Task assignment

Viewer data files from power quality analyzers

Create a **Windows application in C #** which will allow the display of selected variables and events from a text file, exported from the power quality analyzer.

Input: Text files with data from the analyzer. The file contains data blocks separated by labels:

• [HEADER] - contains information identifying the measurement. Header format is simple, each line is a pair of name - value. No value is required in this case is given only the name of the item, its value is empty.

• [QUALITY] - Contains data of electricity quality. Each row is a record, measured at a particular time. It contains the values of the variables. The first line of block is a column header. Columns can appear in any order, it is always necessary to respect the header.

• [EVENTS] - contains records of events. The first line is a header, the order and number of columns in the block events is fixed.

• [RECORDER] - contains the data stored in the device recorder. For this task this block is irrelevant and can be ignored.

A detailed assignment

Create a Windows application in the .NET environment, using C # programming language, which will serve as a browser for these files. At beginning the user selects a specific file with the data of quality (.CSV) and the application displays them in an easy to use interface. Applications will include the following options:

1. Open any data CSV file by means of a standard dialog for opening the file in Windows.

2. Application imports data from the header and displays them on one tab in the application window. Display headers will be done as a list with two columns, using components ListView.

3. Application imports data from a block of KVALITA and displays it on the second tab as a table, with the help of components DataGridView. Below this table will be displayed a simple evaluation, including start and end dates of data samples and maximum and minimum values U, I, for each phase.

Performance requirements:

Design of application should meet the current standards for creating applications for Windows. For error handling, use the system of exceptions. Design the code for the data import and calculating the evaluation as a separate class whose instance the application will use.

When reading data from a block QUALITY keep on mind:

• The order of the columns is not fixed, the position of a particular column header specifies the data. The header is always the first line of the block of the quality data immediately followed by the lines with data.

• The number of columns is very large, for this task is sufficient import only U and I values.

• If the values are measured separately for each phase, then it comprises identification of the phases L1, L2, L3 in a title. This means that the application will display e.g. values UL1, UL2, and UL3. By analogy with other variables.

• Block of the quality data must not contain any blank lines. If encounter a blank line during the processing, it means the end of the block.

When solving the task, please try to maintain control standards, used in Windows applications - use menus, toolbar, standard dialogs. When you resize the window, the used components should appropriately adjust their size. Appearances of application propose individually.

Attachments

A sample files with the exported data from the power quality analyzer.