

Software Requirements Document

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TABLE OF CONTENTS

1	PURPOSE
2	DEFINITIONS, ACRONYMS AND ABBREVIATIONS
2	OVERVIEW
	THE OVERALL DESCRIPTION
	USE CASES - WELCOME FRAME
	USE CASES - CUSTOMIZE FRAME
	USE CASES - MAINFRAME
3	ACCEPTANCE TEST CASES - WELCOME FRAME
	ACCEPTANCE TEST CASES - CUSTOMIZE FRAME
	ACCEPTANCE TEST CASES - MAINFRAME
4	GETTING STARTED
	4.1 After Opening The Application
5	COMMON USE CASES
5.1	Opening Application
5.2	Naming your Venn Diagram
5.3	Choosing the number of circles
5.4	Advanced Options
5.5	Selecting Font & Font size
5.6	Selecting Color
5.7	Confirming your Advanced Options
5.8	Creating your Venn Diagram
5.9	Venn Diagram Starting Screen
5.10	Inputting Data
5.11	After Inputting Data
5.12	The Legend
5.13	Adding a Circle

1.0 Purpose

This Software Requirements Document will be detailing what our project will need in order for it to be successful. It is intended for our design team and an agreement upon the customer in order to create a high quality end-product.

2.0 Definitions, Acronyms, and Abbreviations

Statistics/Statistical Analysis: The discipline that concerns the collection, organization, analysis, interpretation and presentation of data.

Venn Diagram: A diagram representing mathematical or logical sets pictorially as circles or closed curves within an enclosing rectangle (the universal set), common elements of the sets being represented by the areas of overlap among the circles.

“Circle/Section”: The inside bounds of a circle in the Venn diagram.

3.0 Overview

This requirements document will include a description of the software product for the customer, use cases and test cases.

4.0 The Overall Description

The software product to be produced is a customizable Venn diagram that crunches data to produce meaningful statistics for the customer to use.. It will provide an easy way to create Venn diagrams that will receive numbers as input, and output various percentages and metrics based on the data as per request by the customer. This product will not receive characters or letters as input and is strictly meant for number analysis at the time of this document, as the customer has requested some string functionality as well for the product. The main objective for this software will be for studying trends in populations, understanding data better, and studying commonalities and differences in data sets. Needs from the customer is to make this software user friendly and easy to use for anyone, provide customizability for the diagram, and having the functionality for big data sets and professional studies. Each circle in the diagram will be colour coded and will include its own legend based on its colour that includes a title and statistical calculations. The customer will be able to change the title of each section of the Venn diagram in the legend as well as what metrics are shown with ease. The customer will also be able to produce meaningful statistics with

the press of a button based on the data inside of the Venn diagram. Overall, this Venn diagram provides an easy way to input data into a diagram and receive statistics based on this data, in a fully customizable and user friendly fashion.

Use Cases

Welcome Frame:

1) Continuing to the Customize Frame:

Brief Description – When the user needs to move to another frame for customizing their Venn Diagram.

Actors – The user of the Venn diagram.

Preconditions – The user has started the application.

Basic Flow – The user will be able to move to another frame “Customize Frame” by clicking the continue button.

Post Conditions – The user is now on the frame “Customize Frame”.

Customize Frame:

1) Name of Diagram

Brief Description – When the user needs to input a name for the Venn diagram.

Actors – The user of the Venn diagram.

Preconditions – The user has clicked the continue button on the previous page which is the “Welcome Frame”.

Basic Flow – The user will click inside the textbox underneath the label “Enter a name for the Venn Diagram”. After that, the user can input any text they want and press/click anywhere outside the textbox to finish inputting.

Alternate Flows – The user will leave the text box which by default contains the name for the Venn Diagram that is “Venn Diagram”.

Post Conditions – The user has entered text into the textbox or text exists inside the textbox.

2) Selecting Font

Brief Description – When the user needs to select font other than default font for adding text on the next frame, “Main Frame”.

Actors – The user of the Venn diagram.

Preconditions – The user has clicked continue from the previous frame, “Welcome Frame”, and has selected “Use Advanced Settings”.

Basic Flow – The user will be able to select the font by clicking on the drop down list beside the label “Selected Font: “. The user can then use drop down list to select the font of their choice. Once that is done, the user's selected font will be displayed beside the label “Selected Font: “.

Alternate Flows – The user will be able to select the default font by either selecting default from the drop down menu or leaving it as it is.

Post Conditions – The user has selected a font from the drop down list or left it as default.

3) Selecting Size

Brief Description – When the user needs to select size other than default size for adding text on the next frame, “Main Frame”.

Actors – The user of the Venn diagram.

Preconditions – The user has clicked continue from the previous frame, “Welcome Frame”, and has selected “Use Advanced Settings”.

Basic Flow – The user will be able to select the size by clicking on the drop down list beside the label “Selected Size: “. The user can then use the drop down list to select the size of their choice. Once that is done, the user's selected size will be displayed beside the label “Selected Size:”.

Alternate Flows – The user will be able to select the default size by either selecting default from the drop down menu or leaving it as it is.

Post Conditions – The user has selected the size from the drop down list or left it as default.

4) Selecting Color

Brief Description – When the user needs to select a different color other than the default color for adding text on the next frame, “Main Frame”.

Actors – The user of the Venn diagram.

Preconditions – The user has clicked continue from the previous frame, “Welcome Frame”, and has selected “Use Advanced Settings”.

Basic Flow – The user will be able to select the color by clicking on the button beside the label “Selected Color: “. The color choosing frame will be displayed where the user can select the color of their choice. Once that is done, the user's selected color will be displayed beside the label “Selected Color: “.

Alternate Flows – The user will be able to select the default color by either selecting black from the color choosing frame or leaving it as it is.

Post Conditions – The user has selected the color from the color choosing frame or left it as black.

5) Clicking Create:

Brief Description – When the user needs to move to the next frame, “Main Frame”, for creating the Venn diagram after customizing the components to their choice.

Actors – The user of the Venn diagram.

Preconditions – The user has customized the components to their choice or the components have a default value.

Basic Flow – The user will click on the “Create” button and the frame will switch to the “Main” frame where the user can begin inputting data into the Venn diagram.

Post Conditions – The user has clicked on the create button and moved onto the next frame, “Main Frame”.

Main Frame:

1) Inputting data

Brief Description – When the user needs to input data into the Venn diagram.

Actors – The user of the Venn diagram.

Preconditions – The user has made a new Venn diagram from the menu and is ready to begin inputting data.

Basic Flow – The user will hover their mouse pointer over one of the sections in the Venn diagram and left click anywhere inside of the area. The system will then determine which section of the diagram the user has clicked on based on the bounds of each section. The user will then be greeted with an input box, then they **MUST** input only a real number value and hit the enter key or the “Enter” box in the input prompt. The system will check to make sure the input is valid (a real number). If it is not a good input, the message prompt will disappear and nothing will happen. If the input is good, the input box disappears, and the input will be displayed on the Venn diagram.

Exception Flows – If the user has clicked outside of the venn diagram sample space, nothing will happen. If the user inputs something that is not a real number, nothing will be outputted to the venn diagram.

Post Conditions – The user has entered a real number as input.

2) Manipulating The Legend

Brief Description - When the user has added data to a section of the Venn Diagram, the legend will appear, with a default title and metrics displayed. The user will be allowed to edit the title.

Actors - The user of the Venn diagram.

Preconditions - The user must have already input at least one piece of data into any one of the main circles in Venn diagram; this will display the legend.

Basic flow - The user will navigate their mouse over to the legend that will be colour coded based on what section of the Venn diagram they inputted data into. The user will click on the part of the legend that says “Add title”. The system will then determine that the user has clicked on that “add title” section by calculating if that mouse click was within the bounds of the label. Then a cursor will appear in the text field, allowing the user to enter a title. When the user clicks off of the text field, their desired title will appear in the legend beside the colour code, as well as above the corresponding circle in the Venn diagram.

Alternate Flows - The user will be able to modify the title of any legend by entering a title in the text field above the corresponding circle in the Venn diagram.

**** NOT IMPLEMENTED YET****

Exception Flows - The user clicks out of the bounds of the text of the “Add title” which causes nothing to happen.

Post Conditions - The user has created a title for the legend or modified a current one.

3) Displaying Statistics

Brief Description - The user wants to see some statistical analysis based on the data inside of the Venn diagram.

Actors - The user of the Venn Diagram

Preconditions - The user has created a Venn diagram and is ready to begin inputting data

Basic flow - When the user has entered data into the Venn diagram, the user can click on the “Display Stats” button to display a text area filled with various probabilities regarding the data inside of the Venn diagram at the time of clicking the button. The user must click on the small letter shown after clicking the button and drag in order to reveal the info due to a bug at the moment.

Alternate flows - The user has clicked on the “Display Stats” button before entering any data, this will result in the text area outputting “null” as percentages because there is no data in the Venn diagram.

Post conditions - The text field now displays statistics of the Venn diagram at the time of clicking the “Display Stats” button.

Acceptance Test Cases

Scope

Included

- Desktop support
- Numbers only input
- Able to add 2 circles with proper functionality

Excluded

- Mobile support
- Text Input
- Able to add circles beyond capacity

Welcome Frame:

1) Continuing to the Customize Frame:

Step 1: Click on the continue button

Expected Result: The welcome frame disappears and the Customize frame appears

Actual Result: The welcome frame disappeared and the Customize frame appeared

Customize Frame:

1) Inputting Name

Step 1: Click on the textbox with “Venn diagram” displayed in it under the label that says “Enter a name for the Venn Diagram”.

Expected Result: A cursor should appear allowing the user to edit the title

Actual Result: A cursor appeared and allowed me to begin typing to rename the title.

2) Selecting Font

Step 1: Click on the drop down list beside the label “Selected Font:”

Expected Result: A drop down menu should appear allowing the user to choose a font

Actual Result: A drop down list appeared and allowed me to choose a font

3) Selecting Size

Step 1: Click on the drop down list beside the label “Selected Size:”

Expected Result: A drop down menu should appear allowing the user to choose a size

Actual Result: A drop down list appeared and allowed me to choose a size

4) Selecting Color

Step 1: Click on the button beside the label “Selected Color:”

Expected Result: A color choosing frame appears where the user can select the color of their choice.

Actual Result: A frame appeared allowing me to choose a color

5) Clicking Create:

Step 1: Click on the “Create” button located at the bottom of the frame

Expected Result: The Customize frame disappears and the Venn diagram frame appears allowing me to start inputting data

Actual Result: The customize frame disappeared and the Venn diagram frame appeared

Main Frame:

1) Inputting Data:

Step 1: The user will click inside of the region of the venn diagram

Expected Result: An input box will appear asking the user for input.

Actual Result: Input box appeared stating “Input number”.

Step 2: The user will input a number and click enter to confirm their choice.

Basic Flow

Expected Result: The input box will disappear and their desired number will appear in the diagram.

Actual Result: Number appeared in diagram

Exception Flow

Expected Result: Input box will disappear and nothing will happen.

Actual Result: Nothing happened.

2) Manipulating The Legend:

Step 1: The user will navigate their mouse pointer over to the created legend after they have inputted a number into the Venn Diagram and click on the “Add Title” label.

Basic Flow

Expected Result: A cursor will appear in the text field allowing the user to enter a title.

Actual Result: Was able to begin typing to change title

Exception Flow:

Expected Result: Nothing should happen since the user has not clicked inside of the label saying “Add Title”

Actual Result: Nothing happened

Step 2: The user will enter whatever they prefer as a title and click off of the text field.

Basic Flow:

Expected Result: Their title now appears in the legend selected and above the corresponding circle/area clicked (could be the “not” sample space).

Actual Result: Title successfully appeared.

3) Displaying Statistics:

Step 1: The user will move their mouse to the “Display Stats” button and click on it.

Basic Flow:

Expected Result: The button is clicked and there appears to be a text area detailing proper statistics based on what is inside of the Venn diagram at the moment of clicking.

Actual Result: There appeared to be a small portion of the text area, I had to click and drag to highlight the rest of the text area in order for it to appear.