Criteria 6 justification

Removals:

Option to change text colour within the class  
Option to change cell colour within the class

These two functions were deemed impossible to achieve within the time period given, if at all. As they were not a necessary requirement, I decided to axe them and focus on more important function requirements

Option to create custom themes and a themeSettings.csv file

With the little time available and the low importance of this non functional requirement I decided to axe it, however I still implemented the ability to select a different theme from ones provided so that it would fit half the requirement

Additions:

Tab control – to fulfill the requirement of having the ability to easily change classes I decided to put the datagrid within a tab control allowing the user to quickly and easily change classes when needed

These forms were originally meant to function through the use of pop up dialog and message boxes but after starting development putting them all on separate forms seemed like a good way to improve usability and make it easier to develop at the same time, with time being a massive constraint to this solution changes that reduced the time needed to complete the program were greatly valued:

Frmnew – functions same as intended with the only change being the rich text box where the user inputs columns for their class being filled with a dummy example by default

Frmthemes – not sure why I included 20 different themes that are all awful but they are there. Will probably improve their aesthetics later

Frmsort – the one incomplete (not counting removed) function within the solution. At least 5 workarounds were done attempting to solve this problem but none of them worked as intended due to the nature of the datagridviews used. When sorting a class created using the new form it sorts great but once a class is imported the issues begin. Since datagrids create string columns by default when the user imports a form all columns are strings meaning when sorted they are treated as so (this means it only looks at the first value so 9 is treated higher than 22 since 9 is bigger than 2). I have tried checking all columns for integers and then converting that column to an integer column and whereas the column creation worked, sorting it after did not.

Currently the function:

* Works with classes created with frmnew
* Works with string columns created with import feature
* Does not work with integer columns in an imported class (treats them as a string)

In the context of the solution, it works with 10-99 but fails with single integers and 100

Below are some of the failed attempts at sorting before I settled for what is there now

A screenshot of a computer program

Description automatically generated with medium confidence

A screen shot of a computer program

Description automatically generated with low confidence

A screenshot of a computer program

Description automatically generated with medium confidence

A picture containing text, screenshot, software, multimedia software

Description automatically generatedA screen shot of a computer code

Description automatically generated with low confidence

All of these functions worked somewhat but failed execution. If time allows might try 1 final attempt by creating integer columns upon importing a file instead of replacing the columns once a class has been imported; this was never done to the sheer difficulty it imposed

These forms were originally meant to be displayed through objects on the main form however once I started working on the UI it became clear it would be too cluttered to have everything on one form so I created new each complete with their own UI to complete the required functionality:

Frmsearch – relatively the same in functionality ; easier to read and use now that it is in a different form and with the addition of a rich text box that displays the search results that were originally intended to be displayed within a message box

Frmstats – after consideration I decided that only 3 statistics (being mean median and mode) were not enough so i decided to include a few more statistics that may benefit the user (being range, count, IQR, Q1 and Q3). These are displayed within a rich text box instead of a list box as was intended due to the rich text box being easier to read

Additions to the main form:

Function to delete columns – not sure why something this obvious wasn’t included in the original design but functions using the same comb box that one uses to select their column, and an extra button that allows them to delete it

Save function – also not sure why this wasn’t included in the original design but there is now a function that appends to an xml file instead of creating one

Frm login was the only form to stick to their original design and functionality

Modifications:

All of the variable names were changed to make them easier to work with, changing from Hungarian camel case

When creating the data dictionaries and object descriptions I did not expect how much more complicated creating the actual solution would be. As a result most of the variables have been changed completely or removed, and a very large amount of new ones being created   
This similarity happened with the object description, a majority of objects being changed or removed  
despite all these changes the final product still looks very similar and functions as the original design described

With the pseudocode provided earlier the biggest changes amongst them were the saving and opening functions. Both functions required to build or construct the xml file from scratch instead of what was previously intended – using a built-in function. It was previously possible due to the idea that only one datagrid was going to be used but since a tab control was introduced, I had to redo the functions to suit

Overall the solution meets pretty much all the requirements stated, with [EC04 (FR04) Data inputted into class parameters can be sorted and searched] being the only one not fully complete up to a decent standard and EC09 [(NFR03) The software can run-on low-end devices without using more than 30% CPU] being N/A due to my inability to test this currently

In future development these contingencies may occur some of which I have taken into account while developing

* Incompatibility with different devices; the solution has not been tested on any devices aside from a windows pc
* Incompatibility with older window versions; solution was only tested on windows 10
* Unforeseen events causing performance issues or even fatal errors
* Corruption and security of text/xml files – files used within the solution are unencrypted and stored within the documents folder without a proper backup
* Build-up of non-fatal errors over a long period of time leading to poor performance or crashing
* Device specific problems – permissions or specifications
* Third party software conflicts – solution may clash with other third party software on the users device
* Hardware issues – possibility of malfunctioning hardware components could lead to poor performance or crashing
* Possibility of client requesting new functionality within the solution requiring major changes to the code
* Syncing across devices and encryption
* Multi-language support – if a need to support multiple languages arises language specific issues such as translation may occur

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