Venn Diagram Requirements

A project to make a Venn diagram creation tool which is easy to use and interpret.

Project Purpose & Features:

The primary goal is to make a functional application which can successfully create Venn diagrams. There are essential customer needs which we want to address. Furthermore, we want to add our own features so that the application is a complete package.

In terms of necessary functions, the most obvious one is the ability to create the Venn diagram itself. On top of that, the user should be able to edit text within the different sections of the diagram. This not only includes the body of each section in the Venn diagram but also the headers for each section. The application should have the ability to change the font and font size in the header. Finally, users should be able to write text in every section, with each piece of text being properly formatted to fit inside.

Combining both the needs and our desired functionality, we have the following feature list:

1. Compare at least two sets of data, visually
2. Add a header/title to the diagram and edit it
3. Add text-boxes
4. Move around the textboxes
5. Choose different colors for the circles to show contrast
6. Display the results of the Venn diagram (i.e intersections, unions, etc) clearly
7. Import valid text files containing a list of elements and show the corresponding Venn diagram
8. Export a snapshot of the diagram
9. Export the data after the Venn diagram is created as a .txt file

Although our requirements will be more refined as we develop our program further, these core features will set a proper framework for the project.

Use Cases

The venn diagram application would be useful to many people. It can be used to import and compare two large sets of data and find their intersection, among other things. Moreover, it can be used to help visualize comparisons. This can be helpful for both users that want to organize data and for users that wish to present the sets of data & their intersection to others. Some of the use cases are detailed below:

1. **Create a Venn diagram:**

    - Primary Actor: User
    - Scope: Venn diagram builder
    - Brief: Users can choose the parameters of venn diagram (name, number of sets, and the colors of the sets). Users can easily import text by using a text file or by typing them in an input box.
    - Triggers: When the user clicks the start button.
    - Preconditions:
        - If the input text file is in a .txt file format, every line has only one element. Every line has a phrase no longer than 40 letters.
    - Postconditions:
        - Minimal Guarantees: User can get a clear view of the composition of the diagram including the name and shape of the set, as well as items in the sample space.

2. **Modify the Venn diagram:**

    - Primary Actor: User
    - Scope: Venn diagram modifier
    - Brief: User can change the positions of items by dragging and dropping them. The items can be added or deleted as well.
    - Triggers: When Venn diagram is initialized.
    - Preconditions:
        - The Venn diagram is successfully built with valid items (at least one item) and valid set name.
    - Postconditions:
        - Minimal Guarantees: There should be at least 1 item in each set

3. **Import a list into Venn diagram :**

    - Primary Actor: User or Tester

- Scope: Venn diagram Input system
- Brief: The application supplies an input function to facilitate unfinished work
- Triggers: When User or Tester needs input previous result. And there is a trigger button called “Import list”.
- Preconditions: The input file should have only one element in each line. The list is in a .txt format.
- Postconditions:
    - Minimal Guarantees: Same content as the input text file.

4. Export Venn Diagram as Text:

- Primary Actor: User or Tester
- Scope: Venn diagram Output system
- Brief: The Venn diagram can export a text report which would be in a .txt file format.
- Triggers: When User or Tester needs the results in plaintext. The user would click a trigger button called “Export text report” that would then perform the action.
- Preconditions:
    - There should be at least 1 item in each set.
- Postconditions:
    - Minimal Guarantees: The image should be easy to read.

5. Export Venn diagram as an Image:

- Primary Actor: User or Tester
- Scope: Venn diagram Output system
- Brief: The Venn diagram can be exported as an image which can be in any specific image file format.
- Triggers: When User or Tester needs the result in an image. There would be a button called ”Export” which would give the option to either export as an image or text. Choosing an image as the option would perform the action.
- Preconditions:
    - There should be at least 1 item in each set.
- Postconditions:
    - Minimal Guarantees: Output should be clear. The resolution of the picture needs to be clear enough to clearly see text.