

EECS2311 W20 GRB #11

VENN DIAGRAM

SOFTWARE REQUIREMENT DOCUMENT

SUBMITTED BY: Tianpei Liao
Arda Temel
Lynn Al Agilly
Jeyaprashanth Sivasubramaniam

YORK UNIVERSITY

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Introduction

The Venn Diagram system is an application whose purpose is to visualize and categorize user data using Venn diagram. Users can add each data manually or multiple data from .txt file once. The system allows users to categorize the data within the Venn diagram UI and visualize the data according to their own category efficiently and creatively.

Purpose and Goals

Goals:

- Develop a software system that allows users to visualize and present their data using Venn diagram and other UI design contents (colour, font, etc.).
- System should work all operating systems without any restrictions and under minor system requirements.
- GUI and System functions should be easily understandable by most users and used universal techniques and functions (icons, mouse events, button clicks, etc).

Purpose:

Our simple design application helps users to visualize their data using Venn diagram easily creatively and effectively and have little fun with our app.

Use cases for the system

1. Add New Entry

a. Add new entry manually

Users can add new data one by one using the add icon button and add text, colour, shape and description for the entry. Default background colour of the entry is pale yellow and the default shape of the entry is rectangular.

b. Add new entry from file import using .txt file

Users can add multiple new entries using a text file by import file option.

2. Edit Existing Entry

User can update the existing entries and can change their text, colour, shape and description.

3. Delete existing entries

Users can delete the existing entries by using the drag and drop option and by dragging the object on the delete icon button. User can also delete multiple entries at once by selecting more than one entry.

4. Drag and Drop

Entries on the screen can be dragged and dropped anywhere within the screen and users can arrange them. And also, the system prevents overlapping entries if the user drags and drop one entry top of another entry dragged entry will align next to the old one.

5. Entry Categorization

User can drag and drop the entries into Venn diagram according to the selection part of the Venn diagram lit up and also corresponding set's "Number of elements" count will increase and when dragged object leave from circle space corresponding diagram space will lit down and corresponding set's "Number of elements" count will be decreased.

6. Exit from the application or closing.

User able to exit the application by click the close (X) icon in right top corner of the window or select exit from file menu dropdown list.

7. Export application file as image file (.png format)

User can export current state of the application as image file by clicking export button file menu dropdown list.

8. Save current state of the application

User can save their current state of the application. Saved file contains each label's text, colour, shape and location. And use load function to load the file to the application and resume working.

9. Load the existing save file

User able to load the saved file into the system and start working on it.

10. Set name for Venn diagram circles

User can input name for each circle of the Venn diagram.

11. Create answer labels for Test mode.

User can create answer labels for test mode by import from text file. And also add additional answer labels from edit menu.

12. Delete existing answer labels.

User able to delete already uploaded answer sets from the application. Or by deleting answer sets to exit from Test mode.

13. Submit answer sets

User can submit the answer that they created by drag answer labels to correct Venn diagram circles to check for evaluation.

14. Adding additional answer sheets.

User can add some additional answer sets to improve the given task. Additional answer will be appended with previous set.

15. Undo and Redo

User can undo and redo their executed operation. Currently this feature only works with add, delete, drag, import / load operations. If user executed any of the mentioned operations they can undo or redo the operation.

Acceptance test cases:

The software system should have the following acceptance cases by the end of its current mid-development cycle.

Procedure	Expected result
Start application and GUI visual	<ul style="list-style-type: none">- Application start normally within recent amount of time, all GUI contents are in proper alignment- Main window should have two Venn diagram circles in the center of the application.- Application in normal mode and Test mode is disabled.- "Submit" button in main window should be disabled- In edit menu "Add Answers" and "Edit Answers" drop down menu items should be disabled.
Add new entry manually	<ul style="list-style-type: none">- User able to click add icon button- Second "Add Entry" window should popup- User can enter text, change colour of the text- Using scaler to change the shape of the text- User can add detailed description to text- When user modify the text, colour, shape of the text the sample preview text should change accordingly- User able to click create button- Using create button to create new entry- Created new entry will added to the main screen- User can create text with maximum of 10 characters.- If user try to enter more than 10 characters in text field system will be consumed the extra characters (ignore).- After create the entry user can add using ENTER key press- When adding new entries one by one the new entries auto arrange next to previous entry
Add multiple new entries / import	<ul style="list-style-type: none">- User able to click menu- able to select import menu item- file selection will pop up and use able to open selected .txt file- Imported new entries add to the main screen and auto arrange next to each other

	<ul style="list-style-type: none"> - Added new entries has default colour (white background) and shape(oval) - If user import more than one time, entries from last imported text file will be added to the Main window - System should allow maximum of 25 labels and each label's size should be less or equal to 10 characters.
Delete existing entry	<ul style="list-style-type: none"> - User able to drag and drop the existing entry on top of the delete button icon - Dropped item should be deleted and remove from main screen.
Edit existing entry	<ul style="list-style-type: none"> - User able to double click existing entries - Second "Edit Entry" window should popup - User can enter text, change colour of the text - User can only input maximum of 10 characters in text field - If user try to enter more than 10 characters in text field system will be consumed the extra characters (ignore). - Using scaler to change the shape of the text - User can add detailed description to text - When user modify the text, colour, shape of the text the sample preview text should change accordingly - User able to click edit button - Using edit button to edit existing entry - Update should be visible in the main screen - After update the entry user can add using ENTER key press - When adding new entries one by one the new entries auto arrange next to previous entry
Entries in the screen not overlap	<ul style="list-style-type: none"> - when user drag and drop one entry on top of another entry it should not be overlap and auto arrange next to another entry
Drag and drop the entry and within the screen boundary	<ul style="list-style-type: none"> - User only allows to drag and drop the existing entry anywhere within screen boundary - If user dragged the item out of screen mouse cursor should stop at the window line and dragged entry rearrange inside the screen line
Drag an entry to inside the Venn diagram	<ul style="list-style-type: none"> - When user drag and drop the entry inside the diagram space the receiving diagram should lit up - Corresponding diagram "Number of elements" count should increase.

Drag and drop the entry from one part of the diagram to another (from left to right, from middle to left, etc)	<ul style="list-style-type: none"> - When user drag and drop the entry inside the diagram space the receiving diagram should lit up - Corresponding diagram “Number of elements” count should increase. - Previous diagram space should be lit down and corresponding diagram “Number of elements” count should decrease. - If the new space is a union of two circles then both diagrams should light up and both diagram elements count should increase.
Export existing data as image file (.png)	<ul style="list-style-type: none"> - When user select export option from drop down file menu then a file explorer window should be opened - User able to create a new file name and select the location for save the exported entries file - When user export the file, the exported file should be saved in image format in destination.
Display entry description	<ul style="list-style-type: none"> - When user bring the mouse cursor over the existing entry description should be displayed. - If description is empty for the selected entry it should inform the user by “Double click to set description” message
Input set name	<ul style="list-style-type: none"> - When user double clicks the set name, set name change pop up window will show up - User can change the name for sets - Once user changed name and click “OK” new name should be visible in the main window - If user did not change the name or leave text field empty then existing name remains.
Multi selection / Select multiple labels at once. And Delete multiple labels at once.	<ul style="list-style-type: none"> - User able select multiple draggable labels by mouse rectangle selection. - Selection visible in main window - User able to drag and drop the selected multiple labels at once. - User able to delete selected multiple labels at once using backspace button - After press the backspace button, selected multiple labels removed from main window.
Create answer labels	<ul style="list-style-type: none"> - User able to create answer labels from press the “Get Labels” button - Once button pressed file explorer should open - User able to select the file from destination and open it - imported labels displayed in Main window in random order.

	<ul style="list-style-type: none"> - System should notify the user by Success message and notify the user about delete and adding additional answers. - Once answer added to the system, it will be moved to Test mode state. - Create new entry, delete button icons will be disabled - Background colour will be changed - “Add Answers” and “Delete Answers” menu item in edit menu should be enabled. - “Submit” button for submitting answers will be enabled - When user add answer labels again using “Get Labels” button it will replace the previous answer labels.
Adding additional answer labels	<ul style="list-style-type: none"> - Once user added first set of answer labels then user able to input additional labels from edit menu - When user click edit -> add Answers file explorer should be opened. - User able to select text file from destination to import new set of answer labels. - When user imported the new set of answer labels, they should be visible in main window and arranged below the previous set order.
Delete answer Set	<ul style="list-style-type: none"> - When system in Test mode, user able to delete existing answer set by selecting “Delete Answers” from edit menu - Once user select delete answers option existing answer sets will be deleted - System will moved to normal mode from Test mode - Background colour should be changed to default colour - add new Entry and delete button’s icons will be enabled. - “Add Answers” and “Delete Answers” menu items in edit menu will be disabled. - All visible answer labels in main window will be removed.
Undo and Redo [Add, Delete, Drag, Import, Load]	<ul style="list-style-type: none"> - User able to undo and redo process - When user press “Z” key system should execute the previous command that executed by user like undo the current state and should move to previous state. - When user press “X” key system should execute the command that executed by user like redo the process - If there is no undo then redo process should not have future state until user do the undo.
Exit	<ul style="list-style-type: none"> - User can close the application by click the red cross icon at top right corner of the application window or choose exit menu item in file menu. - Both ways application should be expected shutdown

Save the current state of the system	<ul style="list-style-type: none"> - User able to save the current state of the system by choose save option from file menu - Once choose the option a file explorer will be opened and user able to assign a name for the file - When user click save button in file explorer system will save the current state of the system in a text file at chosen destination. - Saved text file should contain entry name, colour, shape, description, and location coordinates.
Load existing saved file	<ul style="list-style-type: none"> - User able to load the existing saved application file to continue their working. - When user press the load option form file menu a file explorer will open for file selection - Once user is chosen the file from the destination all entries from the selected file will be displayed in Main window. - All entries should have their specific properties which are mentioned in the chosen text file. - If the loaded file is empty an error message will be showed - If the user load same file or different file more than one time, entries from last loaded entries will be loaded to the window. (old entries replaced by new ones) - System should allow maximum of 25 labels and each label's size should be less or equal to 10 characters.
Submit the answer sets	<ul style="list-style-type: none"> - User able to drag and drop the new answers within the application window - Once user submit their answers system will evaluate their answers and notify the user with result. - If the answer is wrong then wrong answer labels will be showed in red and correct answers coloured as green