**Innovative Teaching Approaches
in development of Software Designed
Instrumentation and its application
in real-time systems**

Itasdi

The Advanced Applications of LabVIEW
Lecture 6-7: The User Interface

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Erasmus+ Programme
of the European Union

The goal of this course

The aim of this course is to deepen the students knowledge of advanced topics in LabVIEW, which are required for CLD exam (Certified LabVIEW Developer).

Topics

1. The user interface
2. Block Diagram Layout and Style
3. Programming Practices, SubVI Design Practices
4. The design patters
5. Timing
6. Error Handling, Documentation

The books

- "Effective LabVIEW Programming" Thomas J.Bress, National Technology and Science Press 2013.
- "LabVIEW Core 3 Course Manual"

The completing conditions

- The condition for passing the subject is an attendance on laboratory.
- The final mark will be:
  1. 3.0 - when student was present on 8/10 laboratories.
  2. 3.5 - when student was present on 9/10 laboratories.
  3. 4.0 - when student was present on 9/10 laboratories and fill the exercise in moodle platform (address here).
  4. 4.5 - when student finishes the project on the last laboratory with mark more than 50%.
  5. 5.0 - when student finishes the project on the last laboratory with mark equal or more than 70%.

General tips

- Created user interface should be intuitive and aesthetic for the user.
- All the logical connected controls or indicators should be grouped in arrays or clusters.
- The border of cluster can be transparent so that the user doesn't know that elements are grouped.

Make the exercise 1.1 to practice removing border of clusters.

General tips

- Remember to change the properties of elements using the Property Nodes such as color, visibility, position etc.
- Sometimes the GUI is not aesthetic. You can change it by customizing the controls.

Make the exercise 1.3 to practice customizing the controls.

General tips

- Before running the application, all elements should be reinitialized to default values.
- Remember to make all necessary actions to inform the user what is happening. For this you can use i.e. dialog boxes.
- When the application is busy due to calculation or reading/writing data from/to file you can show this behavior by changing the cursor to hourglass.

Make the exercise 1.2 to practice customizing the cursor.

General tips

- The application is much more professional when the menu is fit to user needs. You can easily customize the run-time menu.
- Additionally you can remove the vertical and horizontal scrollbar and center the windows.
- Remember to set the window size to fit different monitor resolutions.

Make the exercise 1.4-1.5 to practice customizing the menus and removing the scrollbars.
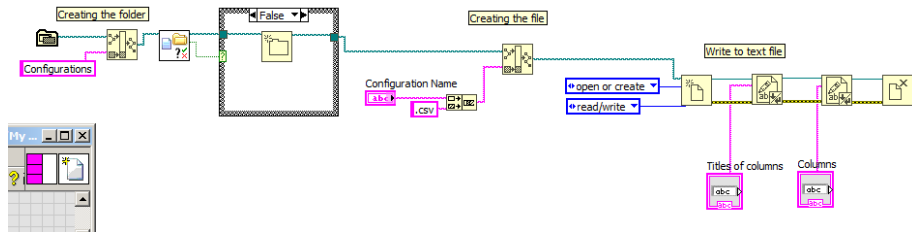
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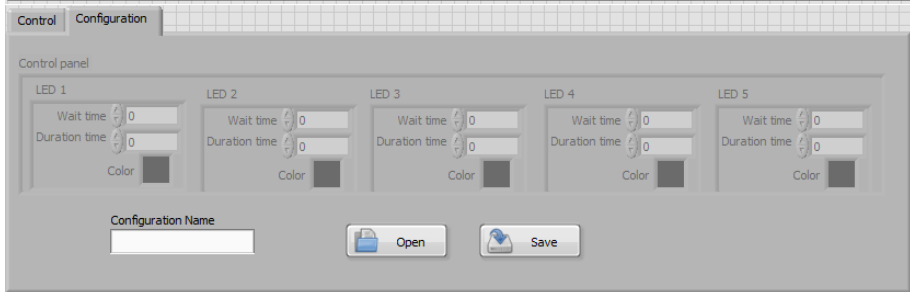
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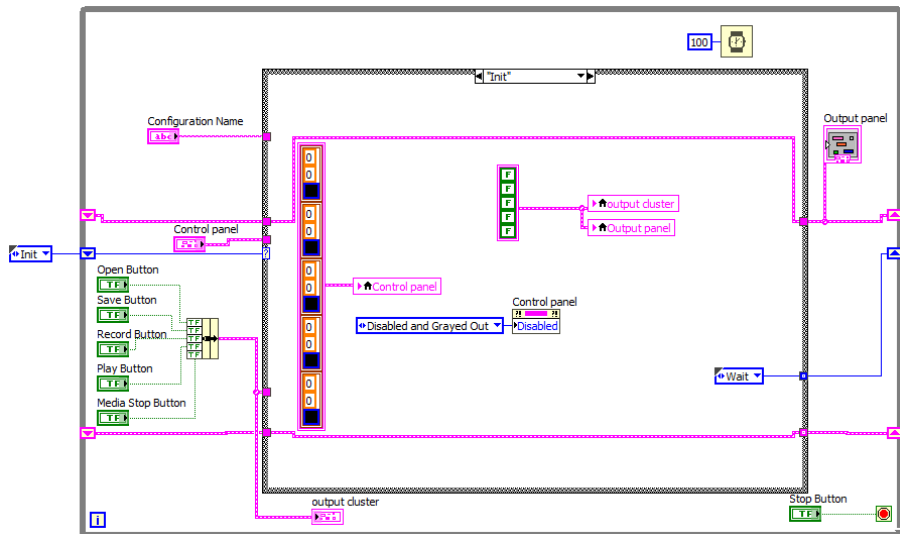
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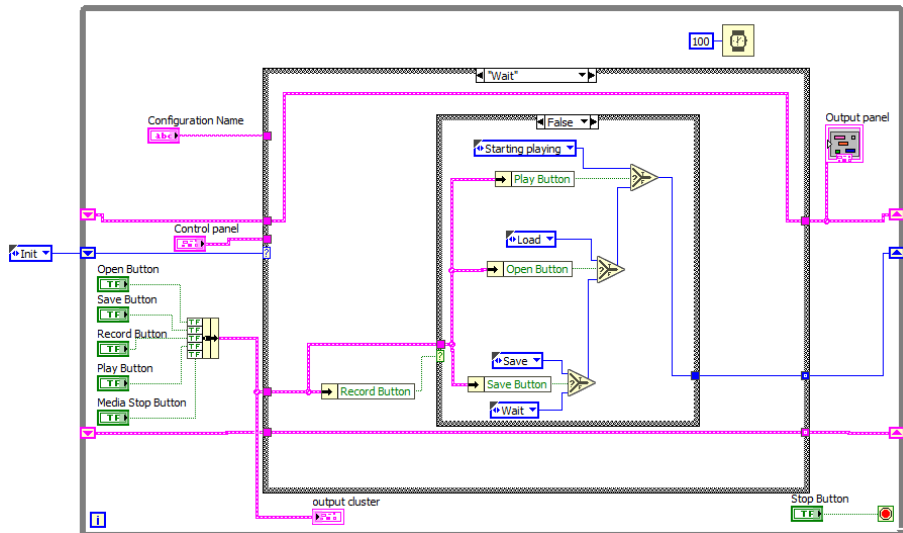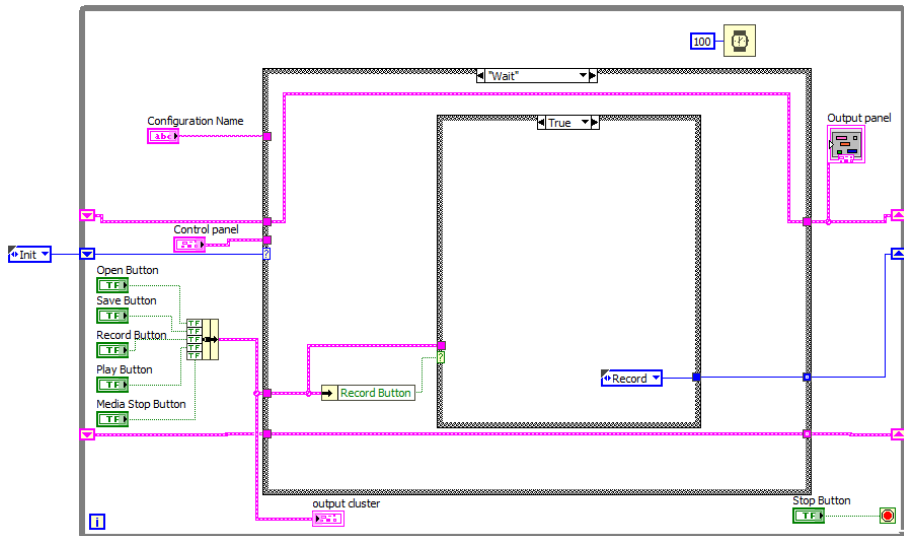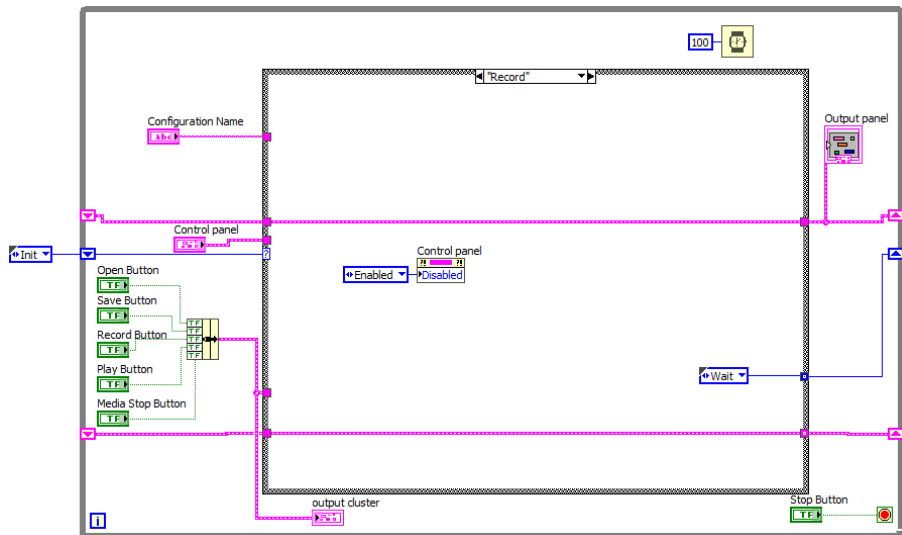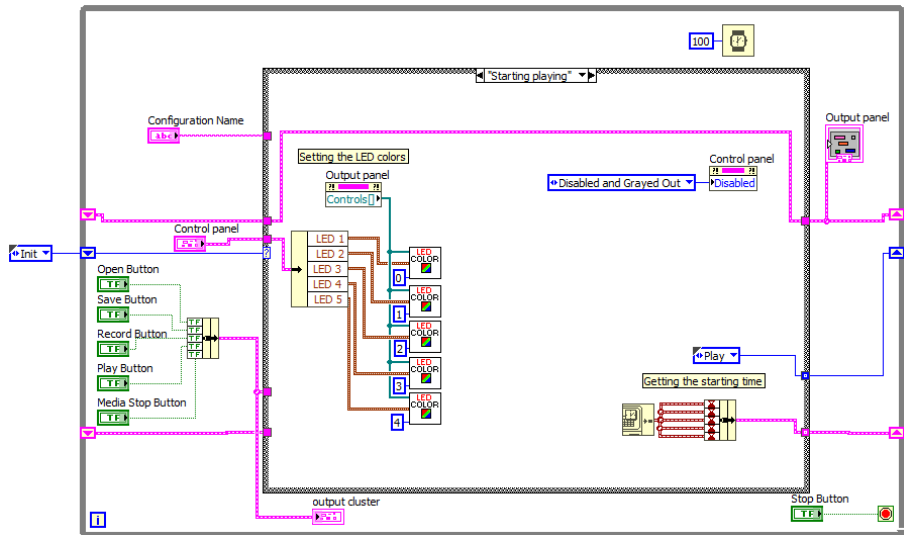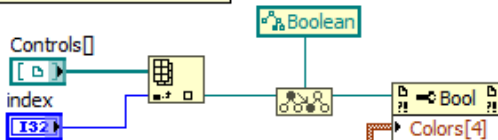
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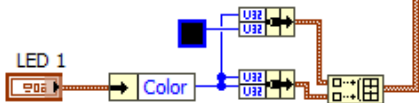
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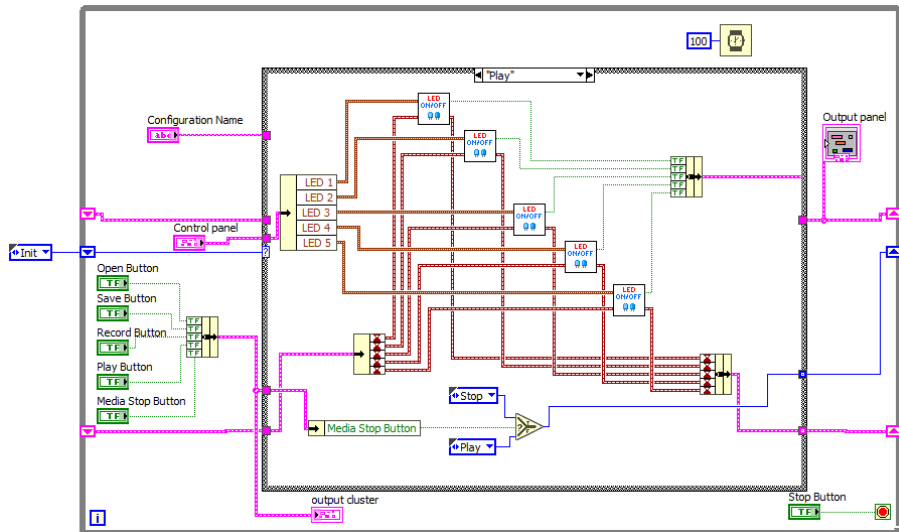
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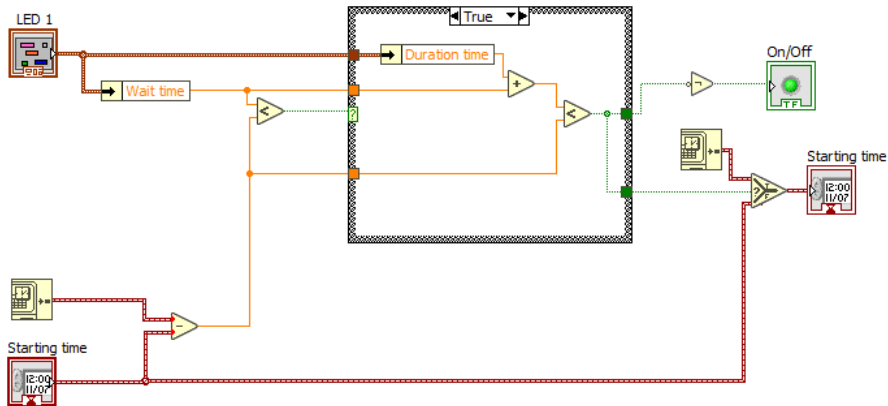
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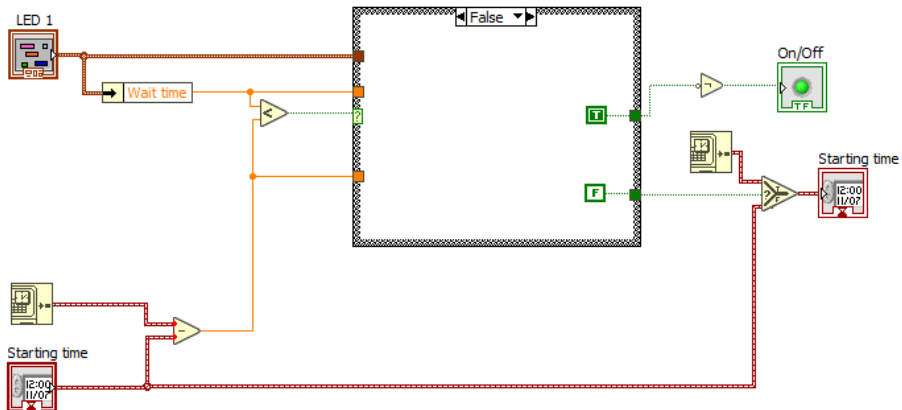
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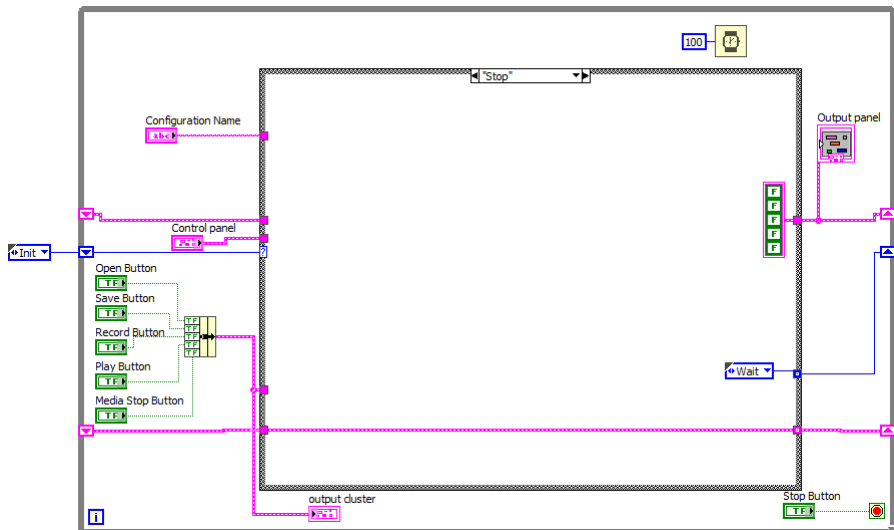
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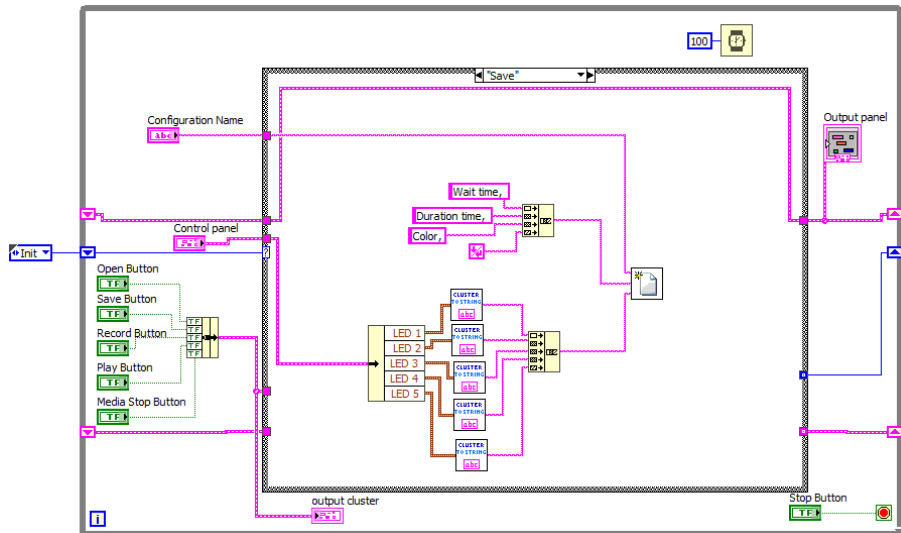
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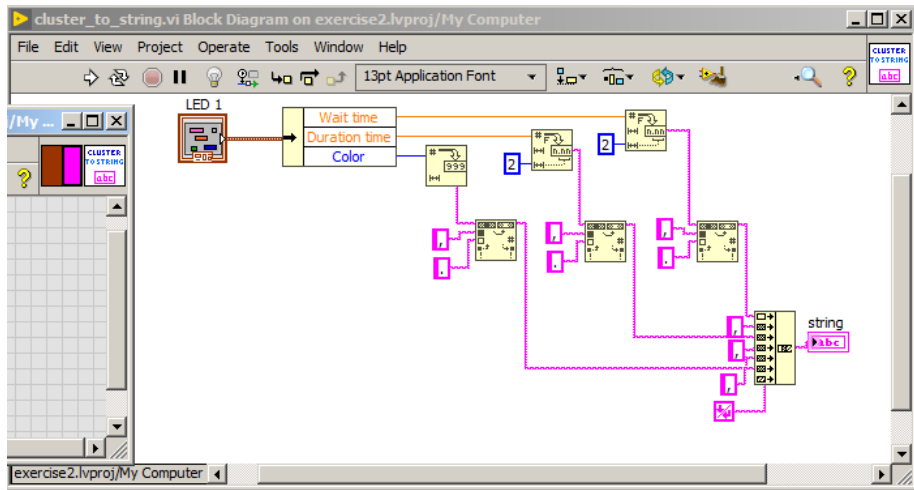
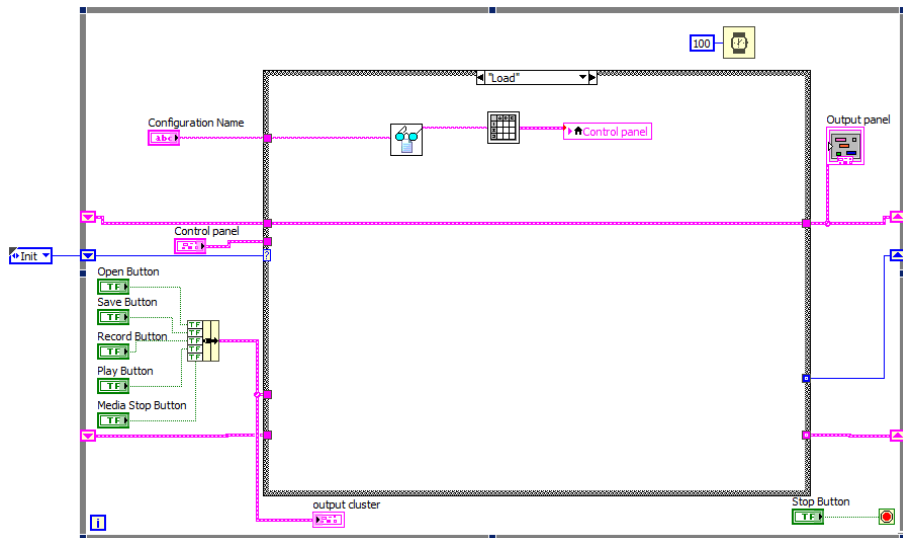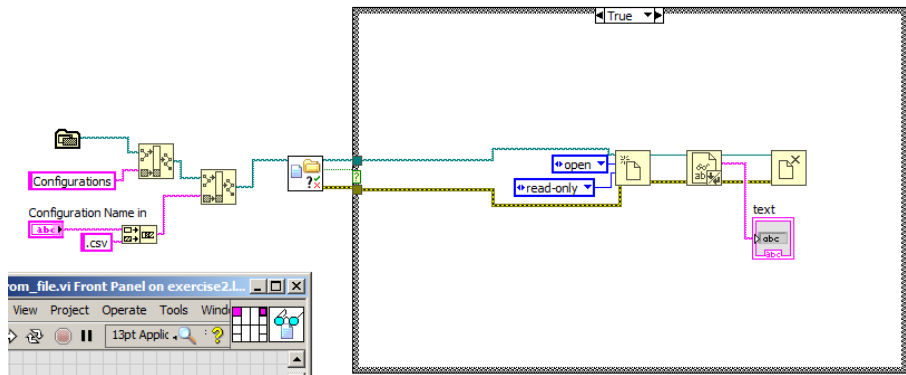# Solution
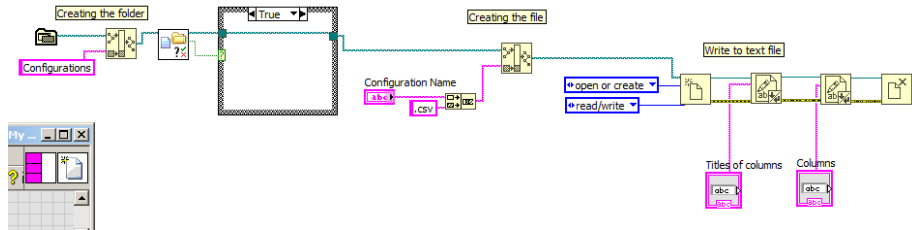
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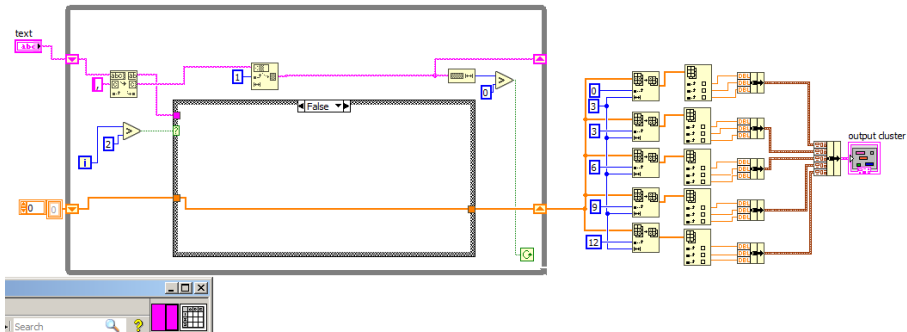# Solution

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Thank you for attention!

Lecture was prepared based on materials from: "LabVIEW Core 3 Course Manual".