Flowchart for Recombinase Project

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DAMPLAB / WETLAB MEETING #2

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a) **Step by Step instructions (in both user and client / scientist forms):**

User Form:

HTML to be used:

authorization.html
repo.html
primer.html
fragment.html
procedure.html
pcrisimplified.html
colorcodes.html

1) **The user logs in by filling out the credentials stated in the authorization.html web server page.**
2) **The user can then be able to view all of the attributes from the DNA Fragments, PCR Table, and Rxn Table**
3) **If the user so choses, he or she can also add additional gel information on the image repository, and tag the images (the date of upload will be automatically generated by HTML)**
4) **Finally, the user may be able to view in more detail some aspects of the home page, such as temperature color codes and outside sources about CIDAR LAB and the Gibson assembly procedure**
5) **(to be built): User can log out, and the webpage will clear the users' cookies / session state for next login**

Client Form:

HTML /PHP to be used:
authorization.html
repo.html
newhomepage.html

Note: The flowchart is only a simplified version of the workflow for the project. A more advanced and complete version will be put in a separate document using STAR UML application.

uploadimage.html
input.php
inputmain.html

1) **The client / scientist logs in by filling out the credentials (username, password(s), research lab / group), via the same authorization.html web server page.**
2) **The scientist, unlike that of the user, will see a new version of the Gibson Assembly homepage, in that it is in a compact form**
    a. **DNA Fragment Table: the client / scientist can immediately determine the name, location, and DNA Fragment size of the DNA fragment, without having to consult the lab notebook**
    b. **PCR table: unlike the user form of the PCR table, the client form can allow the client/scientist to DIRECTLY upload / download images, and tag them, with addition to the primers distinguish between forward and reverse in direction**
    c. **Rxn setup: same as the user one**
3) **Afterwards, the client / scientist can request a "Template" for Excel / Word Document to create a new data set or work on an existing data set (likely from Google Drive or another outside source [Smartsheets is a possibility if Google Drive gets too complicated])**

    Site:

    https://app.smartsheet.com/b/home

4) **They can also download existing data sets or upload new ones and store the data sets in a file repository**
5) **In addition, they can upload/download any additional images as well outside of the PCR Table, and tag them**
6) **Overall, the client / scientist side of application has significantly more features than the user side**

b) Deliverables (in a Table Format) [all of them in HTML programming language]:

***** Note: the project is still in prototype / design stage, so no actual usage of the webpage and all of the deliverables will be available for view *****

***** Note: not all deliverables will be used in the final product, given a need to make a "Template" / skeleton version of Excel spreadsheet and / or organization of the webpages into one cohesive web app *****

Name of deliverable	Use / Description
newhomepage.html	The webpage is a new (and improved) version of the Gibson Assembly Homepage, which will give a link to a "repository" of

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	related images in a "tagging" action, and also a Benchling link for each DNA fragment part / client form of home page ** as of right now, due to visibility issues on the Tomcat web server, the table is split into three parts **
authorization.html	**The OAuth (online authorization) or the login landing page of the Gibson Assembly. Those wishing to be granted access to the Gibson Assembly Homepage will need to add their username, password(s) [confirmed], the research lab, and (optional) research group name**
inputmain.html	**The user is able to upload any input files necessary in order for the Gibson Assembly to display data (mainly attributes) that were associated with the file(s)**
uploadimage.html	**HTML file that will allow the user to upload an image (make the max resolution 1500 * 1500 pixels), and then be able to make a wrapped text box for gel information and additional description (if necessary)**
primer.html	**the "original" Gibson Assembly primer homepage. It is an "expanded" version of Rohin's SGI-GA excel sheet data, with links to DNA fragments, PCR simplified products, and a step by step procedure for Gibson Assembly / user form of home page**
fragment.html	**HTML file that stores the data for DNA fragments (Melting Temp (°C), Name, Location, DNA fragment size (kb), DNA weight)**
procedure.html	**HTML file that gives an example of the Gibson Assembly procedure, with the attributes (step number, step description, volume in μL [microliters], time in minutes, temperature in Celsius, cycles, reason/note)**
pcrsimplified.html	**HTML file that stores the data for PCR simplification, with the following attributes in tabular form: - Amount of concentration required - Ratio of absorbance (A260/280) - pmol / μL**

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	- **target DNA (in nanograms)** - **required volume in μL** - **target pmol** - **required volume in μL : pmol (ratio)** - **pmol in final solution**
repo.html	**Simple "storage / repository" HTML webpage that will allow users to specify which photos to tag, and also be able to allow the user to see the related tagged images**
input.php	**PHP file (generated by PhpStorm embedded within HTML that will be able to process the input that was handled in inputmain.html**
colorcode.html	**Small HTML file that determines the significance of the melting temperature of a particular DNA fragment (annealing, hybridization…)**
thumbnails.html	**HTML file that will allow the users to see thumbnails of the tagged photos, their dates of upload, and also what quantity of tags each particular photo has (default is 1)**

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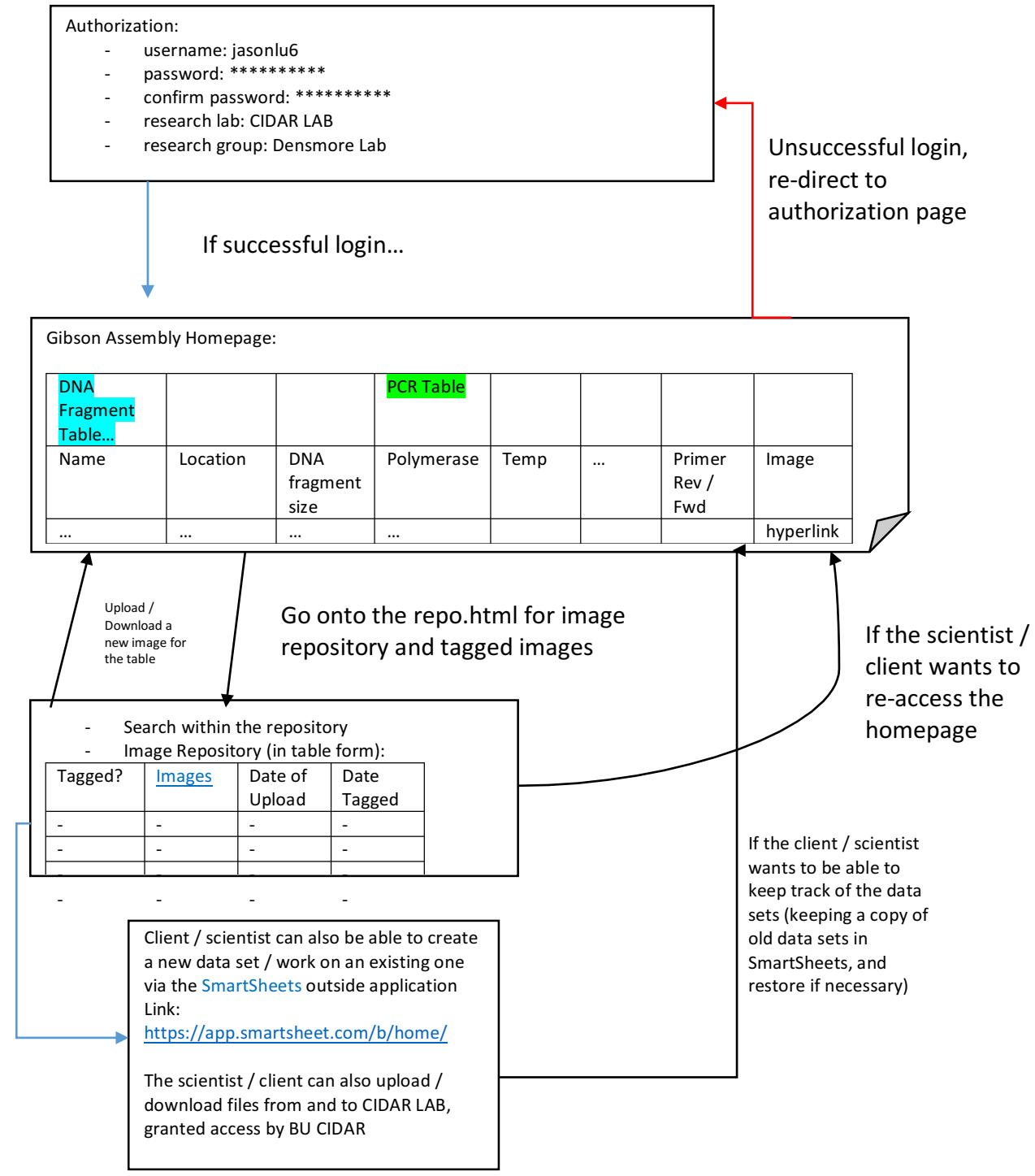
c1) Flowchart (from the Client Perspective):



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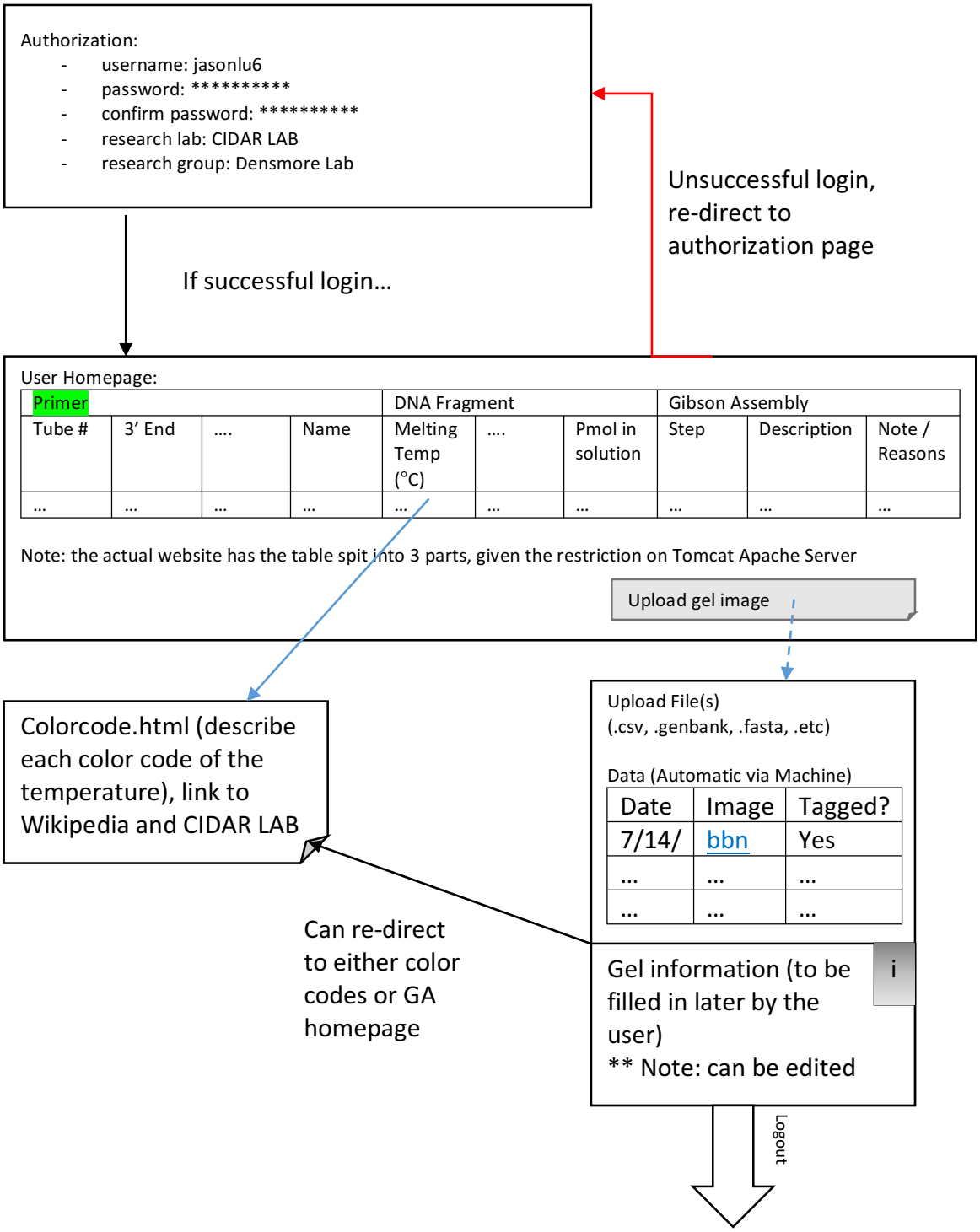
c2) Flowchart (from the User Perspective):



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