Demo Project for Data Transformation of

Macro

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1 Overview and Operation

[Overview]

This demo project demonstrates how to use Data Transformation Function of Macro to transform data to specified format.

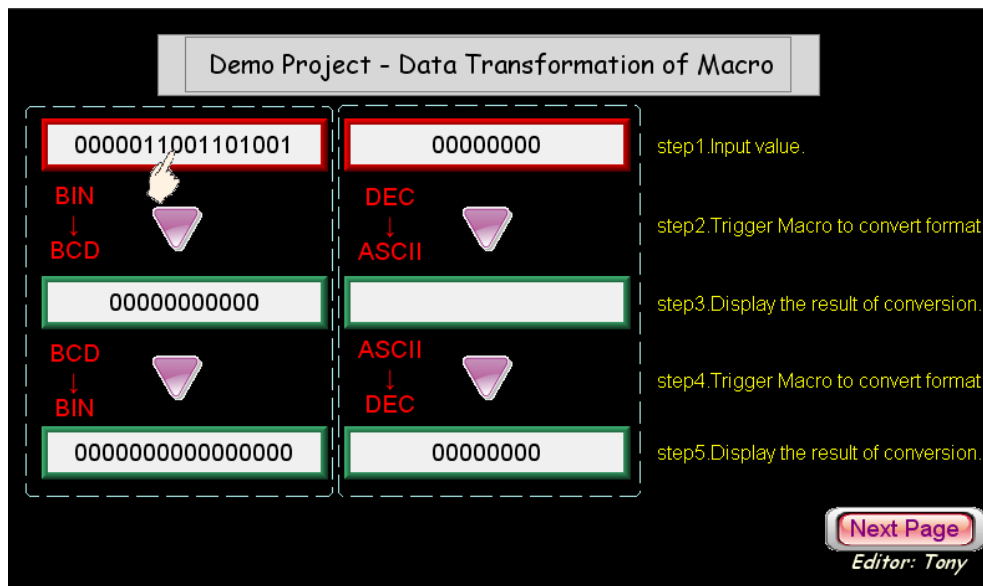|	
Syntax	BIN2BCD(source, result)
Description	Transforms a binary-type value (source) into a BCD-type value (result).
Syntax	BCD2BIN (source, result)
Description	Transforms a BCD-type value (source) into a binary-type value (result).
Syntax	DEC2ASCII(source, result[start], len)
Description	Transforms a decimal value (source) into ASCII string saved to an array (result).
Syntax	ASCII2DEC(source[start], result, len)
Description	Transforms a string (source) into a decimal value saved to a variable (result).
Syntax	HEX2ASCII(source, result[start], len)
Description	Transforms a hexadecimal value (source) into ASCII string saved to an array (result).
Syntax	ASCII2HEX (source[start], result, len)
Description	Transforms a string (source) into a hexadecimal value saved to a variable (result).
Syntax	FLOAT2ASCII (source, result[start], len)
Description	Transforms a floating value (source) into ASCII string saved to an array (result).
Syntax	ASCII2FLOAT (source[start], result, len)
Description	Transforms a string (source) into a float value saved to a variable (result).

[Operation]

There are 4 main modes in this demo project.

(1) BIN→BCD→BIN

(2) DEC→ASCII→DEC

(3) HEX→ASCII→HEX

(4) FLOAT→ASCII→FLOAT

BIN: binary-type value ; BCD: BCD-type value ; DEC: decimal value
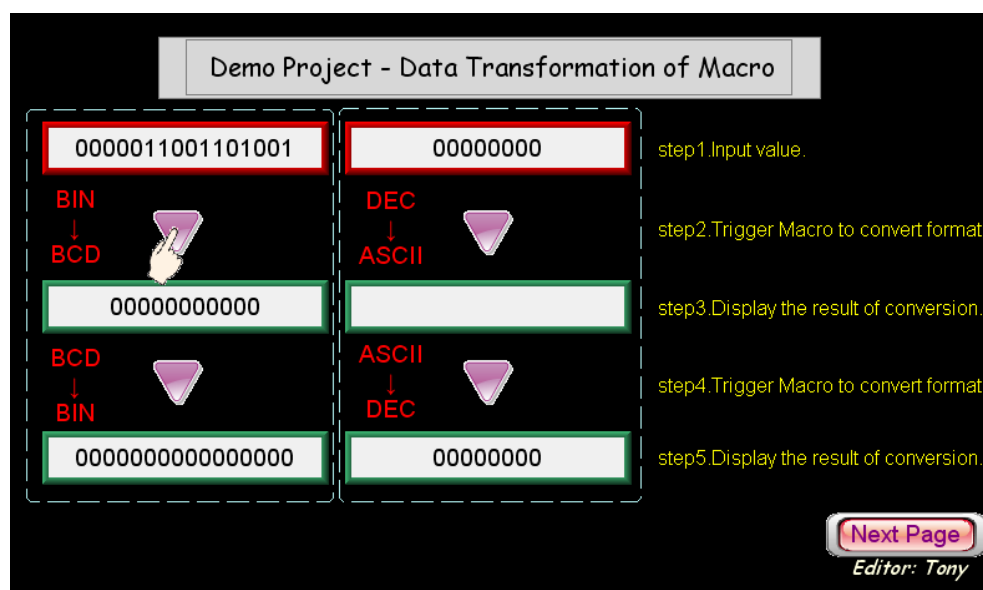
HEX: hexadecimal value ; FLOAT: floating value; ASCII: string

The demonstration of mode BIN→BCD→BIN is shown below. The other modes are operated in the same way as shown in Steps 1~5.
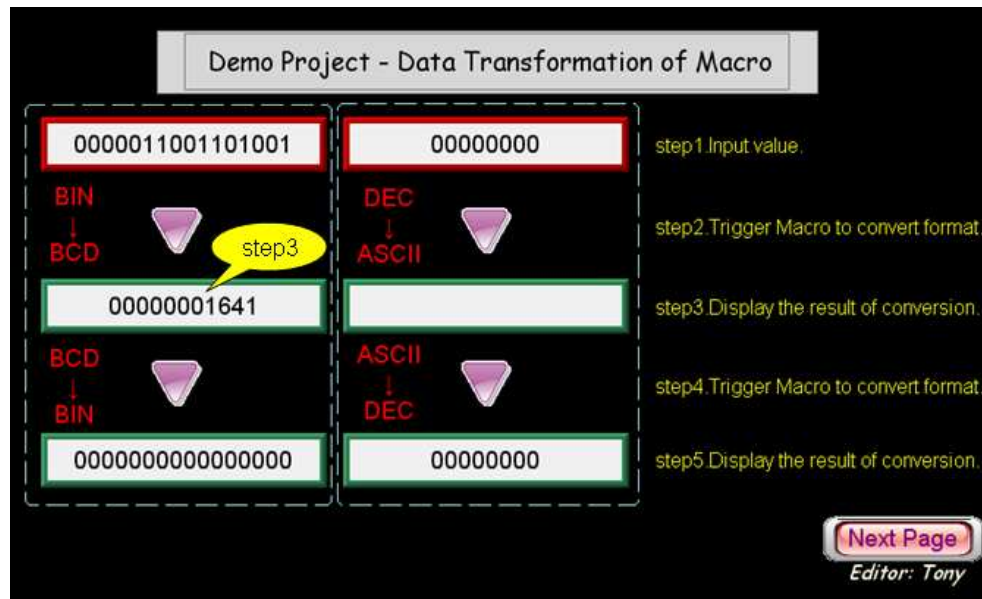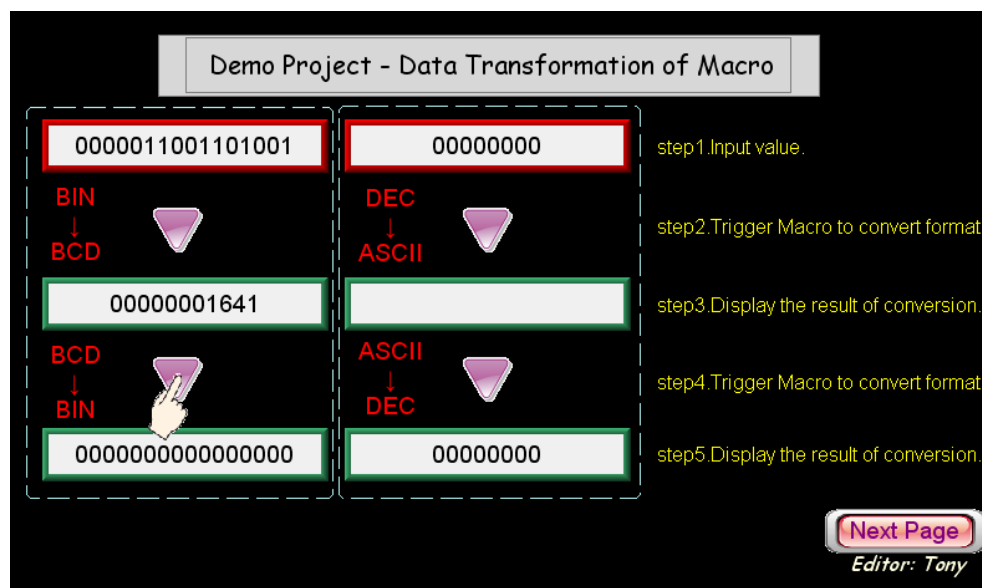
Step1. Input value.

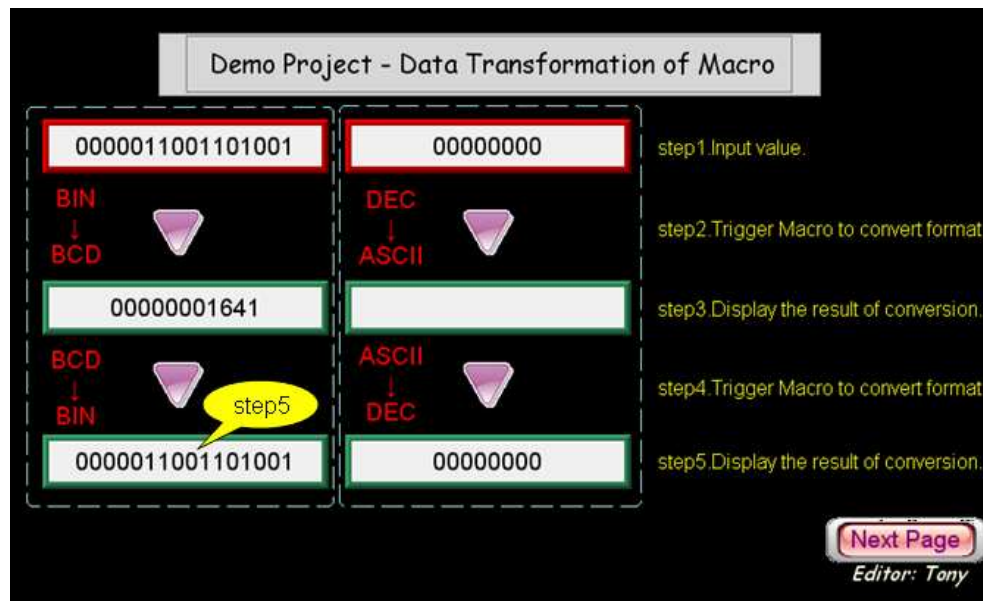Step2. Trigger Macro to convert format.

Step3. Display the result of conversion.
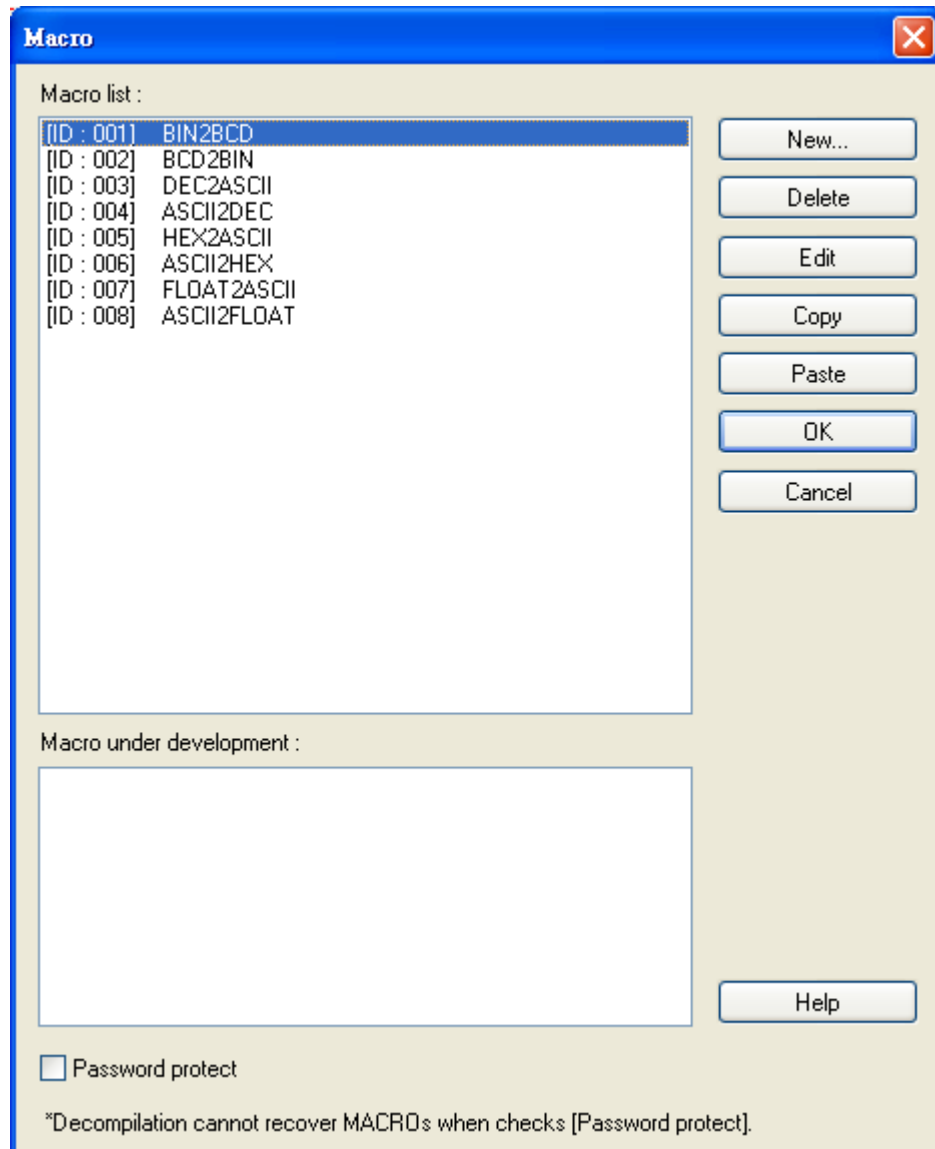

Step4. Trigger Macro to convert format.

Step5. Display the result of conversion.

2   Setting Up the Screen

2-1 Edit the Mathematical Functions of Macro.

[ID:001]BIN2BCD:

```
 1
 2
 3    macro_command main()
 4
 5    short source,result
 6    GetData(source,"Local HMI",LW,0,1)
 7    BIN2BCD(source,result)
 8    SetData(result,"Local HMI",LW,1,1)
 9
10    end macro_command
11
```

[ID:002]BCD2BIN:

```
1
2
3    macro_command main()
4
5    short source,result
6    GetData(source,"Local HMI",LW,1,1)
7    BCD2BIN(source,result)
8    SetData(result,"Local HMI",LW,2,1)
9
10   end macro_command
11
```

[ID:003]DEC2ASCII:

```
1
2
3    macro_command main()
4
5    int source
6    char result[8]
7    GetData(source,"Local HMI",LW,3,1)
8    DEC2ASCII(source, result[0],8)
9    SetData(result[0],"Local HMI",LW,5,8)
10
11   end macro_command
12
```

[ID:004]ASCII2DEC:

```
1
2
3    macro_command main()
4
5    char source[8]
6    int result
7    GetData(source[0],"Local HMI",LW,5,8)
8    ASCII2DEC(source[0], result,8)
9    SetData(result,"Local HMI",LW,13,1)
10
11   end macro_command
12
```

[ID:005]HEX2ASCII:

```
1
2
3    macro_command main()
4
5    int source
6    char result[8]
7    GetData(source,"Local HMI",LW,15,1)
8    HEX2ASCII(source, result[0],8)
9    SetData(result[0],"Local HMI",LW,17,8)
10
11   end macro_command
12
```

[ID:006]ASCII2HEX:

```
1
2
3    macro_command main()
4
5    char source[8]
6    int result
7    GetData(source[0],"Local HMI",LW,17,8)
8    ASCII2HEX(source[0], result,8)
9    SetData(result,"Local HMI",LW,25,1)
10
11   end macro_command
12
```

[ID:007]FLOAT2ASCII:

```
1
2
3    macro_command main()
4
5    float source
6    char result[8]
7    GetData(source,"Local HMI",LW,27,1)
8    FLOAT2ASCII(source, result[0],8)
9    SetData(result[0],"Local HMI",LW,29,8)
10
11   end macro_command
```
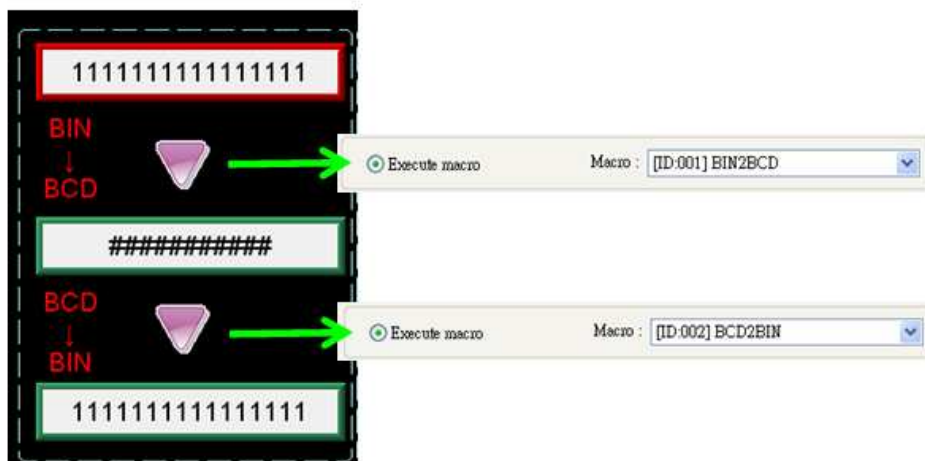
[ID:008]ASCII2FLOAT:

```
1
2
3    macro_command main()
4
5    char source[8]
6    float result
7    GetData(source[0],"Local HMI",LW,29,8)
8    ASCII2FLOAT(source[0], result,8)
9    SetData(result,"Local HMI",LW,37,1)
10
11   end macro_command
```

2-2 Create Function Keys to trigger Macro.

3 Addresses

The Object Addresses used in this demo project are listed below: Users can change Addresses and Object ID base on actual usage.

Addresses		Object ID	Detail
Window 10			
ASCII Input	LW5~12	AE_0	Display the string
Numeric Input	LW0	NE_0	Input the binary-type value
	LW1	NE_1	Display the BCD-type value
	LW2	NE_2	Display the binary-type value
	LW3	NE_3	Input the decimal value
	LW13	NE_4	Display the decimal value
Function Key		FK_0	Change full-screen window to 11
		FK_1	To trigger macro (BIN→BCD)
		FK_2	To trigger macro (BCD→BIN)
		FK_3	To trigger macro (DEC→ASCII)
		FK_4	To trigger macro (ASCII→DEC)
Window 11			
ASCII Input	LW17~24	AE_0	Display the string
	LW29~36	AE_1	Display the string
Numeric Input	LW15	NE_0	Input the hexadecimal value
	LW25	NE_1	Display the hexadecimal value
	LW27	NE_2	Input the floating value
	LW37	NE_3	Display the floating value
Function Key		FK_1	To trigger macro (HEX→ASCII)
		FK_2	To trigger macro (ASCII→HEX)
		FK_3	To trigger macro (FLOAT→ASCII)
		FK_4	To trigger macro (ASCII→FLOAT)
		FK_5	Change full-screen window to 10