

Application for Web-IO Digital, Web-IO Analog and Web-Thermographs:

# Web-IO 2Go - access from anywhere to your Web-IO with the Android app for Web-IO

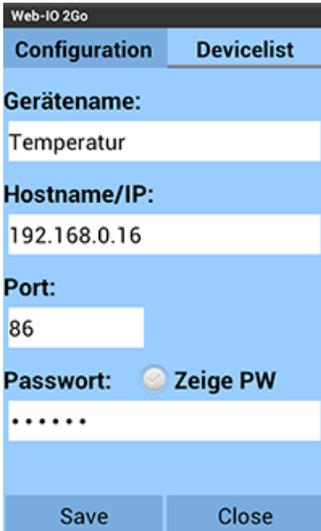


Just so you know: What we are presenting here is a project undertaken by our interns. We think the app programmed by our interns is very well done, and are therefore making it available to our customers.

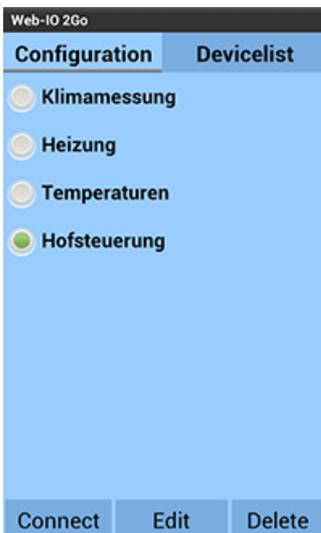
Our interns are grateful for both critique and praise, and we will be pleased to implement meaningful changes whenever possible.

With this Android app you have access to W&T Web-IO products such as Web-IO Digital, Web-Thermographs, Web-IO Analog and Web-Counters. You can monitor inputs, outputs, temperatures, relative humidity, air pressure, currents and voltages and control digital and analog outputs. After configuring the IP address or the host name, the app determines the Web-IO type and automatically builds the interface appropriate

to the device.



Configuration



Device List

Hofsteuerung		
INPUTS	COUNTER	OUTPUTS
0-5		
Tor	:	
Schranke	:	
Configuration		Close

Inputs on a Web-IO Digital

Hofsteuerung		
INPUTS	COUNTER	OUTPUTS
0-5		
Hoflicht	:	
Schranke auf	:	
Configuration		Close

Outputs on a Web-IO Digital

Temperaturen	
<b>Sensors:</b>	
Innen	: 26,5°C
Aussen	: 27,4°C
Heizung	: 78,7°C
Klimaanlage	: 26,3°C
Warmwasser	: 71,8°C
Lager	: 17,6°C
Brenner	: 348,8°C
Kühlhaus	: -24,0°C
Configuration	
Close	

Web-Thermograph

Heizung	
<b>Sensors:</b>	
Heizöl	439,140 : Liter
Lüftung	: 3,980 %
Heizöl	: <input type="checkbox"/> Enabled
<input type="text"/>	max. <input type="button" value="Set"/>
Lüftung	: <input checked="" type="checkbox"/> Enabled
<input type="text"/>	max. <input type="button" value="Set"/>
<input type="button" value="Configuration"/>	<input type="button" value="Close"/>

Web-IO Analog

The following steps are needed in order to work with the Web-IO 2Go app:

- Supply the Web-IO [with power and wire up the IOs](#)
- [connect to the network](#)
- assign an IP address to the Web-IO - no problem with [WuTility](#)
- Web-IO 2Go App im [Google Playstore](#) for downloading, installing and starting
- Enter Web-IO in the app
- **That's it**



#### You don't have a Web-IO yet but would like to try the example out sometime?

No problem: We will be glad to send you the Web-IO Digital 2xInput, 2xOutput at no charge for 30 days. Simply fill out a sample ordering form, and we will ship the Web-IO for testing on an open invoice. If you return the unit within 30 days, we will simply mark the invoice as paid.

[To sample orders](#)   
[Download app](#) 

## The path to our first Android app

### 1. Entering new territory

Our interns and students are constantly entering new territory. As a rule, they are accompanied and guided step-by-step by experienced colleagues.

But here there were no experienced colleagues for either the app development or the Java programming, so that both sides, supervisor and intern, entered on this adventure together.

### 2. Developing capabilities

The goal of study as well as training is to develop a whole set of capabilities so that at the end you are able to handle certain tasks confidently and independently.

At the beginning of our app project we didn't even know what all had to be learned. To keep from getting bored for weeks with study of the literature and didactic mini-examples, we tried to divide the project into small sub-tasks, so that we could then go right to that first one. In this way we acquired step-by-step all the necessary concepts and methods required for a functioning app.

If you read our diary, the path will seem somewhat without direction, and some of the later corrections would have been unnecessary if we had already "known" it at the beginning. But no matter how you look at it, in the beginning you just don't know and somehow you just have to go through the experience. But let it also be said that the path of concrete problem solving is an entirely fruitful and satisfying method.

### 3. Putting together a whole

For educational purposes it's enough to learn many individual skills. But for a product or service which will actually be sold, a "whole" needs to be assembled which satisfies the requirements of many customers under a variety of conditions.

Furthermore, this whole should not be a wild collection of many different functions, but rather totally "simple" - and yet

function safely and reliably in thousands of different cases.

Whether our "training app" already meets these requirements is for you to decide. We believe this goal is already nearly achieved.

Now we need your help, your experience reports, your constructive criticism in order to take the last steps, so that you too will be glad every time you control your equipment with this app.

In the learning and development diary you can read which [tasks](#) we assigned to ourselves, what solutions we found and how we got closer and closer to a functioning whole:

Week 3 / 2013	<ul style="list-style-type: none"> <li>• The first ideas for the Android application emerged</li> <li>• The goal was to link Web-IO Digital devices over the WLAN interface of the smartphone</li> <li>• After various attempts, crude connection to the devices was possible, but still with problems and crashes and only with Android 2.</li> </ul>
Week 4 / 2013	<ul style="list-style-type: none"> <li>• Connection errors mostly eliminated</li> <li>• Connection handling shifted to a dedicated class, thereby optimized for Android 4</li> <li>• First inputs and outputs can be displayed, but no other functions yet</li> <li>• Creation of a layout in portrait format</li> </ul>
Week 5 / 2013	<ul style="list-style-type: none"> <li>• Inputs, counters and outputs are now graphically displayed</li> <li>• Application restricted to portrait format, since the app crashes when the cell phone is rotated and landscape format is not yet supported</li> </ul>
Week 7 / 2013	<ul style="list-style-type: none"> <li>• First tests show that the current layout only works with the 57630 (Web-IO 12xDigital)</li> <li>• Layout made dynamic, allowing all Web-IO Digital devices to be linked</li> </ul>
Week 8 / 2013	<ul style="list-style-type: none"> <li>• First approaches for switching the outputs are built in, but still without other functions such as clearing.</li> </ul>
Week 10 / 2013	<ul style="list-style-type: none"> <li>• The outputs are now switchable and the corresponding state is displayed</li> <li>• Layout revised to simplify switching</li> <li>• Outputs are switched in nearly real-time</li> </ul>
Week 11 / 2013	<ul style="list-style-type: none"> <li>• <a href="#">Clearing of counter states needs to be implemented</a>, layout is modified accordingly</li> <li>• After the first attempts errors still occur whereby the wrong counter states are cleared</li> </ul>
Week 12 / 2013	<ul style="list-style-type: none"> <li>• First error elimination in the layout, whereby counter states are shown at the wrong locations</li> <li>• After the errors in the layout are corrected, the correct counters are selected but no longer cleared.</li> <li>• Indexing errors in the clearing procedure are fixed. Now the correct counters are selected and the counter states cleared.</li> </ul>
Week 14 / 2013	<ul style="list-style-type: none"> <li>• <a href="#">Idea for storing multiple Web-IOs and making them selectable</a></li> <li>• Drafting of a layout which shows "saved" devices</li> <li>• Save procedure is built into the app</li> <li>• Errors occur in which the text file with the data is not correctly saved</li> </ul>
Week 15 / 2013	<ul style="list-style-type: none"> <li>• After the errors have been fixed, text files with the device data are saved on the smartphone</li> <li>• Now the configuration data for the invoked Web-IO are saved in a text file, making invoking of devices simpler</li> </ul>
Week 16 / 2013	<ul style="list-style-type: none"> <li>• Revision of the layout needed for device selection</li> <li>• Function contains an error, whereby the wrong devices are invoked</li> </ul>
Week 17 / 2013	<ul style="list-style-type: none"> <li>• Function for switching between devices simplified and revised for display</li> <li>• Now connects to the correct devices</li> <li>• "Create new" and "Delete" are now possible, though still with some errors</li> <li>• Problems with "Create new" and "Delete" functions fixed</li> </ul>

Week 21 / 2013	<ul style="list-style-type: none"> <li>• The text files are named from a combination of IP or hostname and port</li> <li>• File names are not always correct, which results in crashes and errors in the delete procedure</li> <li>• Tests are made on various Android smartphones</li> <li>• Files are now correctly named, eliminating crashes and errors in deleting</li> </ul>
Week 24 / 2013	<ul style="list-style-type: none"> <li>• Save-to location now selectable (SD or internal memory)</li> <li>• After errors in saving on the SD card, now only the internal memory is supported, external saving is no longer possible</li> <li>• Layout for entering devices and the layout of the display for inputs, counters and outputs was revised and optimized</li> <li>• After the last error fix one can now link to Web-IO Digital devices without crashes or errors</li> </ul>
Week 25 / 2013	<ul style="list-style-type: none"> <li>• <a href="#">Expansion of the application to linking to Web-Thermographs</a></li> <li>• Drafting of a layout for Web-Thermographs</li> <li>• Linking to these devices is now possible</li> <li>• Web-Thermographs are correctly stored and can now also be directly invoked</li> <li>• Changing between Web-Thermographs and Web-IO Digital devices is possible with no further problems</li> <li>• Measurement values are correctly polled and correctly entered into the layout</li> </ul>
Week 26 / 2013	<ul style="list-style-type: none"> <li>• Drafting of layouts in landscape format</li> <li>• After minor problems have been eliminated, rotating the smartphone now no longer causes problems and functions well</li> <li>• Layouts again revised and optimized</li> <li>• It is not possible to access Web-IO Digital devices and Web-Thermo devices using the application</li> </ul>
Week 27 / 2013	<ul style="list-style-type: none"> <li>• New layouts added</li> <li>• Tests are made on various Android smartphones to verify functionality</li> <li>• Older smartphones have performance problems</li> </ul>
Week 29 / 2013	<ul style="list-style-type: none"> <li>• Source of the performance problems is sought and found in various functions</li> <li>• Application starts a new instance when the screen is turned, which results in the application crashing after multiple turns</li> <li>• Layout for listing the stored devices resulted in speed losses when there is large content</li> <li>• After revising the layout and inserting a new function which is triggered when the screen is rotated, the application now runs smoothly on all devices available for testing</li> </ul>
Week 32 - 2013	<ul style="list-style-type: none"> <li>• Expansion of the application to linking to Web-IO Analog devices</li> <li>• Devices are correctly stored and can also be correctly invoked</li> <li>• Setting of analog outputs is now possible</li> <li>• <a href="#">Incorporation of a password function</a></li> </ul>
Week 33 / 2013	<ul style="list-style-type: none"> <li>• Connecting to password-protected devices is now possible</li> <li>• Application is again checked for functionality</li> <li>• After checking everything and verifying function, the first version was uploaded to the Google Play Store</li> </ul>
Week 34 / 2013	<ul style="list-style-type: none"> <li>• Began to respond to customer reviews and change the application accordingly</li> <li>• <a href="#">Files with the device information can now be named by the use for better recognition</a></li> <li>• New function for saving contains errors, whereby difficulties in connecting to the devices occur</li> <li>• Device files can now also be edited and do not have to be completely recreated</li> </ul>
Week 35 / 2013	<ul style="list-style-type: none"> <li>• <a href="#">Retrieving of input and output names from the Web-IO Digital</a> Devices implemented</li> <li>• Names are not yet correctly associated</li> <li>• Layout for Web-IO Digital devices modified</li> <li>• The names are now correctly retrieved and entered</li> </ul>
Week 36 / 2013	<ul style="list-style-type: none"> <li>• <a href="#">Retrieving of sensor names from Web-Thermo and Web-IO Analog devices</a></li> <li>• Errors in revising the layouts of Web-Thermo devices</li> </ul>

Week 38 / 2013	<ul style="list-style-type: none"> <li>• Free naming of devices fully implemented</li> <li>• New version of the app almost ready for publication</li> </ul>
Week 45 / 2013	<ul style="list-style-type: none"> <li>• <a href="#">Change in colour design</a></li> </ul>
Week 48 / 2013	<ul style="list-style-type: none"> <li>• Internal saving of configuration changed</li> </ul>
Week 49 / 2013	<ul style="list-style-type: none"> <li>• Screen organization optimised</li> </ul>
Week 50 / 2013	<ul style="list-style-type: none"> <li>• <a href="#">Sensor names are copied over from the Web-IO</a></li> </ul>
Week 02 / 2014	<ul style="list-style-type: none"> <li>• Problems in representing special characters in sensor names fixed</li> </ul>
Week 03 / 2014	<ul style="list-style-type: none"> <li>• Problems in handling special characters in passwords eliminated</li> </ul>
Week 05 / 2014	<ul style="list-style-type: none"> <li>• <a href="#">Long sensor names in small displays can be scrolled</a></li> </ul>
Week 07 / 2014	<ul style="list-style-type: none"> <li>• Scaling for different display sizes revised</li> </ul>
Week 11 / 2014	<ul style="list-style-type: none"> <li>• <a href="#">Release of new APP version</a></li> </ul>

In planning is graphical representation of the curves for temperature, relative humidity, air pressure and other analog values



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