**1. Title**

Place an easy to read title for your program at the top of the document

**2. Authors**

List all names and emails of the students who co-authored this design document.

**3. Description**

Briefly describe the program.  One or two paragraphs at most here.

**4. Stakeholders**

**Identify (name and describe) the stakeholders that this program design is intended to benefit most.**Note: Your program does not have to address all needs of all stakeholders.  You are choosing who to write your program for, knowing that all stakeholders needs may not be met by your program.

**Tips:**

1. **Reread your Exercise #2 proposal**and **answer these questions**
   1. Who is the primary [stakeholder (Links to an external site.)Links to an external site.](https://en.wikipedia.org/wiki/Stakeholder)?
   2. Who are the secondary stakeholders?
2. Give each a stakeholder a name or title and brief description of their interaction with the program or its results.  List the primary tasks for each stakeholder.
3. Organize your choices in a table or list in your design document.

**5. Output**

**Format**

What is the primary result (output) that the program will produce or provide to the user?

**Example**

Give an example (just make up the "data") for the format of your program's output.

**6. Input**

**Required Data**

What input sources are required to produce the primary output?

**Example**

Give an example of the format for any required input sources.

**7. Diagrams**

**Home page (required)**

1. Re-consider Nielsen's [10 Heuristics of User Interface Design (Links to an external site.)Links to an external site.](https://www.nngroup.com/articles/ten-usability-heuristics/) and address as many as possible within your pages.
2. Sketch a picture or frame of the **main home page** for an application that solves this problem.
   1. Draw a rectangle that is computer monitor shaped (landscape)
   2. Draw and label input/output components like:
      1. buttons,
      2. checkboxes,
      3. text input fields (single-line or multi-line),
      4. banners,
      5. etc.  (anything that you think would be good)    
           
         Do not worry about if you know how to program it.  Just worry about what you think is the best interface for the program.
3. Take a picture, upload, and insert that picture into your Design Document.

**Additional Pages**

Draw other **pages** or screen formats that you think will be useful for your program keeping in mind Nielsen's Heuristics.   If entire program design is handled by one page, you may omit this section.

1. Draw a rectangle for each page
2. Label or name that "page" so you can refer to it in other places.
3. Draw and label the components of that page

**8. Control Flow Graph**

Draw an overview (graph) of your program's pages.

1. Draw a vertex for the home page
2. Draw a vertex for the output produced
3. Draw a vertex for the input required
4. Draw a vertext for other pages
5. Name and label each vertex
6. Add edges between the vertices showing the transitions from input to home and home to output and from other pages to one another.
7. Label each edge with the action (transition) that produces moves data or control from one view to another (not all pages must be reachable from all other pages, but they all should be reachable from the home page in one way or another).

**9. Class Summary**

List and describe the classes that you expect to design and implement.

1. Class name
2. Class description of the purpose and use of the class, include fundamental operations (methods) to help describe the class

**10. Implementation Phases**

Assuming that it is not likely a small team can complete entire program at one time, prioritize which operations must be available in each of three phases of the program development.

1. Phase 1 - describe the minimal functionality that will be completed for phase 1
2. Phase 2 - describe functionality that will be added in phase 2
3. Phase 3 - describe functionality added in the final phase
4. Future phase - describe functionality that is desired, but won't be in the first three phases.