

# eLogger Web API DLL -register.dll API Manual-



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# 1. Introduction

eLogger is a free of charge and easy-to-use software to implement HMI and data logger applications on the following programmable automation controller (PAC) of ICPDAS:

- WinPAC, ViewPAC (OS: Windows CE .NET 5.0)
- XP8000-CE6 (OS: Windows CE .NET 6.0)
- XP8000 (OS: Windows Embedded Standard 2009)

The web API DLL “register.dll” provided by ICPDAS enables the user to access via the HTTP protocol remote IO modules over the Internet by reading from and writing to the eLogger Shared Memory.

The DLL APIs can be executed by entering the API name with its parameter in the URL of a standard browser. So users can take advantage of “register.dll” to develop web programs or mobile app to do a remote I/O monitoring.

**eLogger+register.dll**

**Enter URL to operate data**



## 2. register.dll API

eLogger includes a Memory Address Map. The register.dll provides 24 API for users to read and write eLogger “Shared Memory” data of the specified address. This URL format is : **http://IP address/.../register.dll?Parameter**

Example 1:

If the register.dll is located in the web root folder, you can set the URL as follow :

**http://192.168.0.1/register.dll?readAI=00000**

The IP address of the PAC.

Fill in the API to read/write data after a question mark(?)

Example 2:

If the register.dll is located in another directory which is under the web root folder, you can set the URL as follow :

**http://192.168.0.1/eLogger/register.dll?readAI=00000**

Specify a path to the PAC.

Fill in the API to read/write data after a question mark(?)

## 2.1. Read API

### Read Reference

The Read APIs enables the user to directly retrieve data values from eLogger Shared Memory.

### Function List

Function	Description
readAI=xxxxxx	Reads an analog input value (integer) from the specified AI address.
readAI_UInt=xxxxxx	Reads an analog input value (unsigned integer) from the specified AI address.
readAI_Long=xxxxxx	Reads an analog input value (long integer) from the specified AI address.
readAI_ULong=xxxxxx	Reads an analog input value (unsigned long integer) from the specified AI address.
readAI_Float=xxxxxx	Reads an analog input value (float) from the specified AI address.
readAI=xxxxxx&len=ooo	Reads several analog input values (integer) from consecutive AI addresses.
readAI_UInt=xxxxxx&len=ooo	Reads several analog input values (unsigned integer) from consecutive AI addresses.
readAO=xxxxxx	Reads an analog output value (integer) from the specified AO address.
readAO_UInt=xxxxxx	Reads an analog output value (unsigned integer) from the specified AO address.
readAO_Long=xxxxxx	Reads an analog output value (long integer) from the specified AO address.
readAO_ULong=xxxxxx	Reads an analog output value (unsigned long) from the specified AO address.
readAO_Float=xxxxxx	Reads an analog output value (float) value from the specified AO address.
readAO=xxxxxx&len=ooo	Reads several analog output values (integer) from consecutive AO addresses.

readAO_UInt=xxxxx&len=ooo	Reads several analog output values (unsigned integer) from consecutive AO addresses.
readDI=xxxxx	Reads the digital input status from the specified DI address.
readDI=xxxxx&len=ooo	Reads several digital input status from consecutive DI addresses.
readDO=xxxxx	Reads the digital output status from the specified DO address.
readDO=xxxxx&len=ooo	Reads several digital output status from consecutive DO addresses.



## 2.1.1 readAI=xxxxx

This function reads an analog input value of “integer” type from a specified AI address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAI” is case sensitive.

### Example:

<http://10.0.0.183/register.dll?readAI=00010>

Read an analog value from eLogger Shared Memory at address AI 10.

The screenshot displays the eLogger software interface on the left, showing a tree view of tags under 'Tag Mapping' with 'AI Tag' selected. A table of memory registers is shown on the right, with 'InputRegister[10]' highlighted. Below the table, a Windows Internet Explorer browser window is open, displaying the URL 'http://10.0.0.183/register.dll?readAI=00010' and the result '55'.

Memory Address	Name	Location	Description
InputRegister[0]	Sin	Math Curve->MathCurvID1->Sin	The value of the Sin.
InputRegister[1]	Rnd	Math Curve->MathCurvID1->Rnd	Random value.
InputRegister[2]	Input Register1	ModbusSerial->COM1_ID1->Input Register1	COM1_ID1_Address:30001
InputRegister[3]	Input Register2	ModbusSerial->COM1_ID1->Input Register2	COM1_ID1_Address:30002
InputRegister[4]	Input Register3	ModbusSerial->COM1_ID1->Input Register3	COM1_ID1_Address:30003
InputRegister[5]	Input Register4	ModbusSerial->COM1_ID1->Input Register4	COM1_ID1_Address:30004
InputRegister[6]	Input Register5	ModbusSerial->COM1_ID1->Input Register5	COM1_ID1_Address:30005
InputRegister[7]	Input Register6	ModbusSerial->COM1_ID1->Input Register6	COM1_ID1_Address:30006
InputRegister[8]	Input Register7	ModbusSerial->COM1_ID1->Input Register7	COM1_ID1_Address:30007
InputRegister[9]	Input Register8	ModbusSerial->COM1_ID1->Input Register8	COM1_ID1_Address:30008
InputRegister[10]	Input Register9	ModbusSerial->COM1_ID1->Input Register9	COM1_ID1_Address:30009
InputRegister[11]	Input Register10	ModbusSerial->COM1_ID1->Input Register10	COM1_ID1_Address:30010

### **2.1.2 readAI\_UInt=xxxxx**

This function reads an analog input value of “unsigned integer” type from the specified AI address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAI\_UInt=” is case sensitive.

### **2.1.3 readAI\_Long=xxxxx**

This function reads an analog input value of “long integer” type from a specified AI address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAI\_Long=” is case sensitive.

### **2.1.4 readAI\_ULong=xxxxx**

This function reads an analog input value of “unsigned long integer” type from a specified AI address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAI\_ULong=” is case sensitive.

### **2.1.5 readAI\_Float=xxxxx**

This function reads an analog input value of “float” type from the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAI\_Float=” is case sensitive.

## 2.1.6 readAI=xxxxx&len=ooo

This function reads several analog input values of “integer” type from consecutive AI addresses. The “x” represents a five-digit start address location in the eLogger Shared Memory, with a valid start range of 00000 to 99999 ; The “o” represents a three-digit data length, and the maximum length is 256. Please note that the API name “readAI=xxxxx&len=” is case sensitive.

This function returns the retrieved values in a string whereby each value is separated by a comma. The string length of each value is six digits. (If a value is smaller than six digits then the front is filled up with spaces) Such as: “ 32767, 12,-32768, -10”. The advantage of this approach is that users can distinguish the set of values in the string by either counting the number of digits (each value is six digits long) or by looking for a comma which indicates the beginning of a new value.

### Example:

<http://10.0.0.183/register.dll?readAI=00000&len=005>

Read five consecutive values from the Shared Memory address AI 0~AI 4.

The screenshot shows the eLogger software interface with a table of memory addresses and a browser window displaying the result of the readAI API call.

Memory Address	Name	Location	Description
InputRegister[0]	Sin	Math Curve->MathCurvID1->Sin	The value of the Sin.
InputRegister[1]	Rnd	Math Curve->MathCurvID1->Rnd	Random value.
InputRegister[2]	Input Register1	ModbusSerial->COM2_ID1->Input Register1	COM2_ID1_Address:30001
InputRegister[3]	Input Register2	ModbusSerial->COM2_ID1->Input Register2	COM2_ID1_Address:30002
InputRegister[4]	Input Register3	ModbusSerial->COM2_ID1->Input Register3	COM2_ID1_Address:30003
InputRegister[5]	Input Register4	ModbusSerial->COM2_ID1->Input Register4	COM2_ID1_Address:30004
InputRegister[6]	Input Register5	ModbusSerial->COM2_ID1->Input Register5	COM2_ID1_Address:30005
InputRegister[7]	Input Register6	ModbusSerial->COM2_ID1->Input Register6	COM2_ID1_Address:30006
InputRegister[8]	Input Register7	ModbusSerial->COM2_ID1->Input Register7	COM2_ID1_Address:30007
InputRegister[9]	Input Register8	ModbusSerial->COM2_ID1->Input Register8	COM2_ID1_Address:30008
InputRegister[10]	Input Register9	ModbusSerial->COM2_ID1->Input Register9	COM2_ID1_Address:30009
InputRegister[11]	Input Register10	ModbusSerial->COM2_ID1->Input Register10	COM2_ID1_Address:30010

The browser window shows the URL <http://10.0.0.183/register.dll?readAI=00000&len=005> and the result: 84, 2, 124, -898, 849.

### 2.1.7 readAI\_UInt=xxxxx&len=ooo

This function reads several analog input values of “unsigned integer” type from consecutive AI addresses. The “x” represents a five-digit start address location in the eLogger Shared Memory, with a valid start range of 00000 to 99999 ; The “o” represents a three-digit data length, and the maximum length is 256. Please note that the API name “readAI\_UInt=xxxxx&len=” is case sensitive.

This function returns the retrieved values in a string whereby each value is separated by a comma. The string length of each value is six digits. (If a value is smaller than six digits then the front is filled up with spaces) Such as: “ 32767, 12,-32768, -10”. The advantage of this approach is that users can distinguish the set of values in the string by either counting the number of digits (each value is six digits long) or by looking for a comma which indicates the beginning of a new value.

## 2.1.8 readAO=xxxxx

This function reads an analog output value of “integer” type from a specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAO” is case sensitive.

### Example:

<http://10.0.0.183/register.dll?readAO=00005>

Read an analog value from eLogger Shared Memory at address AO 5.

The image shows a screenshot of the eLogger software interface on the left and a Windows Internet Explorer browser window on the right. The eLogger interface displays a table of memory addresses and their corresponding names and descriptions. The 'AO Tag' is highlighted in the left sidebar, and the 'HoldingRegister[5]' row is circled in red. The browser window shows the URL <http://10.0.0.183/register.dll?readAO=00005> in the address bar, which is also circled in red. The browser displays the value -985.

System	Memory Address	Name	Location	Description
Driver(New)	HoldingRegister[0]	Holding Register1	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40001
Math Curv	HoldingRegister[1]	Holding Register2	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40002
MathCu	HoldingRegister[2]	Holding Register3	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40003
ModbusSe	HoldingRegister[3]	Holding Register4	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40004
COM2	HoldingRegister[4]	Holding Register5	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40005
Tag Mapping	HoldingRegister[5]	Holding Register6	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40006
AI Tag	HoldingRegister[6]	Holding Register7	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40007
DI Tag	HoldingRegister[7]	Holding Register8	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40008
DO T	HoldingRegister[8]	Holding Register9	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40009
	HoldingRegister[9]	Holding Register...	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40010

### **2.1.9 readAO\_UInt=xxxxx**

This function reads an analog output value of “unsigned integer” type from the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAO\_UInt=” is case sensitive.

### **2.1.10 readAO\_Long=xxxxx**

This function reads an analog output value of “long integer” type from the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAO\_Long=” is case sensitive.

### **2.1.11 readAO\_ULong=xxxxx**

This function reads an analog output value of “unsigned long integer” type from the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAO\_ULong=” is case sensitive.

### **2.1.12 readAO\_Float=xxxxx**

This function reads an analog output value of “float” type from the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readAO\_Float=” is case sensitive.

### 2.1.13 readAO=xxxxx&len=ooo

This function reads several analog output values of “integer” type from consecutive AO addresses. The “x” represents a five-digit start address location in the eLogger Shared Memory, with a valid start range of 00000 to 99999 ; The “o” represents a three-digit data length, and the maximum length is 256. Please note that the API name “readAO=xxxxx&len=” is case sensitive.

This function returns the retrieved values in a string whereby each value is separated by a comma. The string length of each value is six digits. (If a value is smaller than six digits then the front is filled up with spaces) Such as: “ 32767, 12,-32768, -10”. The advantage of this approach is that users can distinguish the set of values in the string by either counting the number of digits (each value is six digits long) or by looking for a comma which indicates the beginning of a new value.

#### Example:

<http://10.0.0.183/register.dll?readAO=00001&len=009>

Read five consecutive values from Shared Memory address AO 1~AO 9.

The screenshot shows the eLogger software interface. On the left, a tree view shows 'AO Tag' selected. The main window displays a table of Holding Registers:

Memory Address	Name	Location	Description
HoldingRegister[0]	Holding Register1	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40001
HoldingRegister[1]	Holding Register2	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40002
HoldingRegister[2]	Holding Register3	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40003
HoldingRegister[3]	Holding Register4	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40004
HoldingRegister[4]	Holding Register5	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40005
HoldingRegister[5]	Holding Register6	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40006
HoldingRegister[6]	Holding Register7	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40007
HoldingRegister[7]	Holding Register8	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40008
HoldingRegister[8]	Holding Register9	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40009
HoldingRegister[9]	Holding Register...	ModbusSerial->COM2_ID1->Holding Regist...	COM2_ID1_Address:40010

Below the table, a Windows Internet Explorer window shows the URL <http://10.0.0.183/register.dll?readAO=00001&len=009> and the response: "1413, 3160, -30402, 2379, -47, 0, 0, 4262, 0".

### 2.1.14 readAO\_UInt=xxxxx&len=ooo

This function reads several analog output values of “unsigned integer” type from consecutive AO addresses. The “x” represents a five-digit start address location in the eLogger Shared Memory, with a valid start range of 00000 to 99999 ; The “o” represents a three-digit data length, and the maximum length is 256. Please note that the API name “readAO\_UInt=xxxxx&len=” is case sensitive.

This function returns the retrieved values in a string whereby each value is separated by a comma. The string length of each value is six digits. (If a value is smaller than six digits then the front is filled up with spaces) Such as: “ 32767, 12,-32768, -10”. The advantage of this approach is that users can distinguish the set of values in the string by either counting the number of digits (each value is six digits long) or by looking for a comma which indicates the beginning of a new value.



### 2.1.15 readDI=xxxxx

This function reads the ON/OFF status (1=ON; 0=OFF) from the specified DI address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readDI=” is case sensitive.

#### Example:

EX : <http://10.0.0.183/register.dll?readDI=00003>

Read the ON/OFF status from the eLogger Shared Memory address DI 3.

The screenshot shows the eLogger software interface. On the left, a tree view shows the 'DI Tag' selected. The main window displays a table of DI tags with the following data:

Memory Ad...	Name	Location	Description	Note
[InputStatus[0]	Input Status1	ModbusSerial->COM2_ID1->Input Status1	COM2_ID1_Address:10001	
InputStatus[1]	Input Status2	ModbusSerial->COM2_ID1->Input Status2	COM2_ID1_Address:10002	
InputStatus[2]	Input Status3	ModbusSerial->COM2_ID1->Input Status3	COM2_ID1_Address:10003	
InputStatus[3]	Input Status4	ModbusSerial->COM2_ID1->Input Status4	COM2_ID1_Address:10004	
InputStatus[4]	Input Status5	ModbusSerial->COM2_ID1->Input Status5	COM2_ID1_Address:10005	
InputStatus[5]	Input Status6	ModbusSerial->COM2_ID1->Input Status6	COM2_ID1_Address:10006	
InputStatus[6]	Input Status7	ModbusSerial->COM2_ID1->Input Status7	COM2_ID1_Address:10007	
InputStatus[7]	Input Status8	ModbusSerial->COM2_ID1->Input Status8	COM2_ID1_Address:10008	
InputStatus[8]	Input Status9	ModbusSerial->COM2_ID1->Input Status9	COM2_ID1_Address:10009	
InputStatus[9]	Input Status10	ModbusSerial->COM2_ID1->Input Status10	COM2_ID1_Address:10010	

Below the table, a Windows Internet Explorer browser window is open, displaying the URL <http://10.0.0.183/register.dll?readDI=00003>. The browser shows a single digit '1' in the main content area, indicating that the DI status at address 00003 is ON.

## 2.1.16 readDI=xxxxx&len=ooo

This function reads several ON/OFF status (1=ON; 0=OFF) from consecutive DI addresses. The “x” represents a five-digit start address location in the eLogger Shared Memory, with a valid start range of 00000 to 99999 ; The “o” represents a three-digit data length, and the maximum length is 256. Please note that the API name “readDI=xxxxx&len=” is case sensitive.

This function returns the retrieved values in a string whereby each value is separated by a comma. The string length of each value is six digits. (If a value is smaller than six digits then the front is filled up with spaces) Such as:

“ 1, 1, 0, 1”. The advantage of this approach is that users can distinguish the set of values in the string by either counting the number of digits (each value is six digits long) or by looking for a comma which indicates the beginning of a new value.

### Example:

<http://10.0.0.183/register.dll?readDI=00000&len=005>

Read five consecutive values from Shared Memory address DI 0~DI 5.

The screenshot shows the eLogger software interface on the left and a Windows Internet Explorer browser window on the right. In the eLogger interface, the 'DI Tag' is selected in the left-hand menu, and a table of input statuses is displayed. The table has columns for Memory Address, Name, Location, and Description. The first five rows (Input Status 0 to 5) are circled in red. The browser window shows the URL <http://10.0.0.183/register.dll?readDI=00000&len=005> in the address bar, which is also circled in red. The browser's main content area displays the result of the API call: "1, 0, 0, 1, 1".

Memory Ad.	Name	Location	Description
InputStatus[0]	Input Status1	ModbusSerial->COM2_ID1->Input Status1	COM2_ID1_Address:10001
InputStatus[1]	Input Status2	ModbusSerial->COM2_ID1->Input Status2	COM2_ID1_Address:10002
InputStatus[2]	Input Status3	ModbusSerial->COM2_ID1->Input Status3	COM2_ID1_Address:10003
InputStatus[3]	Input Status4	ModbusSerial->COM2_ID1->Input Status4	COM2_ID1_Address:10004
InputStatus[4]	Input Status5	ModbusSerial->COM2_ID1->Input Status5	COM2_ID1_Address:10005
InputStatus[5]	Input Status6	ModbusSerial->COM2_ID1->Input Status6	COM2_ID1_Address:10006
InputStatus[6]	Input Status7	ModbusSerial->COM2_ID1->Input Status7	COM2_ID1_Address:10007
InputStatus[7]	Input Status8	ModbusSerial->COM2_ID1->Input Status8	COM2_ID1_Address:10008
InputStatus[8]	Input Status9	ModbusSerial->COM2_ID1->Input Status9	COM2_ID1_Address:10009
InputStatus[9]	Input Status10	ModbusSerial->COM2_ID1->Input Status10	COM2_ID1_Address:10010

## 2.1.17 readDO=xxxxx

This function reads the ON/OFF status (1=ON; 0=OFF) from the specified DO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999. Please note that the API name “readDI=” is case sensitive.

### Example:

EX : <http://10.0.0.183/register.dll?readDO=00011>

Read the ON/OFF status from eLogger Shared Memory address DO 11.

The image shows a screenshot of the eLogger software interface and a web browser. The eLogger interface displays a table of memory addresses and coil statuses. The 'DO Tag' is selected in the left-hand menu. The web browser shows the URL <http://10.0.0.183/register.dll?readDO=00011> and the result '0'.

Memory Ad...	Name	Location	Description	Note
CoilStatus[0]	Coil1	ModbusSerial->COM2_ID1->Coil1	COM2_ID1_Address:00001	
CoilStatus[1]	Coil2	ModbusSerial->COM2_ID1->Coil2	COM2_ID1_Address:00002	
CoilStatus[2]	Coil3	ModbusSerial->COM2_ID1->Coil3	COM2_ID1_Address:00003	
CoilStatus[3]	Coil4	ModbusSerial->COM2_ID1->Coil4	COM2_ID1_Address:00004	
CoilStatus[4]	Coil5	ModbusSerial->COM2_ID1->Coil5	COM2_ID1_Address:00005	
CoilStatus[5]	Coil6	ModbusSerial->COM2_ID1->Coil6	COM2_ID1_Address:00006	
CoilStatus[6]	Coil7	ModbusSerial->COM2_ID1->Coil7	COM2_ID1_Address:00007	
CoilStatus[7]	Coil8	ModbusSerial->COM2_ID1->Coil8	COM2_ID1_Address:00008	
CoilStatus[8]	Coil9	ModbusSerial->COM2_ID1->Coil9	COM2_ID1_Address:00009	
CoilStatus[9]	Coil10	ModbusSerial->COM2_ID1->Coil10	COM2_ID1_Address:00010	
CoilStatus[10]	Coil11	ModbusSerial->COM2_ID1->Coil11	COM2_ID1_Address:00011	
CoilStatus[11]	Coil12	ModbusSerial->COM2_ID1->Coil12	COM2_ID1_Address:00012	
CoilStatus[12]	Coil13	ModbusSerial->COM2_ID1->Coil13	COM2_ID1_Address:00013	
CoilStatus[13]	Coil14	ModbusSerial->COM2_ID1->Coil14	COM2_ID1_Address:00014	
CoilStatus[14]	Coil15	ModbusSerial->COM2_ID1->Coil15	COM2_ID1_Address:00015	

## 2.1.18 readDO=xxxxx&len=ooo

This function reads several ON/OFF status (1=ON; 0=OFF) from consecutive DO addresses. The “x” represents a five-digit start address location in the eLogger Shared Memory, with a valid start range of 00000 to 99999; The “o” represents a three-digit data length, and the maximum length is 256. Please note that the API name “readDO=xxxxx&len=” is case sensitive.

This function returns the retrieved values in a string whereby each value is separated by a comma. The string length of each value is six digits. (If a value is smaller than six digits then the front is filled up with spaces) Such as:

“ 1, 1, 0, 1”. The advantage of this approach is that users can distinguish the set of values in the string by either counting the number of digits (each value is six digits long) or by looking for a comma which indicates the beginning of a new value.

### Example:

<http://10.0.0.183/register.dll?readDO=00010&len=005>

Read five consecutive values from Shared Memory address DO10~DO14.

The screenshot shows the eLogger software interface with a table of memory addresses and a browser window displaying the result of a readDO API call.

Memory Ad...	Name	Location	Description	Note
CoilStatus[0]	Coil1	ModbusSerial->COM2_ID1->Coil1	COM2_ID1_Address:00001	
CoilStatus[1]	Coil2	ModbusSerial->COM2_ID1->Coil2	COM2_ID1_Address:00002	
CoilStatus[2]	Coil3	ModbusSerial->COM2_ID1->Coil3	COM2_ID1_Address:00003	
CoilStatus[3]	Coil4	ModbusSerial->COM2_ID1->Coil4	COM2_ID1_Address:00004	
CoilStatus[4]	Coil5	ModbusSerial->COM2_ID1->Coil5	COM2_ID1_Address:00005	
CoilStatus[5]	Coil6	ModbusSerial->COM2_ID1->Coil6	COM2_ID1_Address:00006	
CoilStatus[6]	Coil7	ModbusSerial->COM2_ID1->Coil7	COM2_ID1_Address:00007	
CoilStatus[7]	Coil8	ModbusSerial->COM2_ID1->Coil8	COM2_ID1_Address:00008	
CoilStatus[8]	Coil9	ModbusSerial->COM2_ID1->Coil9	COM2_ID1_Address:00009	
CoilStatus[9]	Coil10	ModbusSerial->COM2_ID1->Coil10	COM2_ID1_Address:00010	
CoilStatus[10]	Coil11	ModbusSerial->COM2_ID1->Coil11	COM2_ID1_Address:00011	
CoilStatus[11]	Coil12	ModbusSerial->COM2_ID1->Coil12	COM2_ID1_Address:00012	
CoilStatus[12]	Coil13	ModbusSerial->COM2_ID1->Coil13	COM2_ID1_Address:00013	
CoilStatus[13]	Coil14	ModbusSerial->COM2_ID1->Coil14	COM2_ID1_Address:00014	
CoilStatus[14]	Coil15	ModbusSerial->COM2_ID1->Coil15	COM2_ID1_Address:00015	

The browser window shows the URL <http://10.0.0.183/register.dll?readDO=00010&len=005> and the result: 0, 1, 1, 0, 0.

## 2.2. Write API

### Write Reference

Write APIs allows the setting of values in the eLogger Shared Memory.

### Function List

Function	Description
writeAO=xxxxx&data=value	Writes an analog output value (integer) to the specified AO address.
writeAO_UInt=xxxxx&data=value	Writes an analog output value (unsigned integer) to the specified AO address.
writeAO_Long=xxxxx&data=value	Writes an analog output value (long integer) to the specified AO address.
writeAO_ULong=xxxxx&data=value	Writes an analog output value (unsigned long integer) to the specified AO address.
writeAO_float=xxxxx&data=value	Writes an analog output value (float) to the specified AO address.
writeDO=xxxxx&data=value	Writes the digital output status to the specified DO address.

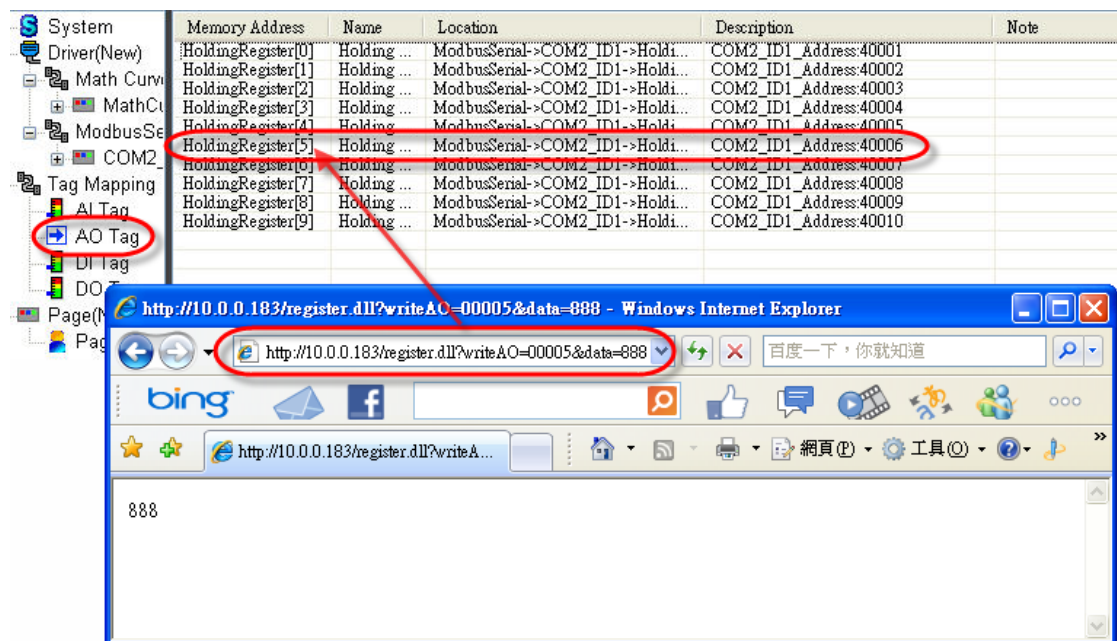
## 2.2.1 writeAO=xxxxx&data=value

This function writes an analog output value of “integer” type to the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999; the “value” represents the AO value to be written to the AO address. Please note that the API name “writeAO=xxxxx&data=” is case sensitive.

### Example:

<http://10.0.0.183/register.dll?writeAO=00005&data=888>

Write value “888” to the eLogger Shared Memory address AO 5.



### **2.2.2 writeAO\_UInt=xxxxx&data=value**

This function writes an analog output value of “unsigned integer” type to the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999; the “value” represents the AO value to be written to the AO address. Please note that the API name “writeAO\_UInt=xxxxx&data=” is case sensitive.

### **2.2.3 writeAO\_Long=xxxxx&data=value**

This function writes an analog output value of “long integer” type to the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999; the “value” represents the AO value to be written to the AO address. Please note that the API name “writeAO\_Long=xxxxx&data=” is case sensitive.

### **2.2.4 writeAO\_ULong=xxxxx&data=value**

This function writes an analog output value of “unsigned long integer” type to the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999; the “value” represents the AO value to be written to the AO address. Please note that the API name “writeAO\_ULong=xxxxx&data=” is case sensitive.

### 2.2.5 writeAO\_Float=xxxxx&data=value

This function writes an analog output value of “float” type to the specified AO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999; the “value” represents the AO value to be written to the AO address. Please note that the API name “writeAO\_Float=xxxxx&data=” is case sensitive.



## 2.2.6 writeDO=xxxxx&data=value

This function writes the ON/OFF status (1=ON; 0=OFF) to a specified DO address. The “x” represents a five-digit address location in the eLogger Shared Memory, with a valid range of 00000 to 99999; the “value” represents the DO status (1=ON; 0=OFF) to write to the DO address. Please note that the API name “writeDO=xxxxx&data=” is case sensitive.

### Example:

EX : <http://10.0.0.183/register.dll?writeDO=00010&data=1>

Write value 1 to the eLogger Shared Memory address DO 10, and the status is ON.

The image shows two overlapping screenshots. The top one is a screenshot of the eLogger software interface, displaying a table of memory addresses and their corresponding coil statuses. The bottom one is a screenshot of a Windows Internet Explorer browser window showing the execution of the API call.

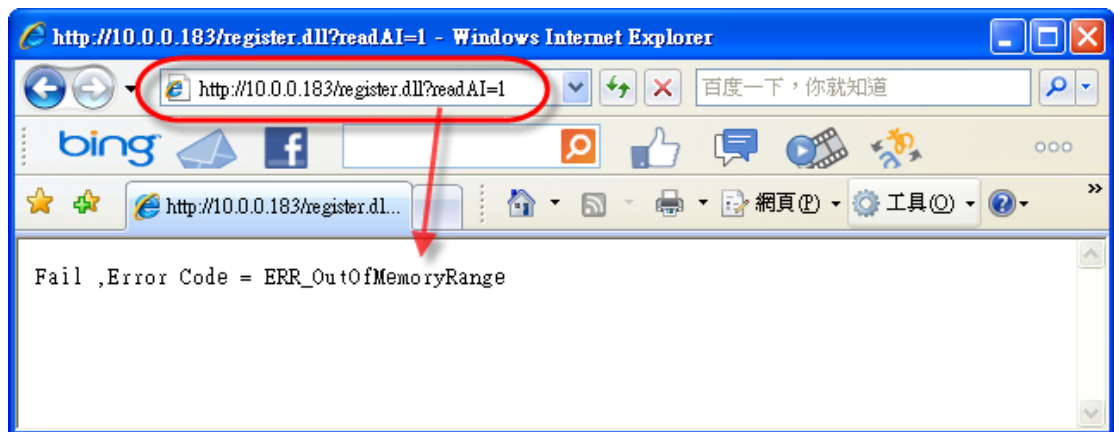
Memory Address	Name	Location	Description	Note
CoilStatus[0]	Coil1	ModbusSerial->COM2_ID1->Coil1	COM2_ID1_Address:00001	
CoilStatus[1]	Coil2	ModbusSerial->COM2_ID1->Coil2	COM2_ID1_Address:00002	
CoilStatus[2]	Coil3	ModbusSerial->COM2_ID1->Coil3	COM2_ID1_Address:00003	
CoilStatus[3]	Coil4	ModbusSerial->COM2_ID1->Coil4	COM2_ID1_Address:00004	
CoilStatus[4]	Coil5	ModbusSerial->COM2_ID1->Coil5	COM2_ID1_Address:00005	
CoilStatus[5]	Coil6	ModbusSerial->COM2_ID1->Coil6	COM2_ID1_Address:00006	
CoilStatus[6]	Coil7	ModbusSerial->COM2_ID1->Coil7	COM2_ID1_Address:00007	
CoilStatus[7]	Coil8	ModbusSerial->COM2_ID1->Coil8	COM2_ID1_Address:00008	
CoilStatus[8]	Coil9	ModbusSerial->COM2_ID1->Coil9	COM2_ID1_Address:00009	
CoilStatus[9]	Coil10	ModbusSerial->COM2_ID1->Coil10	COM2_ID1_Address:00010	
CoilStatus[10]	Coil11	ModbusSerial->COM2_ID1->Coil11	COM2_ID1_Address:00011	
CoilStatus[11]	Coil12	ModbusSerial->COM2_ID1->Coil12	COM2_ID1_Address:00012	
CoilStatus[12]	Coil13	ModbusSerial->COM2_ID1->Coil13	COM2_ID1_Address:00013	
CoilStatus[13]	Coil14	ModbusSerial->COM2_ID1->Coil14	COM2_ID1_Address:00014	
CoilStatus[14]	Coil15	ModbusSerial->COM2_ID1->Coil15	COM2_ID1_Address:00015	

The browser window shows the URL <http://10.0.0.183/register.dll?writeDO=00010&data=1> in the address bar, and the page content displays the number 1.

## 2.3. Error Code Reference

When users sent a wrong or invalid URL command, the register.dll will return an error string. An error string example is shown in the following figure:

"Fail, Error Code: ERR\_OutOfMemoryRange"






The error codes are described in the table.

Error Code	Description
ERR_OutOfMemoryRange	The address is invalid, incompatible formats.
ERR_WrongCommand	The parameter is invalid. (Misspelled or not case sensitive)
ERR_WriteDataNotNumber	The value written to the eLogger Shared Memory not a number.
ERR_WriteDataNotInterger	The value written to the eLogger Shared Memory not an integer.
ERR_WriteDataNotUInterger	The value written to the eLogger Shared Memory not an unsigned integer.
ERR_WriteDataNotLong	The value written to the eLogger Shared Memory not a long integer.
ERR_WriteDataNotULong	The value written to the eLogger Shared Memory not an unsigned long integer.
ERR_Unknown	Unknown error.

### 3. How To Configure register.dll

ICPDAS provide for each operation system a different register.dll different version. Therefore make sure to select the correct version corresponding to your OS. The eLogger setup file can be downloaded from ICP DAS website. After unzipping the setup file, copy the appropriate runtime directory to your PAC, and follow the steps below to configure the register.dll.

The table below displays for the different OS supported by the PAC series the corresponding eLogger runtime file name and register.dll.


OS	eLogger runtime file	register.dll
CE5	For_WinPAC	 register.dll 1.0.2.0 eLogger Web API CE5
CE6	For_XP8000CE6	 register.dll 1.0.2.0 eLogger Web API CE6
XPE	For_XP8000WES	 register.dll 1.0.2.0 eLogger Web API XPE

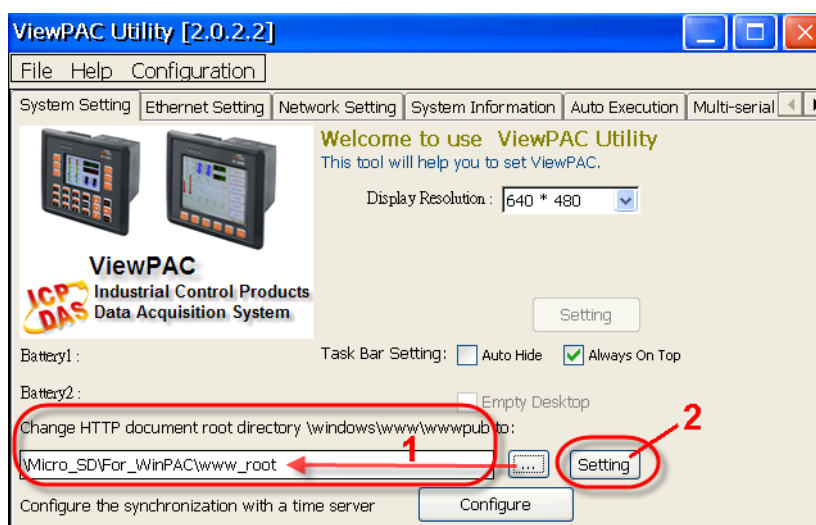
### 3.1. Windows CE5 based PACs

**Step 1:** Copy the eLogger runtime folder "For\_WinPAC" to any folder of the PAC.

Example : \Micro\_SD\For\_WinPAC

**Step 2:** Open the folder "\Micro\_SD\For\_WinPAC\system\_disk\icpdas\system" and copy the file "SharedMemory.dll" to the PAC's system folder "\System\_Disk\icpdas\system" to allow multiple programs to read and write eLogger Shared Memory.

**Step 3:** Execute "ViewPAC Utility" on desktop, switch to "System Setting" tab, click  button to change the web root directory to the following directory: \Micro\_SD\For\_WinPAC\www\_root, and then click the "Setting" button to finish the setting. Now the register.dll can be used by the network.



## 3.2. Windows CE6 based PACs

**Step 1:** Copy the eLogger runtime folder "For\_XP8000CE6" to the any folder on the PAC.

Example : System\_Disk\For\_XP8000CE6

**Step 2:** Open the folder :

"\System\_Disk\For\_XP8000CE6\system\_disk\icpdas\system and copy the file "SharedMemory\_CE6.dll" to the PAC's system folder \System\_Disk\ICPDAS\SYSTEM to allow multiple programs to read and write eLogger Shared Memory.

**Step 3:** Open the folder \System\_Disk\For\_XP8000CE6\www\_root and copy the file "register.dll" to the PAC's web root directory (Note)

\System\_Disk\www. The register.dll can now be accessed via internet.

Note : Start the "XPAC Utility" on the desktop, and switch to "Network" tab to confirm that the web root directory is \System\_Disk\www. If not then click the "... " button to change to the correct directory, and then click the "Apply" button to finish the setting.

### 3.3. Windows Embedded Standard 2009 PACs

**Step 1:** Copy the eLogger runtime folder "For\_XP8000WES" to the any folder on the PAC.

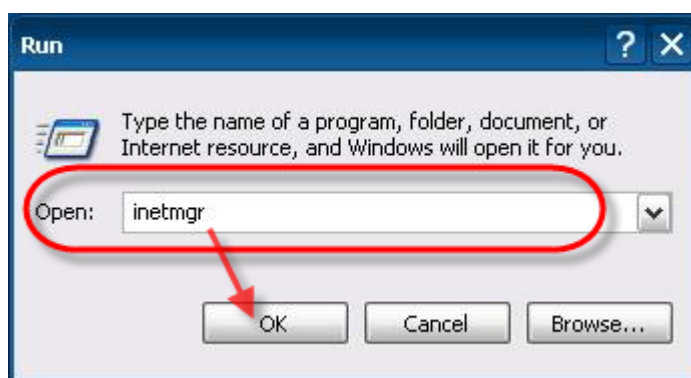
Example : T:\For\_XP8000WES

**Step 2:** Open the folder : " T:\For\_XP8000WES \windows" and copy the file "SharedMemory\_XP.dll" to the PAC's system folder " C:\windows" to allow multiple programs to read and write eLogger Shared Memory.

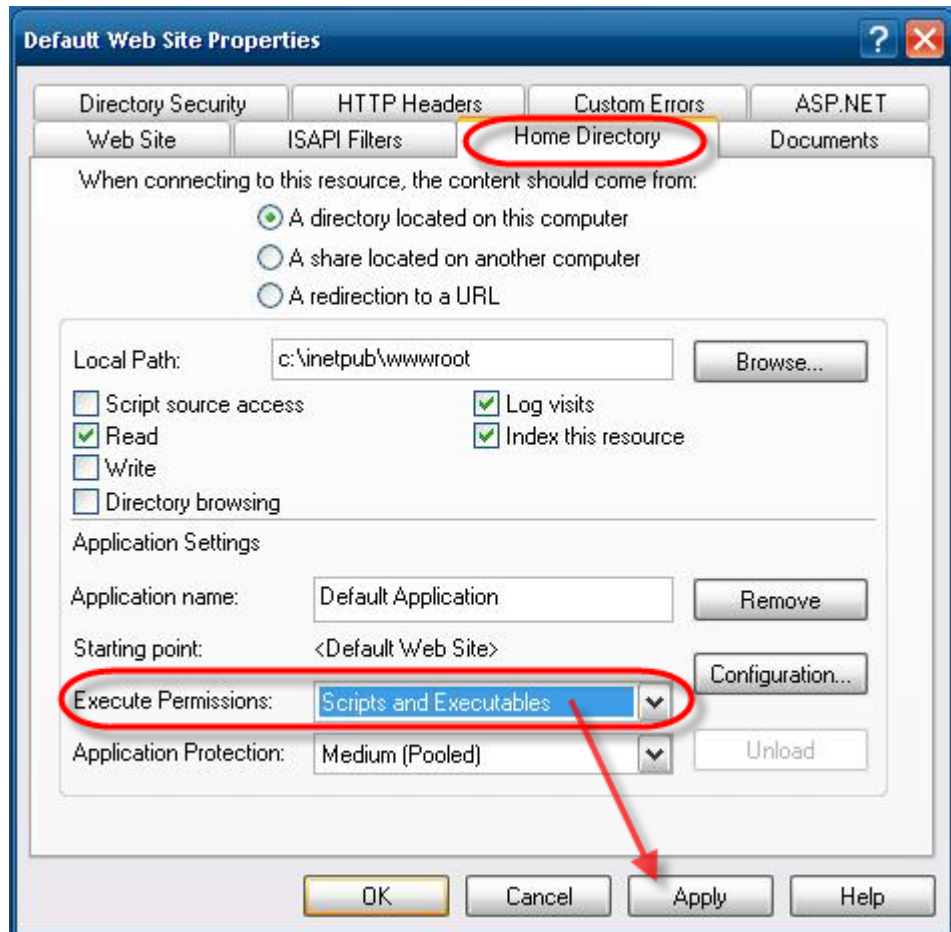
**Step 3:** Open the folder "T:\For\_XP8000WES\www\_root" and copy the file "register.dll" to the PAC's web root directory "C:\inetpub\wwwroot".

**Step 4:** Enable the "Scripts and Executes" rights of the Web directory. So that users can operate the register.dll by network.

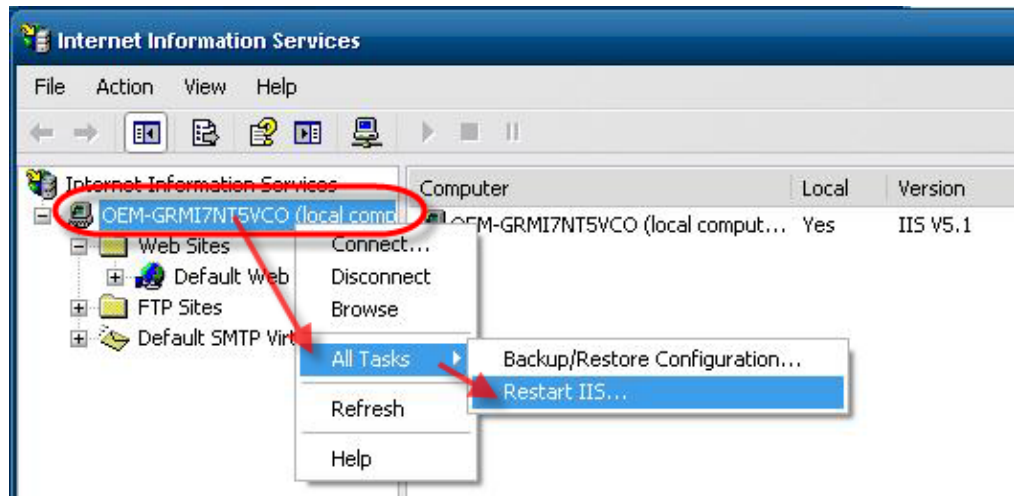
- a. Start → Run → insert the command "inetmgr" to open IIS.



- b. Right click "Default Web Site" to select "Properties" → on the "Home Directory" tab, select the "Scripts and Executables" check box for "Execute permissions" → click the "Apply" button → click the "OK" button.



- c. In the IIS manager, right click the local computer, point to “All Tasks”, then click “Restart IIS”





# 4. How To Develop Android App

## <Setup and Tutorials>

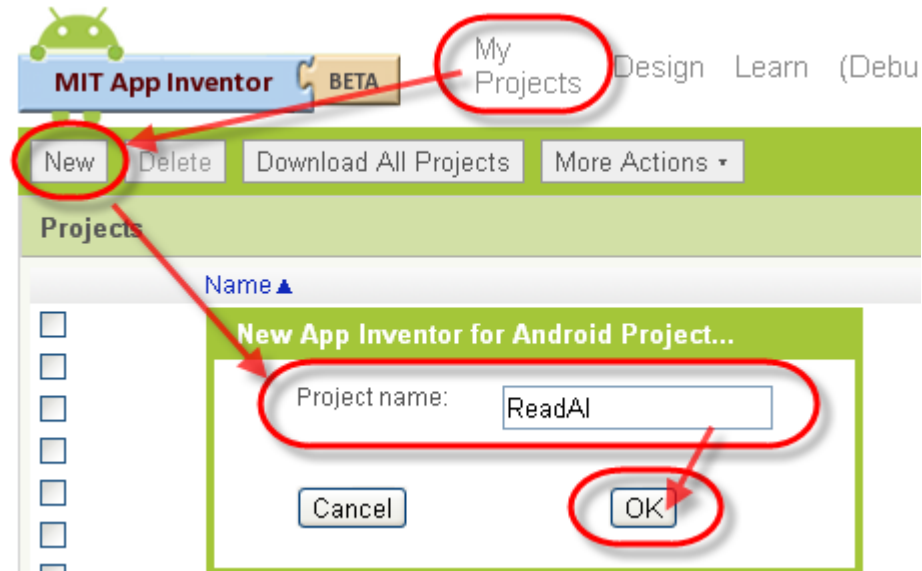
[MIT App Inventor website](#)

[App Inventor teaching website](#)

### Example1 : Read data from the eLogger Shared Memory AI 1

#### Step 1: Build a new project

Login Gmail → open [The Designer](#) → move to “My Projects” page and build a new project named “ReadAI”.

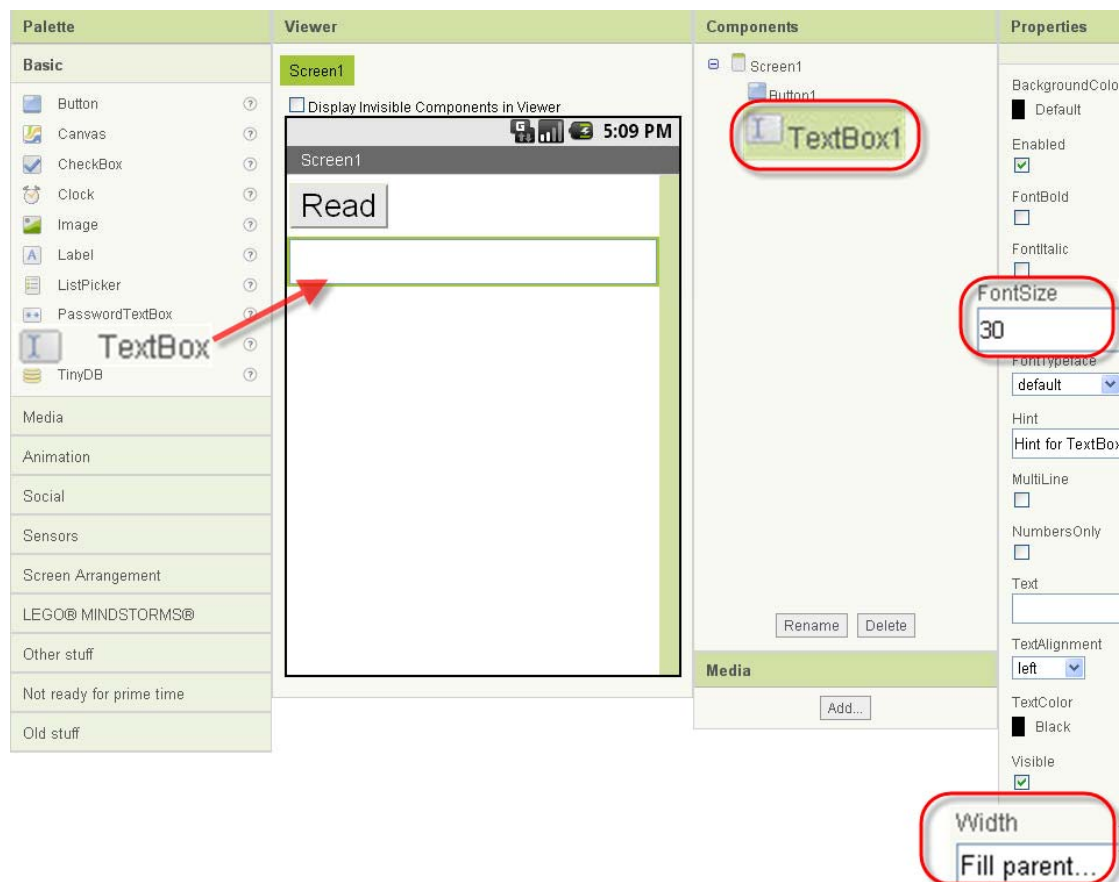


## Step 2: The Designer creates the User Interface

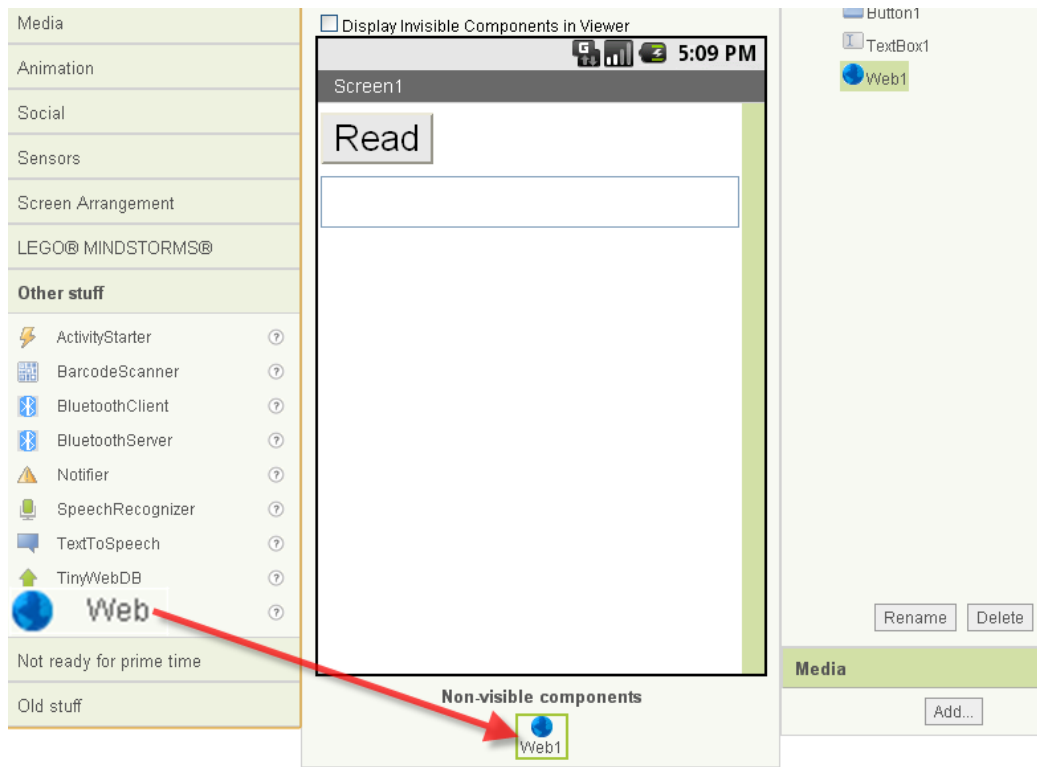
2.1 Select the “Basic” tab, and drag a “Button” component on “Screen1”. Change the button’s font size (30) and text (Read) in the “Properties” panel.



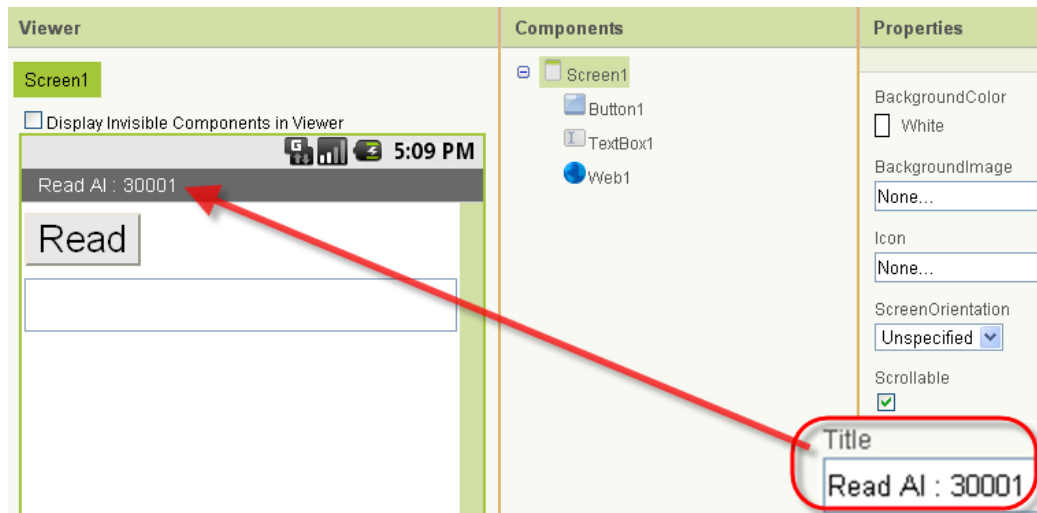
2.2 Repeat the drag-and-drop for the “TextBox”, and change its font size (30) and width (fill parent).



2.3 Select the “Other stuff” tab, and drag a “Web” component on “Screen1”.



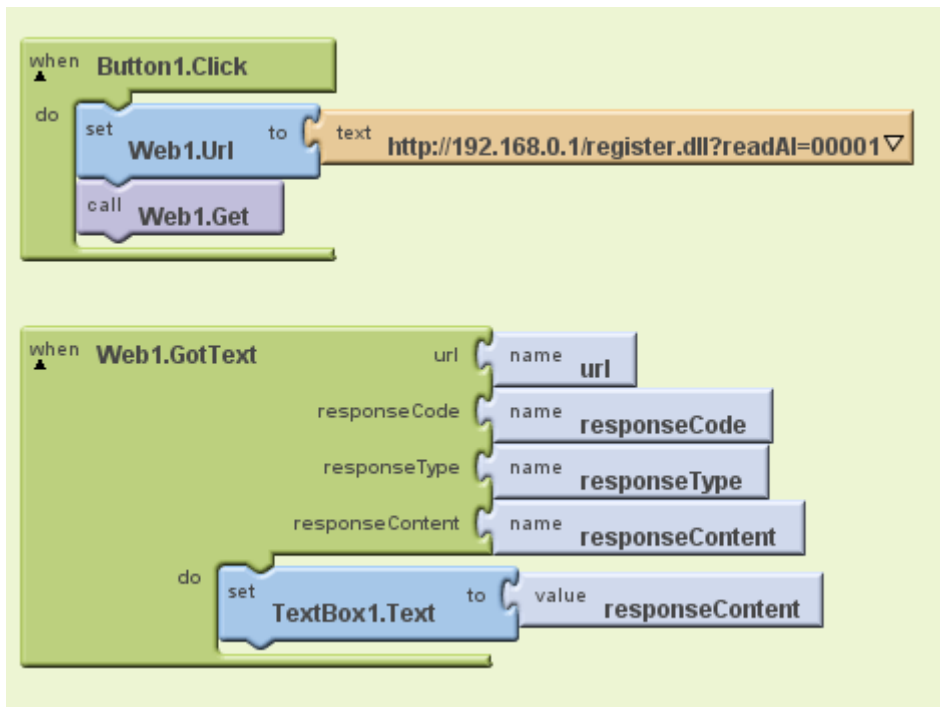
2.4 Change the Screen1's title (Read AI :30001).



### Step 3: The Blocks Editor

3.1 Click on the "Open the Blocks Editor" button to download the "AppInventorForAndroidCodeblocks.jnlp" file, and open it to enter the "Blocks Editor".

3.2 On the "Blocks Editor" window, place your blocks and it should look like the snapshot below.



3.2.1 Block description : When the Button1 is clicked, send a web request to read AI 1 data of eLogger Shared Memory.



**1. My Blocks → Button1 → Button1.Click event block**

Perform the contained actions when the button1 is clicked.

**2. My Blocks → Web1 → set Web1.Url to event block**

Specify the URL to request.

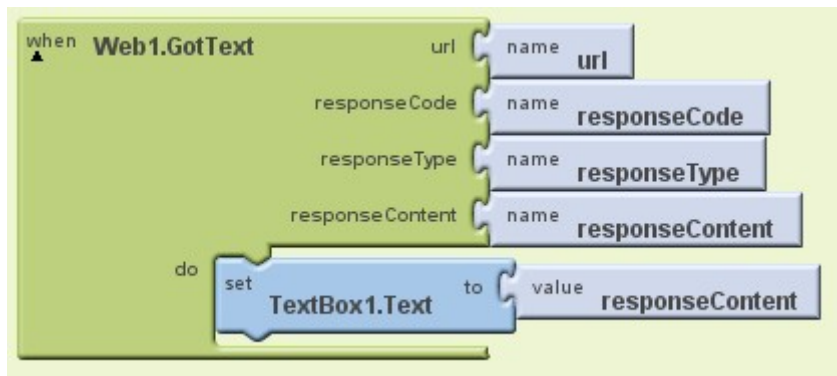
**3. Built-In → Text → text parameter**

The “text” block indicates the URL. Click on “text” of “text” block and change it to <http://192.168.0.1/register.dll?readAI=00001> (the IP address is the PAC’s IP address that you want to connect to.)

**4. My Blocks → Web1 → call Web1.Get command block**

Make the web request.

3.2.2 Block description : When the response to the web request arrives, the Web.GotText event is raised with four parameters. Change the content of “TextBox1” to display the received data which exists in “responseContent” parameter.



**1. My Blocks → Web1 → Web1.GotText event block**

Specify what to do when the reply comes back from the web.

**2. My Blocks → TextBox1 → set TextBox1.Text to event block**

Display the result on the screen.

**3. My Blocks → My Definitions → responseContent value**

The value returned from the web.

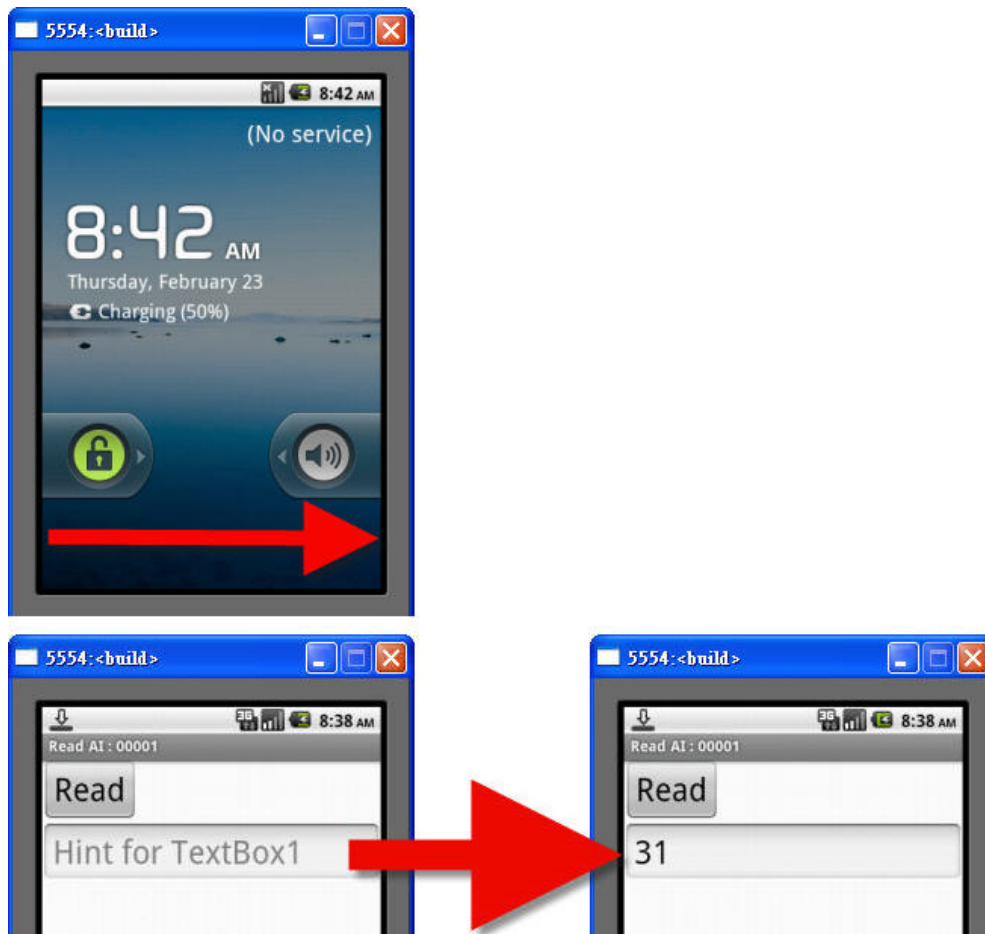
**Step 4:** To see your app in action

4.1 Click on “New emulator” from the Block Editor window and it will launch an emulator for you. (If you have a phone connected, ignore 4.1.)

4.2 Click on “Connect to Device...”, select "Emulator 5554" or your connected device name , and it will load the app on the specified device.



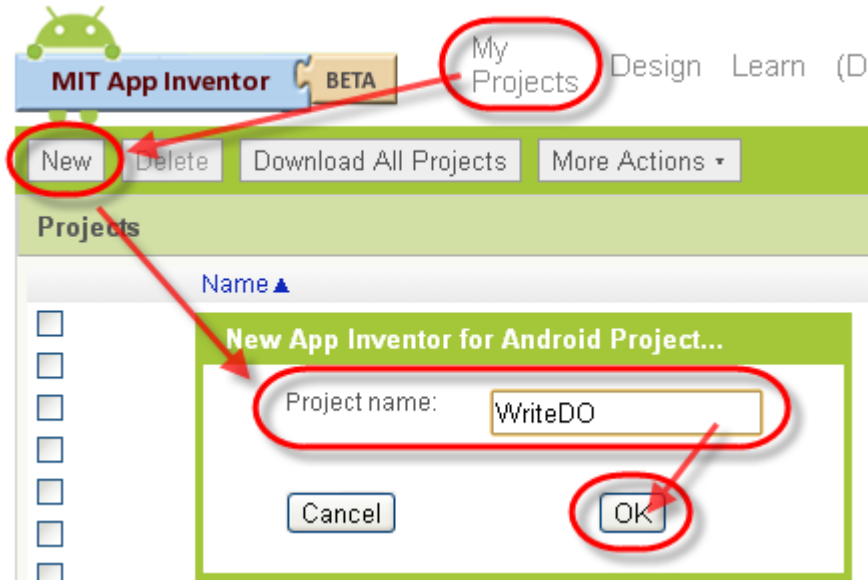
4.3 Unlock the device, and the app will be loaded for a while. Click the “Read” button to read the data from eLogger Shared Memory AI 1.



## Example2 : Write the data to eLogger Shared Memory DO 0

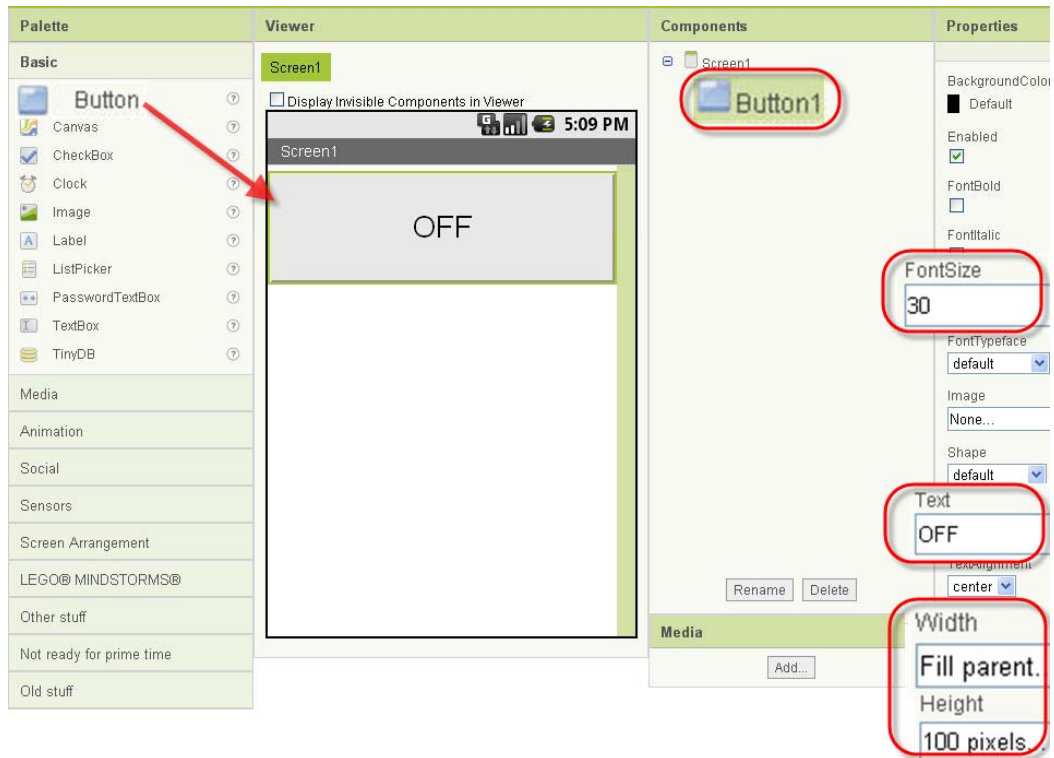
### Step 1: Build a new project

Login Gmail → open [The Designer](#) → move to “My Projects” page and build a new project named “WriteDO”.

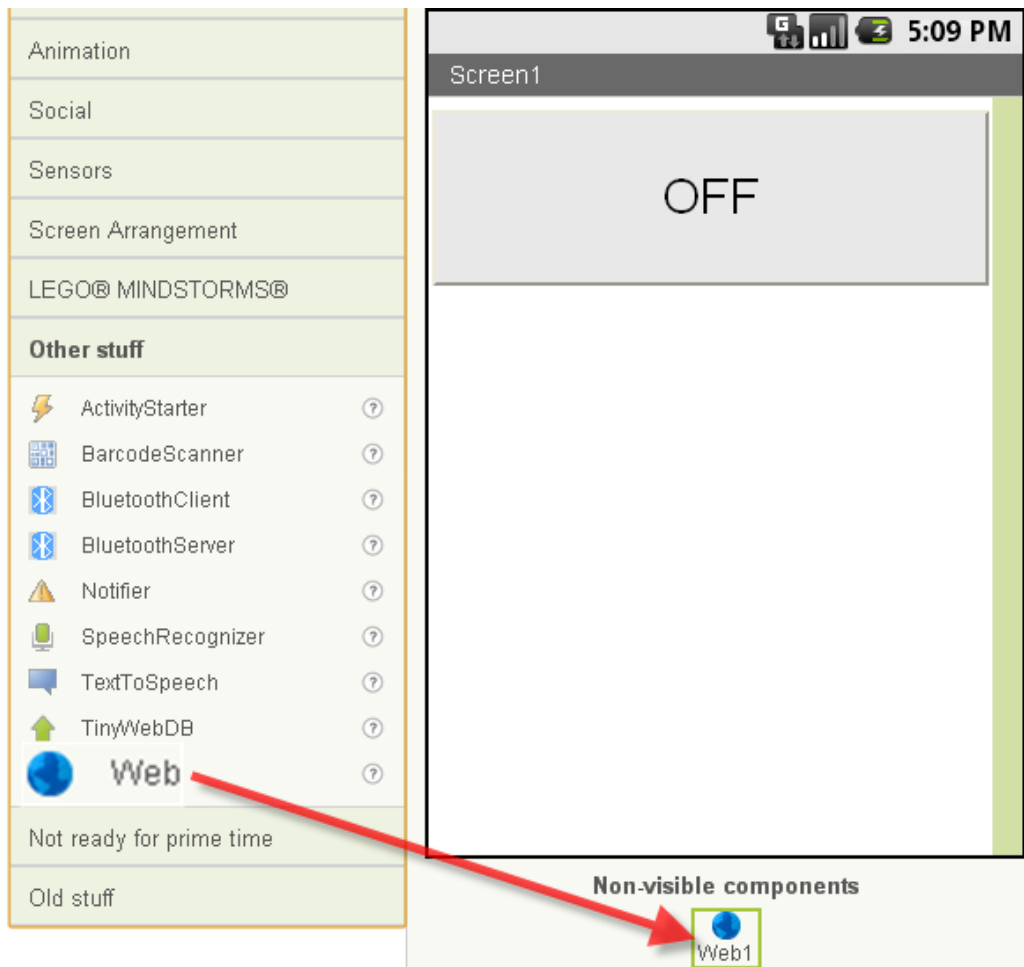


### Step 2: The Designer creates the User Interface

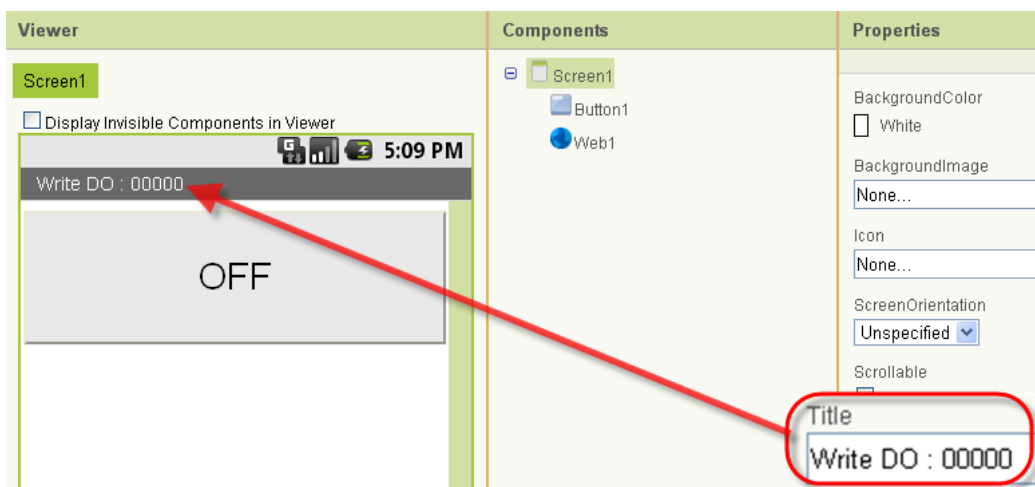
2.1 Select the “Basic” tab, and drag a “Button” component on “Screen1”. Change button’s font size, Width, Height and Text in “Properties” panel.



2.2 Select the “Other stuff” tab, and drag a “Web” component on “Screen1”.



2.3 Change the Screen1's title (Write DO : 00000).

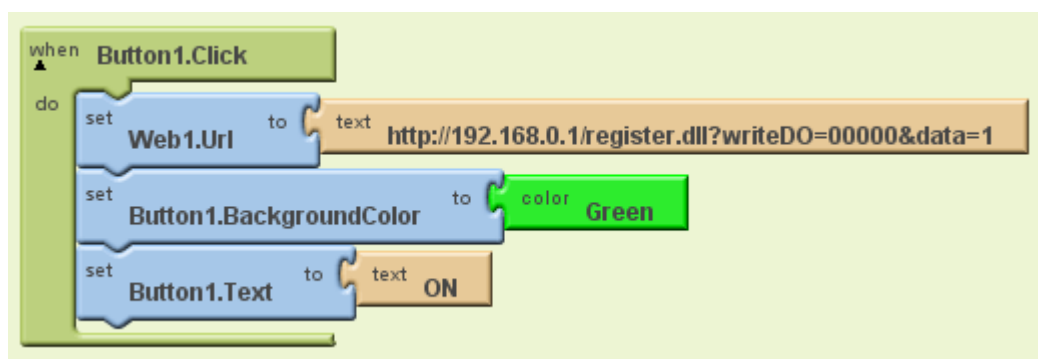




### Step 3: The Blocks Editor

3.1 Click on the "Open the Blocks Editor" button to download the "AppInventorForAndroidCodeblocks.jnlp" file, and open it to enter the "Blocks Editor".

3.2 On the "Blocks Editor" window, place your blocks and it should look like the snapshot below.



3.2.1 Block description : When the Button1 is clicked, send the web request to write data 1 to eLogger Shared Memory DO 0 and change the Button1 's text and background color.

**1. My Blocks → Button1 → Button1.Click event block**

Perform the contained actions when the Button1 is clicked.

**2. My Blocks → Web1 → set Web1.Url event block**

Specify the URL to request.

**3. Built-in → Text → text parameter**

The "text" block indicates the URL. Click on "text" of "text" block and change it to <http://192.168.0.1/register.dll?writeDO=00000&data=1> (the IP address is the PAC's IP address that you want to connect to.)

**4. My Blocks → Button1 → set Button1.BackgroundColor to**

Display the background color of Button1.

**5. Built-in → Colors → color Green value**

Indicate green color.

**6. My Blocks → Button1 --> set Button1.Text to event block**

Set the Button1's display text.

**7. My Blocks → Web1 → Call Web1.Get command block**

Make the web request.

**Step 4:** To see your app in action

4.1 Click on “New emulator” from the Block Editor window and it will launch an emulator for you. (If you have a phone connected, ignore 4.1)

4.2 Click on “Connect to Device...”, select "Emulator 5554" or your connected device name , and it will load the app on the specified device.



4.3 Unlock the device, and the app will be loaded for a while. Click the button to write the data 1 to eLogger Shared Memory DO 0.



## Appendix A. Revision History

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Revision	Date	Description
1.0.1	2012/03/06	Initial issue.
1.0.2	2012/10/29	Add the new function description.