PG5 Starter Training

File system application

Daniel Ernst | EN02 | 2012-02-26

File system application
Introduction

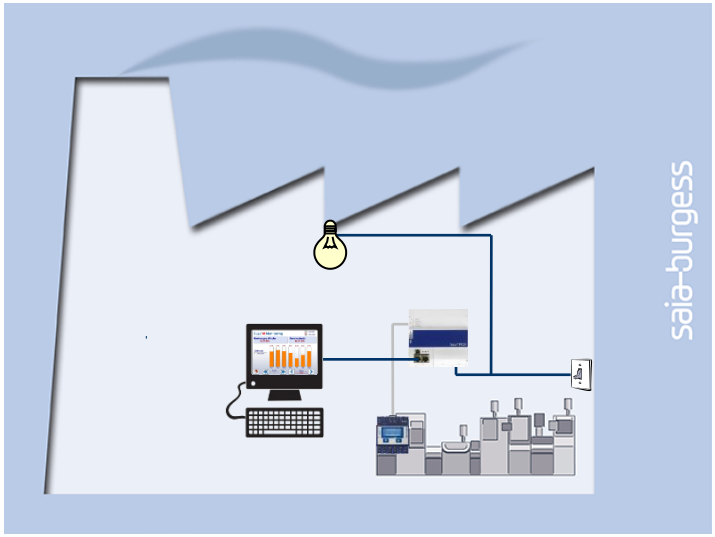
Material required
- Notebook or computer
- PCD1 E-Controller
- USB cable
- Training board
- Ethernet cable
- (Energy Meter starter box)

Software required
- PG5 Core at least Version 2.1.027
- Saia® WebEditor 5 (included in PG5 Core)
- Java at least Version XXX

Lessons required
- Lesson 1
- Lesson 2
- Lesson 3 PG5 Core
- Lesson 4 WebEditor
- (Energy Meter application)

Aims of the file system application
- Create a CSV file with Energy Meter data or other data
- Basic understanding of the file system function

File system application
Introduction

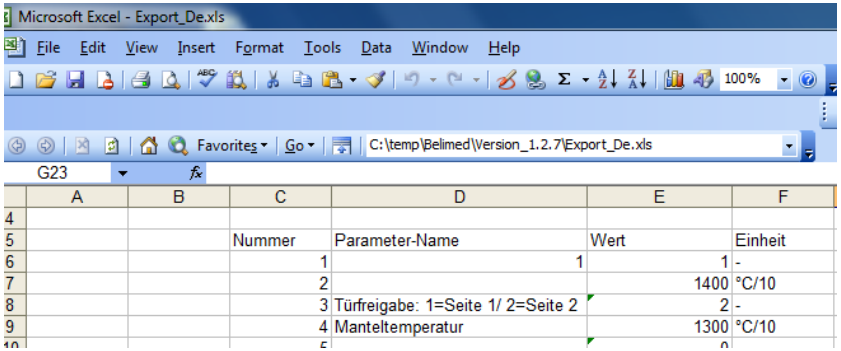


Explanation / Introduction

- The Energy Meter variable must be written to a file, so that the course of energy generated can be displayed visually.
  (If the Energy Meter application has not been completed, any variable can be written to the file instead.)

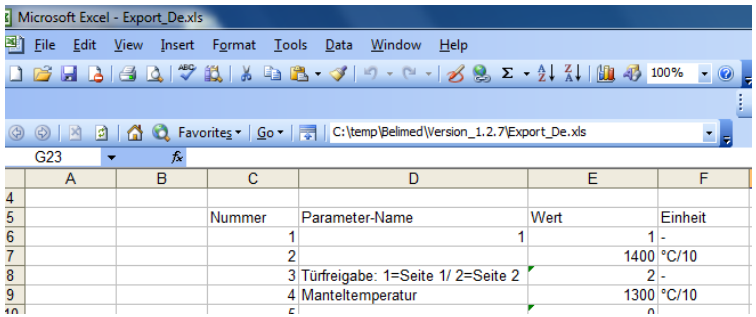
What is necessary to achieve this?

- Program produced in Lessons 3 and 4
- Ethernet connection to Saia® PCD1 E-Controller
- Monitor with web browser
- (Energy Meter starter box)
- (Program from Energy Meter application)



	A	B	C	D	E	F
4						
5			Nummer	Parameter-Name	Wert	Einheit
6			1	1	1	-
7			2		1400	°C/10
8			3	Türfreigabe: 1=Seite 1/ 2=Seite 2	2	-
9			4	Manteltemperatur	1300	°C/10

File system application
Introduction



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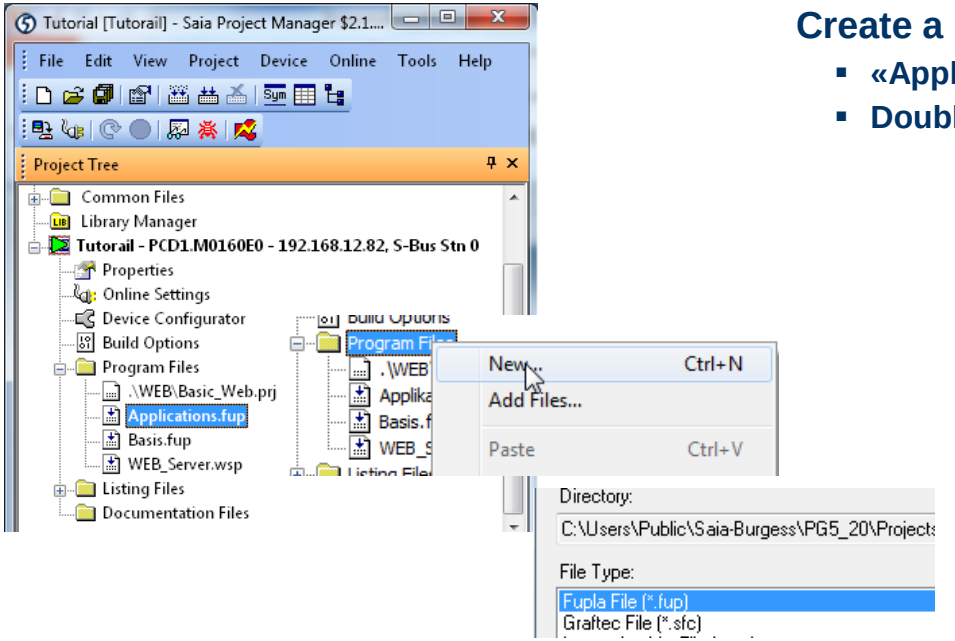
AutomationServer

- The PCD's integral AutomationServer includes, among other things, a file system with which the user can store files.
- With this feature the PCD can, for example, log stored data in a CSV file (Excel-compatible) and then access these CSV files from a PC using TCP/IP.
- As a result values can, for example, be saved cyclically in the PCD and displayed using MS tools, such as Excel

File system application

Project Manager



Create a new Fupla file

- «Applications.fup»
- Double click to open the file

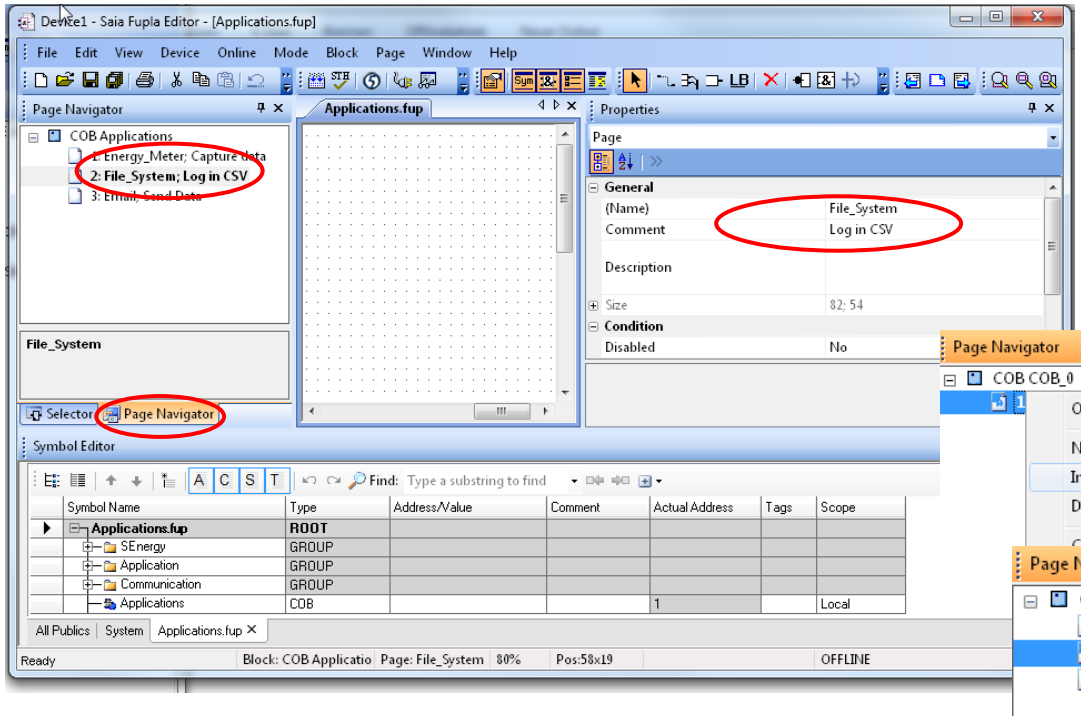
If this step has already been done in another application tutorial, it may be skipped.

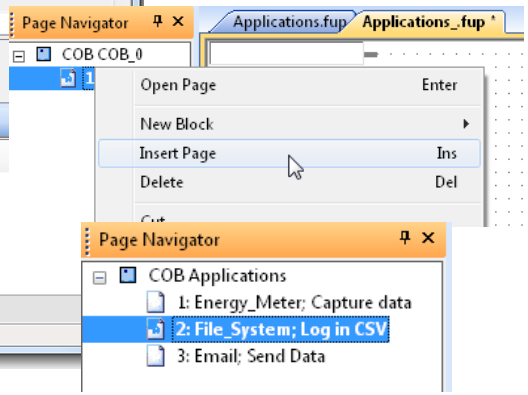
File system application

Project Manager

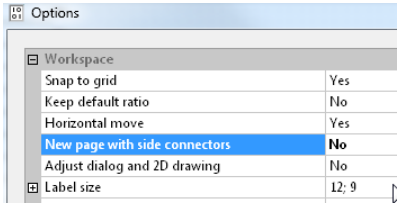
Create a new Fupla page

- Select tab «Page»
- Right click and select «Insert Page»
- Rename the page as File_System
- Enter comment «Log in CSV»

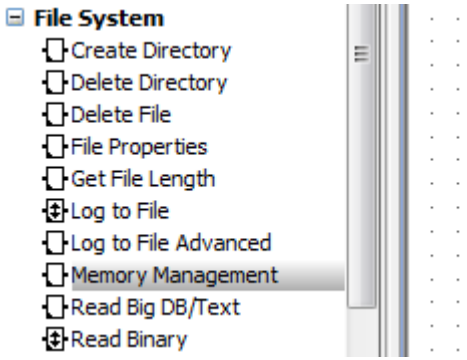


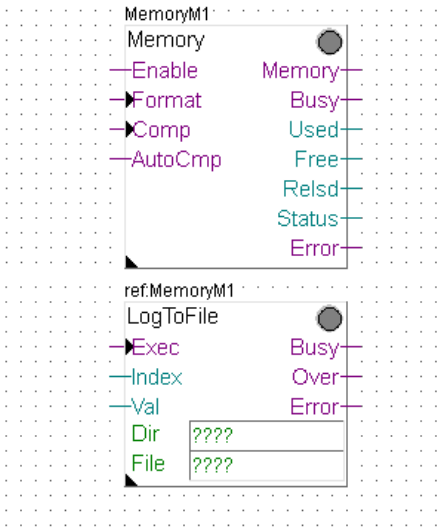


If you do not want connectors to be created automatically in a new Fupla page, this can be disabled with: View → Options → New page with side connectors = No



File system application
Program the file system





File system

- To save data to the file system, the file system must be initialized
- It may also be necessary to create the directory structure in the file system. Subsequently, PCD data can be stored in a file on the file system

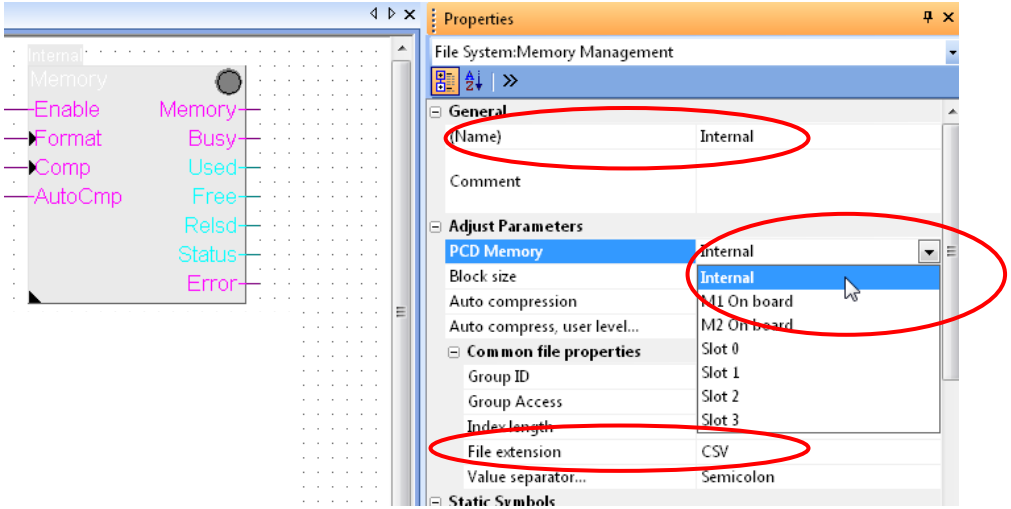
Set up file system FBoxes

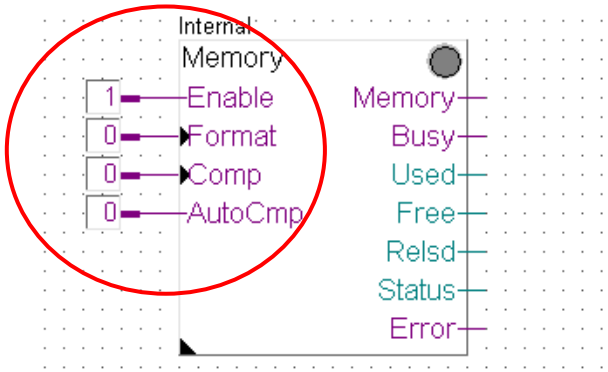
- Position the FBoxes: Memory Management and LogToFile
- Point search function in Navigator FBox
- Connect FBox inputs and outputs
- Connect a value that has been read by the Energy Meter

File system application
Program the file system

Set up initialization

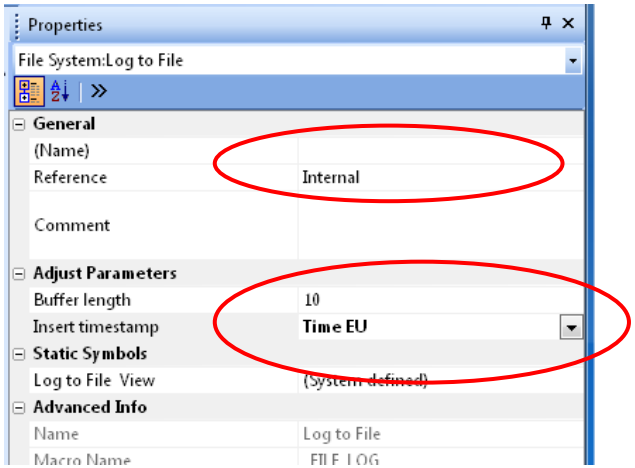
- In the FBox Memory options, select «Internal» (for internal memory)
- Rename FBox as «Internal»
- Select file extension «CSV»
- Connect FBox inputs (FBox Enable = 1)





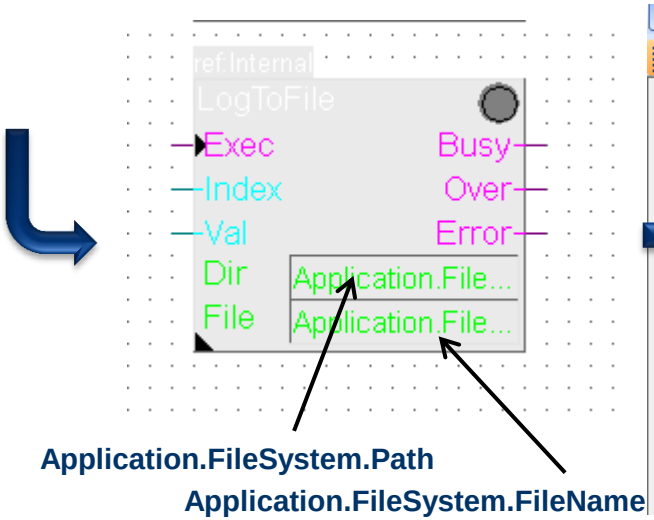
FBox inputs must always have a signal applied

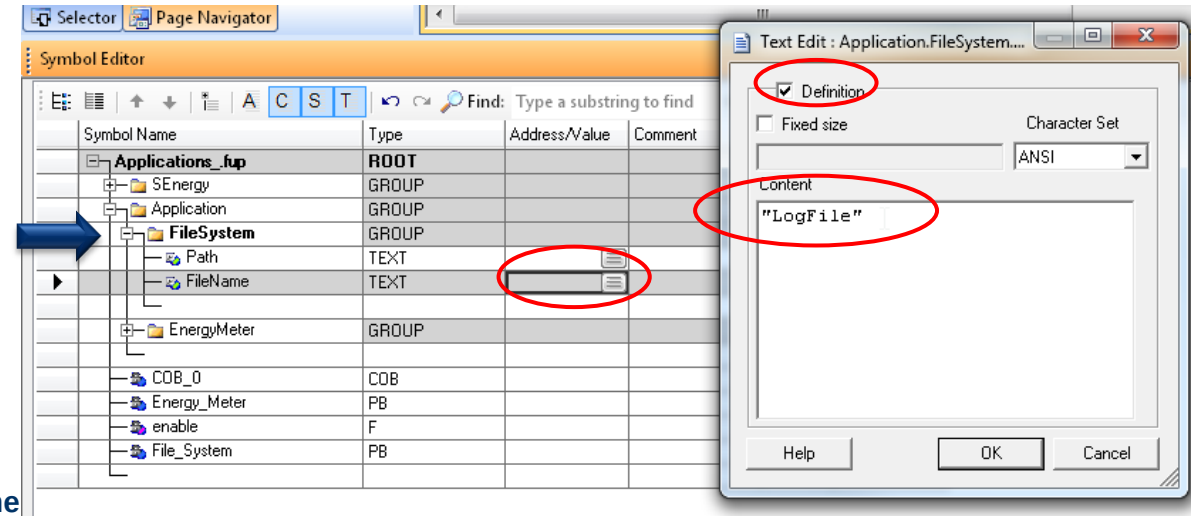
File system application
Program the file system



Configure the LogToFile FBox

- The LogToFile FBox writes data to the file
- Set Reference «Internal»
  This FBox must reference the Memory FBox name! (In this example: Internal)
- Set timestamp to EU time
- Enter symbol «Application.FileSystem.Path» in DIR field
- Enter symbol «Application.FileSystem.FileName» in File field
- Enter filename «LogFile» in symbol «FileName»



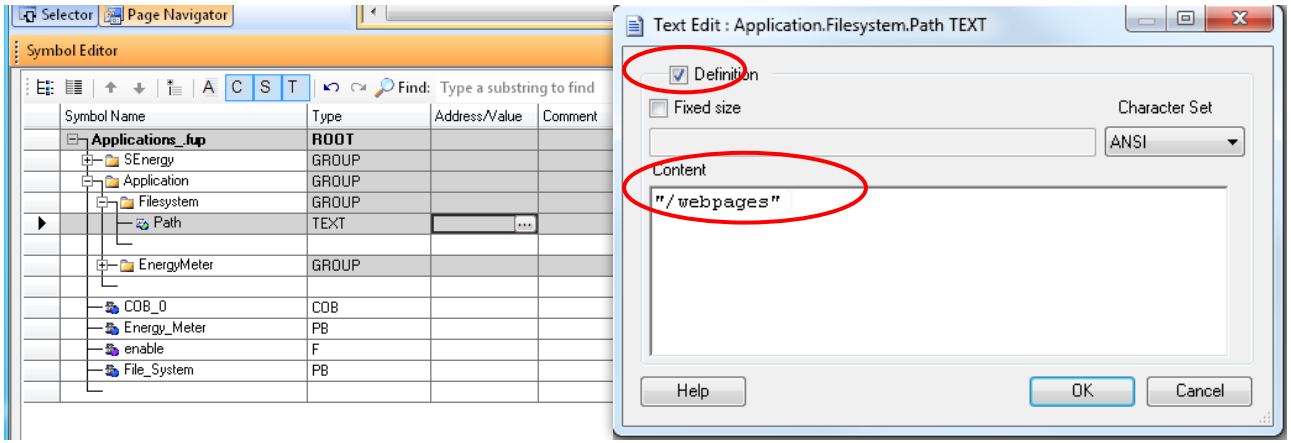


File system application

Program the file system

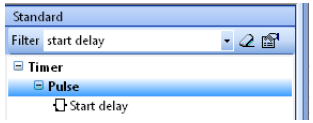
Configure the LogToFile FBox

- Enter path «/Webpages» in symbol created: «Application.FileSystem.Path»
- The path «/Webpages» is now created. It contains all web pages. It cannot therefore be created first.

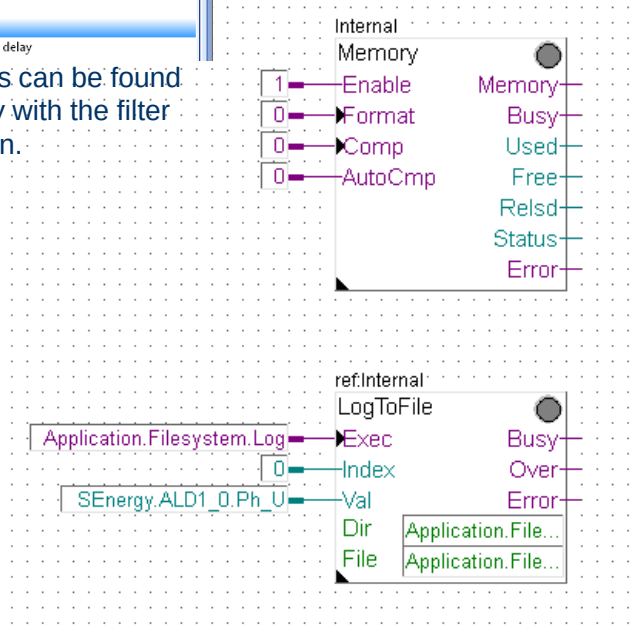


File system application

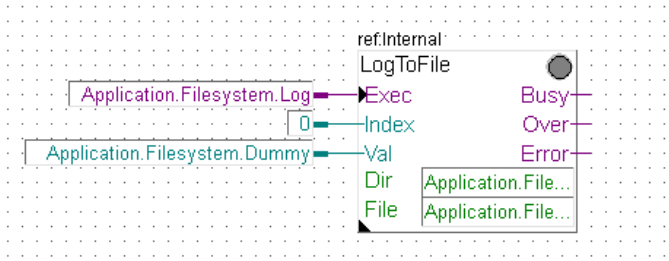
Activate file system FBoxes



FBoxes can be found directly with the filter function.



Energy Meter application found



Energy Meter application not found

Activation of FBoxes

- Define symbol «Application.FileSystem.Log» as a flag (F) to trigger the «Write» command
- The «Application.FileSystem.Log» symbol must be public, as it will be accessed later by the web project

If the «Energy Meter application» lesson has already been completed:

- Apply symbol «SEnergy.ALD1_0.Ph_U» to input «Val» → The content of this symbol (i.e. Voltage in this case) will be written to the file

If the «Energy Meter application» lesson has <u>not</u> yet been completed:

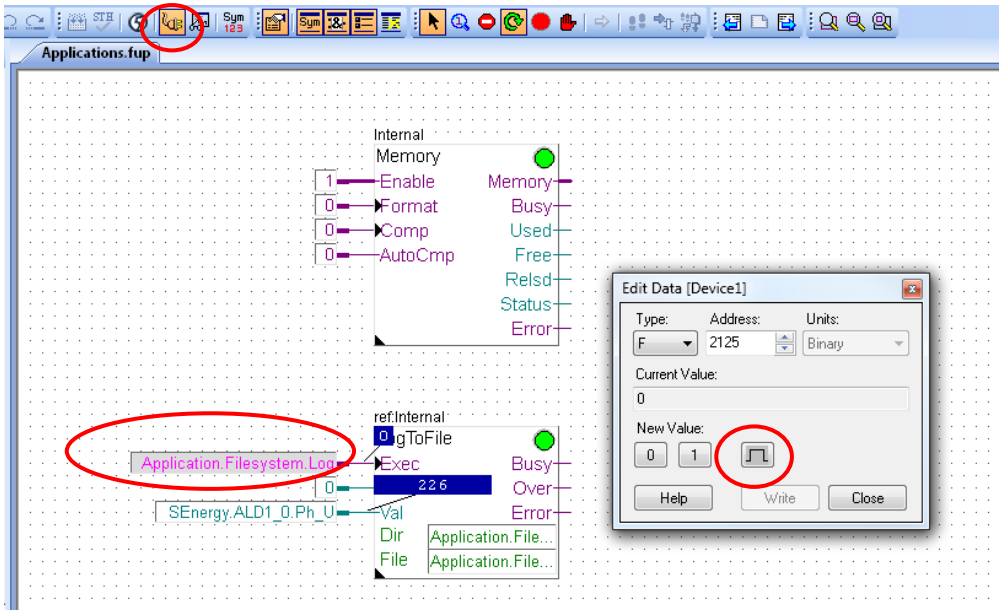
- Define symbol «Application.Filesystem.Dummy» as a register (R) → The content of this symbol will be written to the file

Compile and download project

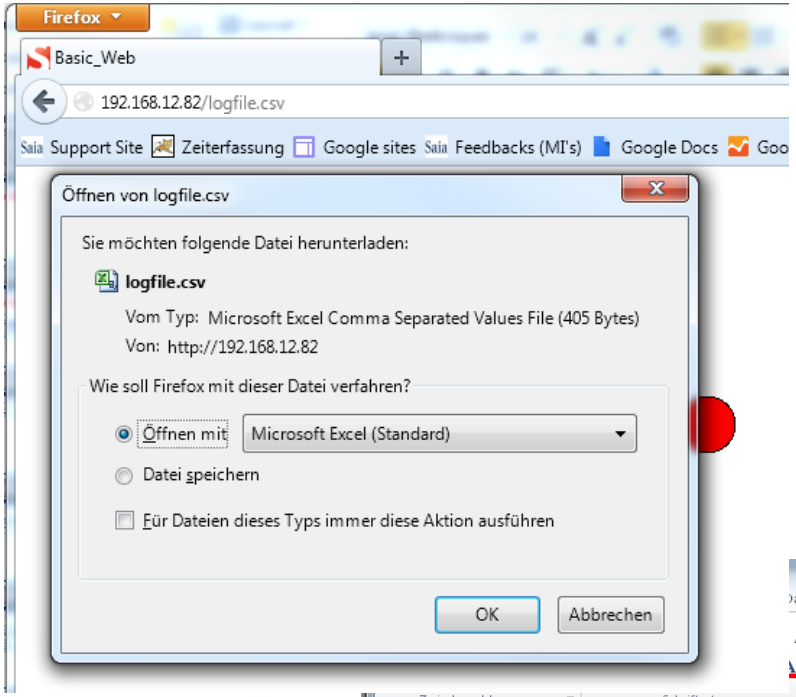
File system application
Compile and download project

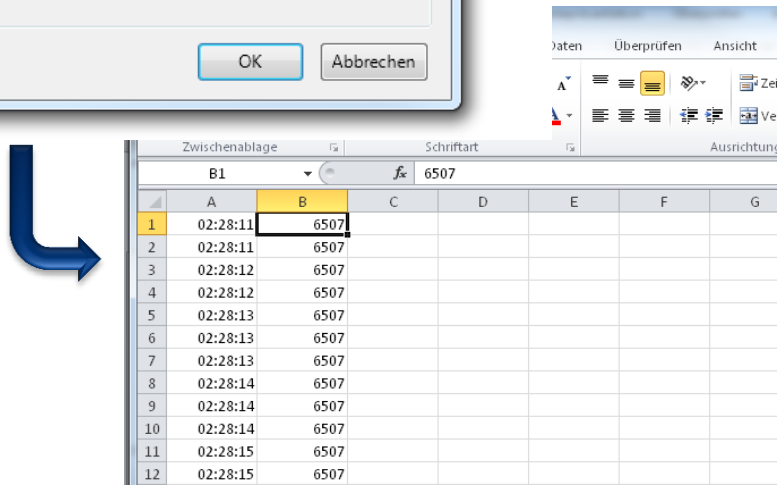
Generate first log entries

- Go online
- Use zoom to view value at «Value» input
- Double click on «Application.FileSystem.Log»
  - With the pulse symbol, a value can be written into the file. By repeatedly pressing, multiple values can be written.



File system application
Download CSV file





	A	B	C	D	E	F	G
1	02:28:11	6507					
2	02:28:11	6507					
3	02:28:12	6507					
4	02:28:12	6507					
5	02:28:13	6507					
6	02:28:13	6507					
7	02:28:13	6507					
8	02:28:14	6507					
9	02:28:14	6507					
10	02:28:14	6507					
11	02:28:15	6507					
12	02:28:15	6507					

Download csv file with browser

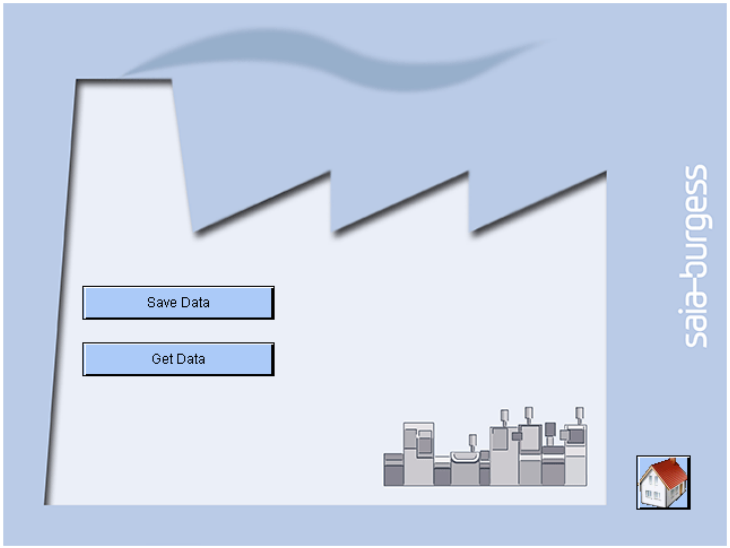
- Enter path in browser
  <IP Controller>/<Filename.csv>
- In this example:
  192.168.12.82/logfile.csv
- Save and open file
- For each pulse, the value at the «Val» input has been written to the file

File system application

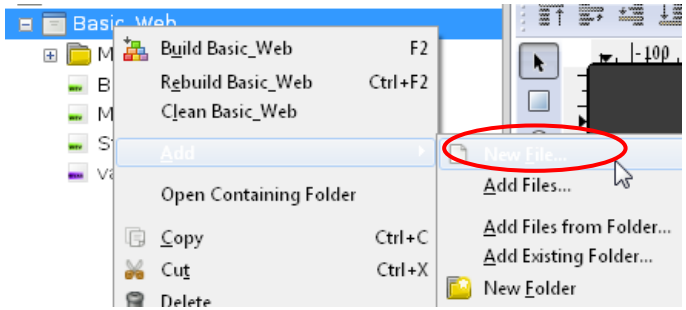
Create web project

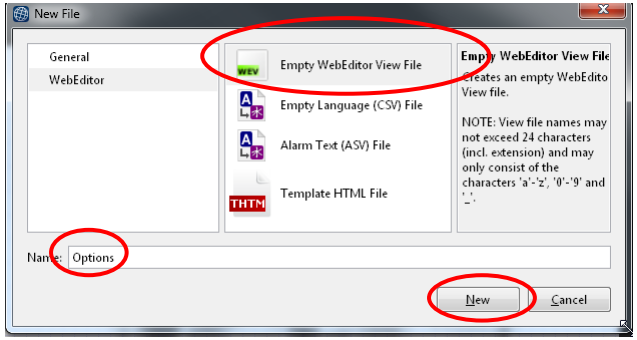
Writing a value to the file should be possible via the web interface

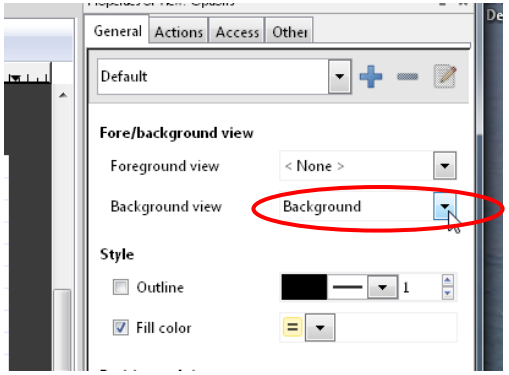
In addition, it must be possible to download the file in the browser



File system application
Create web project





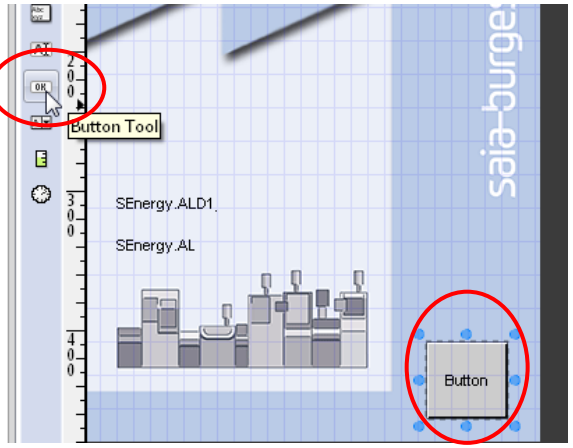


Open the old web project from lesson 4

Create a new page «Options»

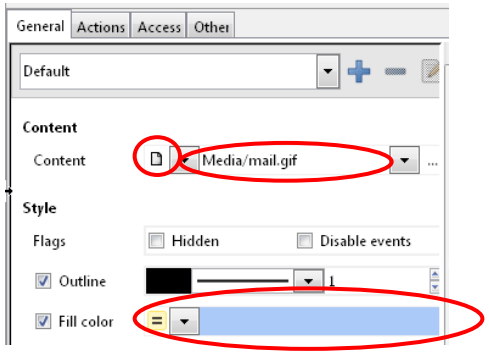
- Create new file: Options.wev
- Click on workspace to open Options
- Select background at «Background»

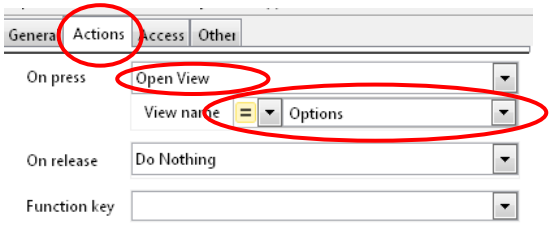
File system application
Create web project



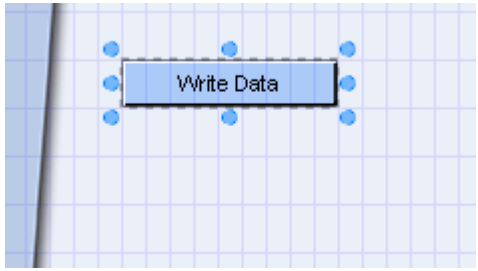
Set up jump to the new page

- Open the page Start.wev
- Place a button
- Click on the button to open options
- Select the General tab
  - At Content, select File and choose the file house_VGA.gif
  - Change the colour of the button
- Select the Actions tab
  - Change the condition «On press» → Open view
  - Select View (website) Options
- Now the new Options page will be called when the button is pressed



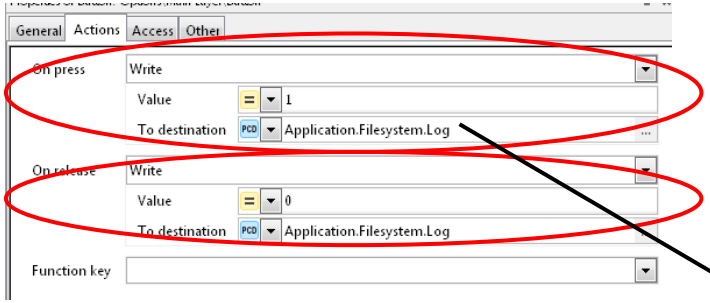


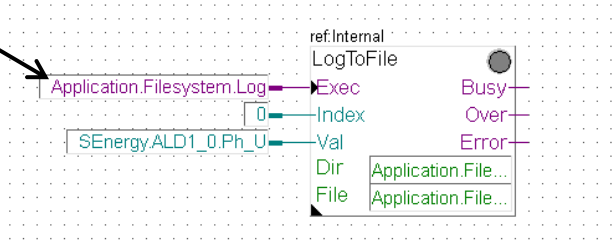
File system application
Create web project



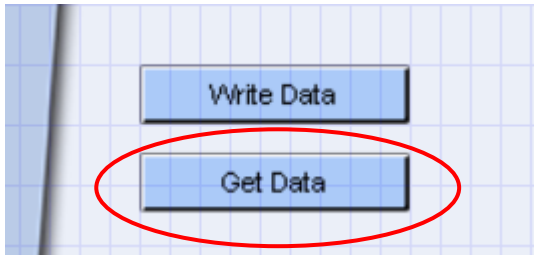
Write data at click of button

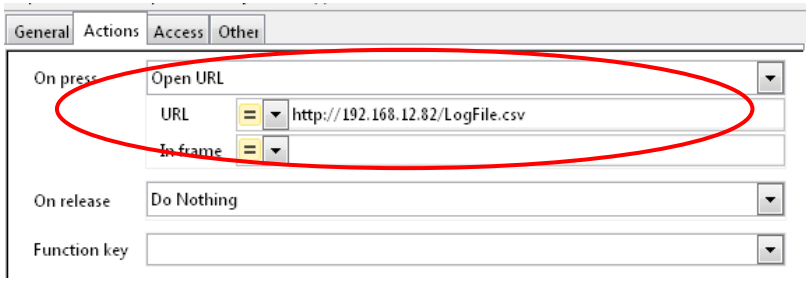
- Open the page Options.wev
- Insert a button and change its colour
- Rename button as «Write Data»
- Select function «On Press» → Write
  - Value = 1
  - To destination PCD Application.Filesystem.Log
- Select Log symbol (triggers writing of log data)
- Select function «On Release» → Write
  - Value = 1
  - To destination PCD Application.Filesystem.Log
- Click OK to close
- Clicking the mouse on the button will trigger a pulse at the «Log» flag and cause the current value to be written to the *.csv file





File system application
Create web project





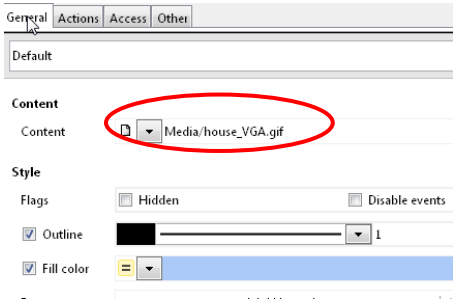
If the file is not stored in a subfolder of Webpages, its absolute path must be specified.
In this case, the absolute path is:
http://192.168.12.82/INTFLASH:/WEBPAGES/LogFile.csv

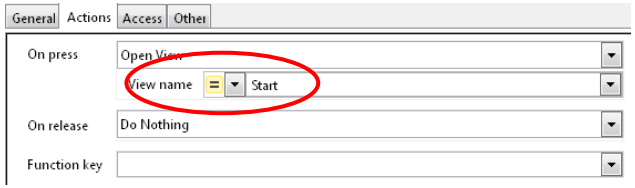
Load CSV file

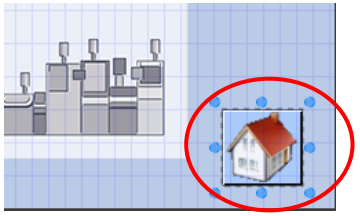
- Open the page Options.wev
- Insert a second button and change its colour
- Rename the button as «Get Data»
- Set up a URL jump to the file
  http://<IP Controller>/<Pfad innerhalb Webpages Ordner>/<Dateiname.csv>
  http://192.168.12.82/LogFile.csv
- Clicking the mouse on the button will download the data file LogFile.csv in the browser

Set up the jump back to the start page

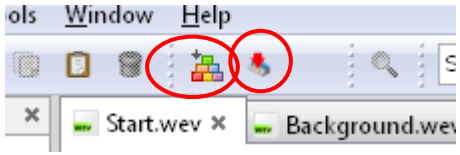
- Place a button and save the image house_VGA.gif onto it
- Set up an Open View to the page Start.wev



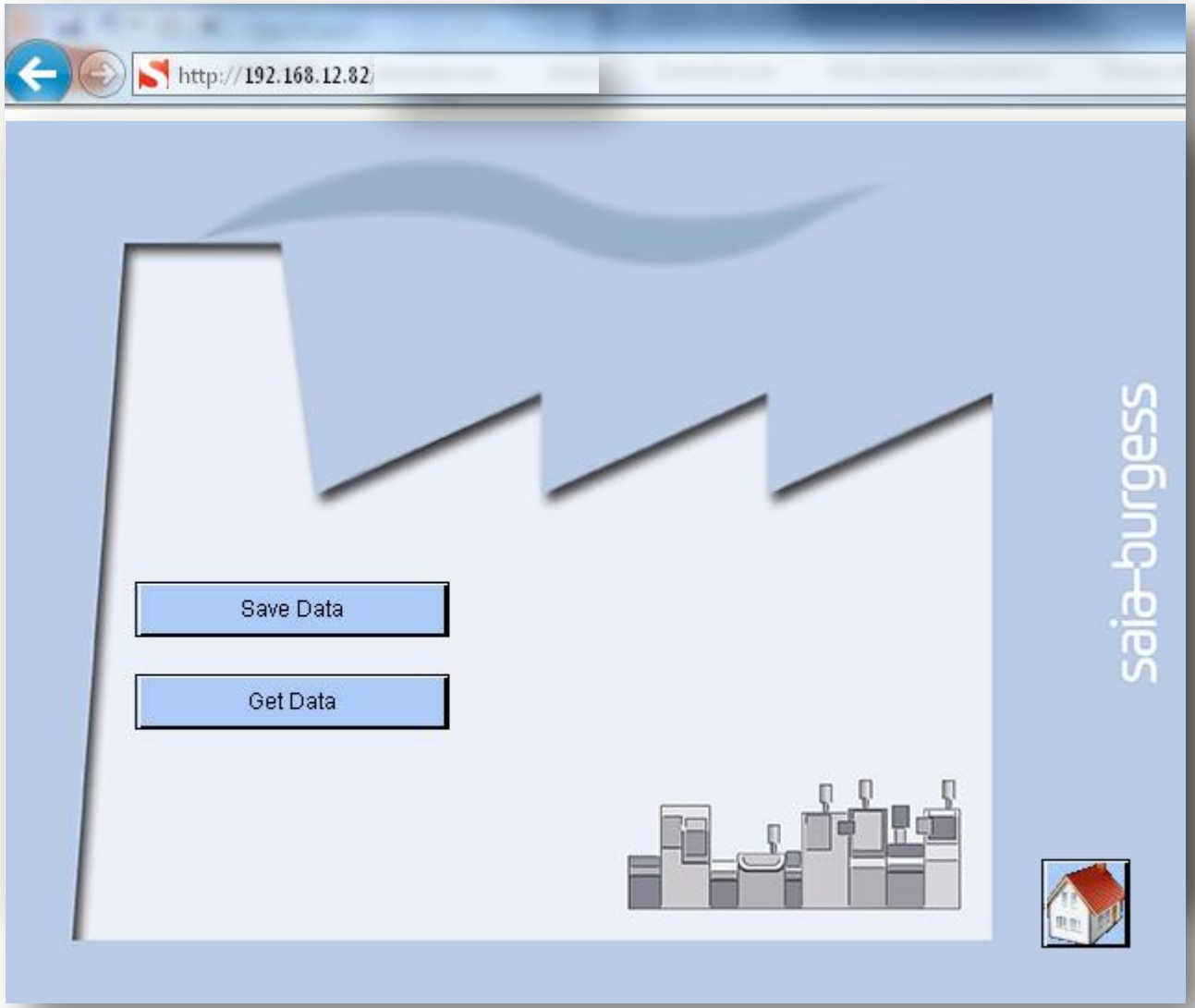




File system application
Download project



Compile WebEditor project

- Save and compile web project
- Download web project
- Close WebEditor

File system application
Test the web visualisation