Thesis Structure

From week 12 meeting notes:

* Chunks of information do not form a good story. Want to tell a story of the 13 weeks of research this semester:
  + Here’s the problem I’m trying to solve for this thesis
  + This is why it’s interesting
  + Why it’s a challenging problem
  + Why it’s an engineering problem
  + Here’s the research I’ve performed on how other people have tried to solve it
    - I’ve come across differential privacy, it looks promising because it does xyz.
  + Method section:
    - Here’s some code that has allowed me to explore DP
    - I’ve inputted some fake data that is relevant and here are the results that I got from it.
    - I’m going to use matlab to
    - I’m going to use the open source code to explore DP, set up the parameters that I need for my actual implementation. “what is an acceptable amount of privacy loss. I’m going to explore it for a data set that is like what I’m going to be using. I’m going to be writing most of my code in matlab using a link to SQLite, here’s my exploration of this to make sure that matlab can interact with SQLite and that I know how to perform queries. So I’ve done the ground work to, in the first week of the next semester, get myself ready to hit the ground running in doing part B of the thesis.”
  + All prelim work should show that I’ve set myself up to go.
  + “This is what I’ve learned, why it’s good and I can apply the theory in this open-source software to a dataset that is close to what I intend to do.”

1. Introduction to the problem
2. Legal requirements/existing legislation
3. Existing solutions to the problem, and their limitations (paid, no open source, difficult to use, not intuitive, etc.)
4. Proposed solution: differential privacy
   * Explanation of functionality
   * Ticks every box
   * Used in real world applications
5. Limitations of differential privacy
   * Adding noise makes small sample sizes inaccurate
6. Introduction to differentially private data retrieval (DPRP)
   * Why’s this better? Is it an easy tweak from DP?
7. Methodology
   * See ‘Method section’ above.
8. Results.
9. Discussion.
10. Plans for the future (semester 2, thesis part B)
11. Conclusion.