Design Folio

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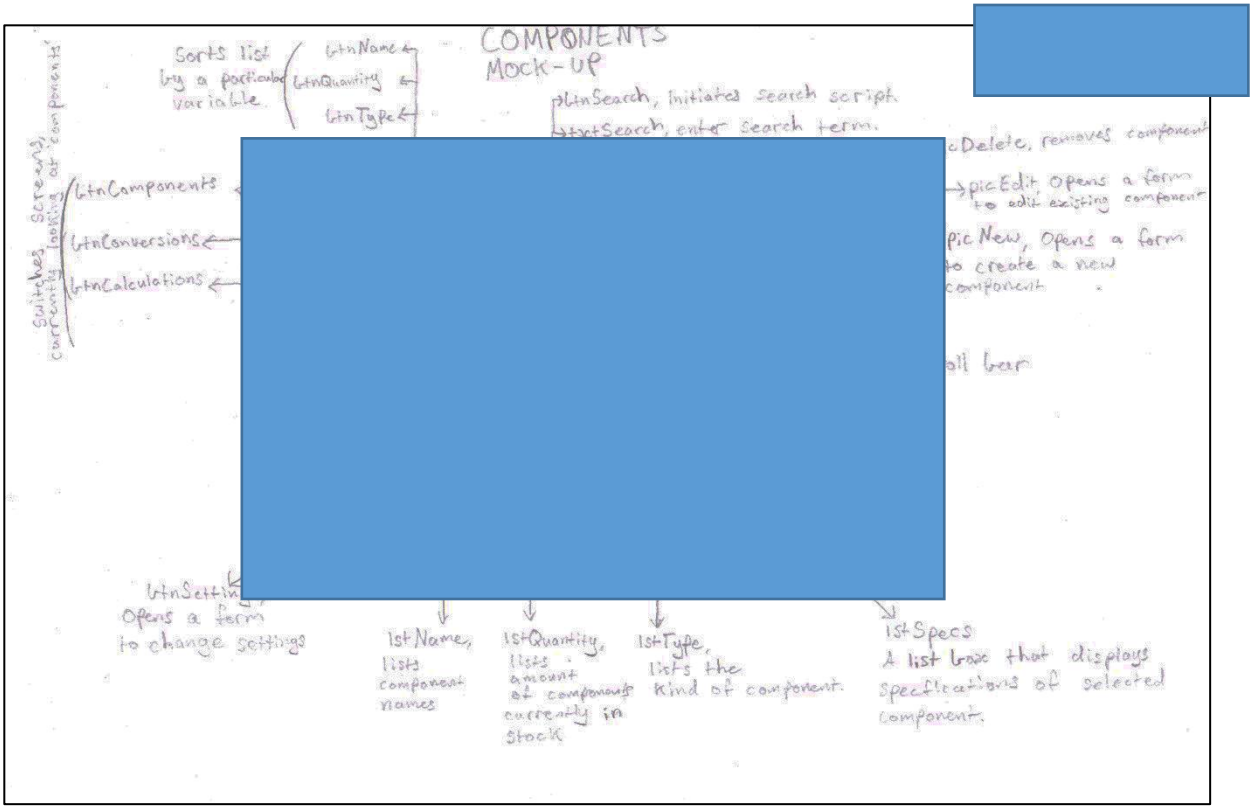
Design One

Description

Design one provides all the required functions on a minimal amount of forms in order to make scaling to other device types easier. sections can be accessed by clicking on one of the three buttons to the left. The right hand side of the form then shows the controls necessary for that section. The Components section is shown below.

Interface Mock-Up of Components Screen



Pseudocode for Component Searching

```
0.  BEGIN (search button is pressed)
1.  Clear lstName
2.  Clear btnQuantity
3.  Clear lstType
4.  searchTerm ← txtSearch
5.  searchExpression ← "*" & searchTerm & "*"
6.  File ← Open DataBase.txt
7.  WHILE there are still unread lines in File
8.       Line ← read line from File
9.       IF searchExpression finds a Regex match in Line THEN
10.           Split Line into sub-parts, separated by commas
11.           Display 1st sub-part in lstName
12.           Display sub-part in lstQuantity
13.           Display sub-part in lstType
14.      END IF
15. NEXT
16. IF No components were displayed THEN
17.      Message the user "No items were found that match your search term"
18. ENF IF
19. END
```

Object Descriptions Relevant to Components Screen

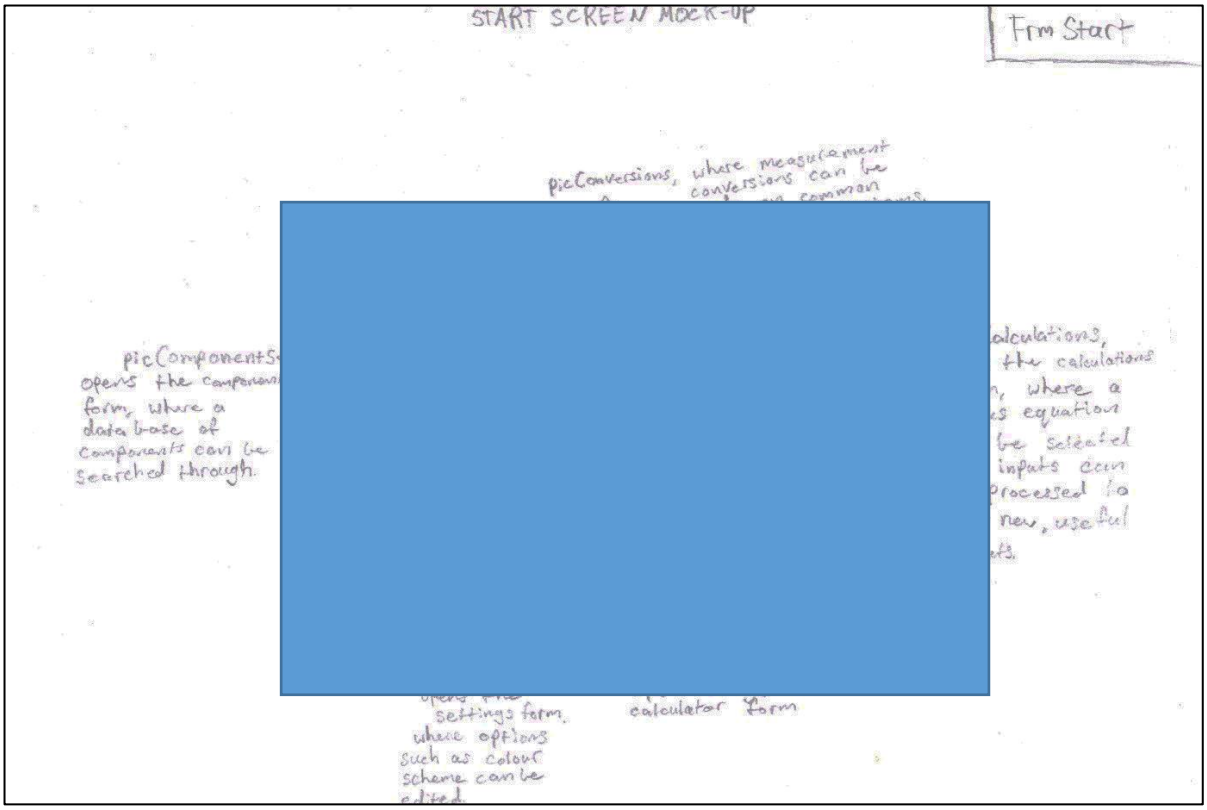
Name	Type	Description
lstName	List box	Back Colour = control, Border Style = None. This is a list of all the components' names. It will be placed next to lstQuantity and lstType to make them look like a table.
lstQuantity	List Box	[redacted]
lstType	List Box	
btnName	Button	
btnQuantity	Button	
btnType	Button	
txtSearch	Text Box	
btnSearch	Button	
lstSpecs	List Box	
[redacted]	[redacted]	
picEdit	Picture Box	
picNew	Picture Box	

Design Two

Description

Design two shows a start screen with options to open separate forms for [redacted] A settings form and a normal calculator are also shown on the start screen. Design 2's strength is in its ability to have multiple forms open at one, this allows users to be extremely efficient when using the software. It does however, make it difficult to use on a tablet device, where touch would be the main input method, as controlling the location of several windows using touch can be very tedious.

Interface Mock-Up of Home Screen



Pseudocode for Switching Screens

```
 0. BEGIN
 1.
 2. IF picComponents is clicked
 3. Open frmComponents form
 4. END IF
 5.
 6. IF picConversions is clicked
 7. Open frmConversions form
 8. END IF
 9.
10. IF picCalculations is clicked
11. Open frmCalculations form
12. END IF
13.
14. IF picSettings is clicked
15. Open frmSettings form
16. END IF
17.
18. IF picCalculator is clicked
19. Open frmCalculator form
20. END IF
21.
22. END
```

Object Descriptions Relevant to Home Screen

Name	Type	Description
picComponents	Picture Box	Image = motor.png, Size Mode = Zoom, clicking this picture box will open a form that allows users to search through a database of components and their specifications.
picConversions	Picture Box	[redacted]
picCalculations	Picture Box	
picSettings	Picture Box	
picCalculator	Picture Box	

Evaluation (Marked with scores from 0 to 5, with 5 being best and 0 worst)

	Criteria	Design One	Design Two
1	**Time** - Is it faster [redacted]	[redacted]	[redacted]
2	**Cost/Maintainability** - Can the software [redacted]	5	5
3	**Effort** – Is it easier to use this software [redacted]	4	5
4	**Readability/Clarity/Communication of message** - Can everyone clearly read [redacted]	5	5
5	**Speed of processing/Response Rates** - Can simple calculations [redacted] solved within half a second? (only applicable to functional product, not design)	Can't be determined from design.	
6	**Speed of Processing/Response Rates** -	Can't be determined from design.	
7	**Speed of Processing/Usability** – Can users utilize any function provided by the software with a minimal amount of clicks?	5	4
8	**Attractiveness** - [redacted]	5	5
9	**Portability** – Will the software scale [redacted]	5	3
10	**Accuracy** - Are outputs always correct? (only applicable to functional product, not design)	Can't be determined from design.	
11	**Accuracy/Robustness** - Are inputs validated?	5	5

12	**Robustness/Completeness (functional requirement)** - When the software runs into an error, are useful error messages provided?	**5**	**5**
13	**Accessibility/Usability** - [redacted]	**4**	**5**
14	**Timeliness/Relevance** - Are the included database components currently relevant to FRC?	**5**	**5**
15	**Relevance** - Are only functions relevant to [redacted]	**4**	**5**
16	**Completeness (functional requirement)** - [redacted]	**5**	**5**
17	**Completeness (functional requirement)** - [redacted]	**5**	**5**
18	**Timeliness/Completeness (functional requirement)** - [redacted]	**5**	**5**
19	**Completeness (functional requirement)** - Can a range of both [redacted]	**5**	**5**
20	**Completeness (functional requirement)** - Can measurements be placed into physics equations in order to output a new useful measurement?	**5**	**5**
	Total out of 100:	**80**	**82**

Chosen Design

From the evaluation, it is clear that both designs meet the criteria [redacted]

Design two is the preferable choice due to that fact that it better fulfils the main objective of making the [redacted] more efficient. [redacted] This improves the overall efficiency and usability of the product.

Design two also features an ordinary calculator which assists