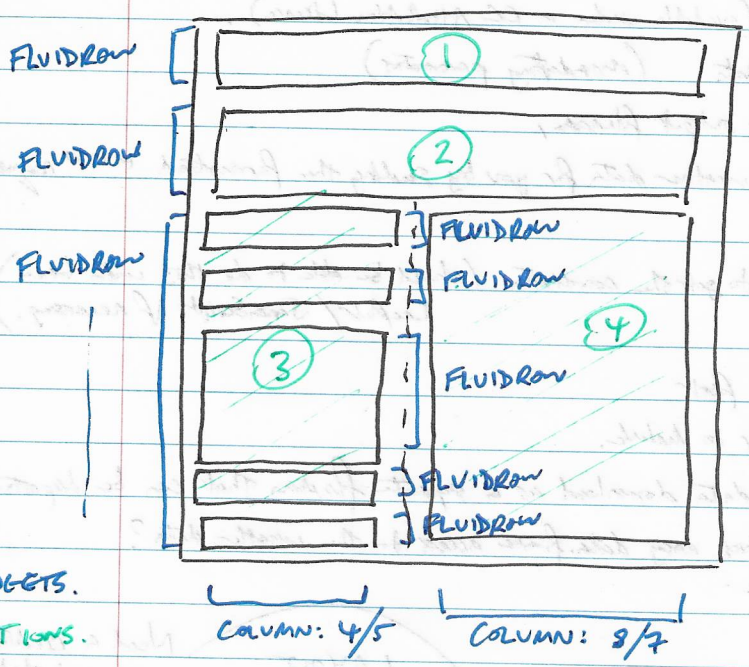


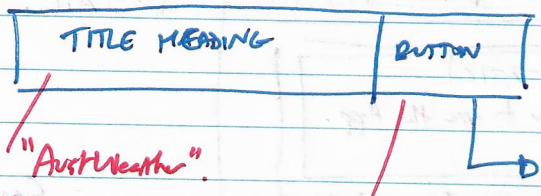
FLUIDPAGE LAYOUT
(Shiny docs do layout in Fluid apps, can use that for reference.)

will also need some things in the header:
- CSS stylesheet
- window title
- scripts (for the canvas overlay.)

(5) Library code.

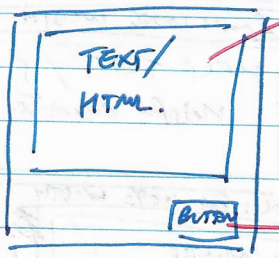
WIDGETS.
SECTIONS.
DETAILS.

(1) Titlebar + 'Credits' button for modal dialog.



"AustWeather". May include CSS prettying, background BM imagery, etc.

"Credits" button: clicking opens the modal dialog.



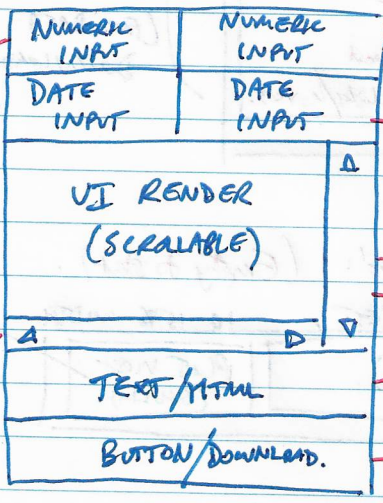
credits.html. This showModal() can incorporate if verbatim. Include logos, etc.

Click button (or off modal) to dismiss.

(2) Help text. (Standard, static) May be written out to a separate resource file?

Standard instructions to the user about how to use the app.

(3) Sidebar — Inputs + outputs, variable monitoring, etc.



Latitude. Numeric box.

Longitude. Numeric box.

Start Date. (Blank to begin with?)

End date. Date picker, defaults to today's date.

This "Variable View" shows all of the variables for a given lat/lng and date range.

Dynamic: only rendered when a set of coordinates is picked.

Will definitely need a vertical scroll bar.

Might even need a horizontal scroll bar?

Help text. "Click — to download", etc.

File dialog download button. User specifies CSV to download the data to.

Visual flash/colour to signify this to the user?

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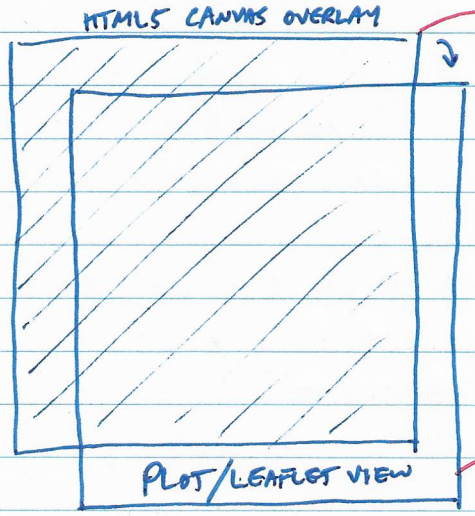
(4) Leaflet map, HTML5 canvas overlay to grab mouse click coordinates + draw?



Will need a canvas overlay: the user clicks on the canvas, and we get the latitude/longitude coordinates by scaling the cursor position appropriately.
↗ Additionally, we can draw the clicked position.
All in JavaScript.

Leaflet view: loads up a map of Australia that can be zoomed, etc.
↑ But! we need this not to interfere with the canvas

could potentially take a long time. → Can possibly pass the mouse events through? Might need to look into this.

Will need functions to convert (x,y) position into Latitude + Longitude.

(5) The 'crux' of the app code should simply delegate to an R function that retrieves the data.
- i.e. have a fn that returns a data frame after retrieving the weather data for given coordinates + date range, and then a function that writes that data frame to a CSV. Done.

Use the existing Ruby code as a base + to validate.