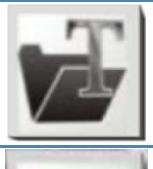
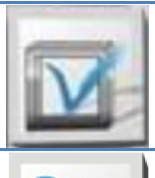
Classification	☐ tDS ☐ tGW ☐ PETL/tET/tPET ☐ DS/PDS/PPDS ☐ tM-752N ☐ I/O Card ☐ VXC Card ☐ VxComm ☑ Other (TouchPAD)				
Author	Mike Chou	**Date**	2020-09-23	**NO.**	FAQ043

Q: How to conveniently operate the HMIWorks widgets which have the same function?

A:

In some applications, the widgets which have the same function simultaneously need to be set, display text, change color or change value, etc. Some commonly used widgets can use the specific structure to array the same widgets in “Standard C” mode.

The structure comparison table of the commonly used widgets

Widget		Declare Structure
	**Label**	**tLabel**
	**CheckBox**	**tCheckBox**
	**Bitbutton**	**tBitbutton**
	**TextPushButton**	**tTextButton**
	**HotSpot**	**tHotSpot**

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Example - Bitbutton

In some applications, buttons only can be turned on or off in the specific situation. For example, the switches of the dangerous equipment only can be turned on when the security check is passing.

Supposed the switches of the dangerous equipment are controlled by Bitbutton10, Bitbutton20, Bitbutton30, Bitbutton40, Bitbutton50 respectively. The below code uses the Timer to execute security check periodically, it ensure that the switches of the equipment only can be turned on in the safe situation.

```
tBitButton *BitButton_Array[5]={&BitButton10, &BitButton20, &BitButton30, &BitButton40, &BitButton50};

void Timer29OnExecute(tWidget *pWidget)
{
	if(Security_check) //Design Security_check by yourself
	{
		for(int i = 0 ; i < 5 ; i++)
		{
			BitbuttonEnabledSet(BitButton_Array[i], true);
		}
	}
	else
	{
		for(int i = 0 ; i < 5 ; i++)
		{
			BitbuttonEnabledSet(BitButton_Array[i], false);
		}
	}
}
```

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Example - CheckBox

This example uses the binary representation to display the decimal data. Each light represents a bit respectively.

1. Use an “ObjectList” widget and “CheckBox5, 6, 7, 8” widgets represent the binary lights, i.e., Bit 0, 1, 2, and 3, respectively.



2. Create a “Timer” and use below code to display the decimal value 0-15 sequentially.

```
tCheckBox *CheckBox_Array[4] = {&CheckBox5, &CheckBox6, &CheckBox7, &CheckBox8};

int counter=0;

void Timer13OnExecute(tWidget *pWidget)
{
        counter++;
        if(counter > 15)counter = 0;
        int temp = counter;
        for(int j = 0 ; j < 4 ; j++)
        {
                CheckBoxSelectedSet(CheckBox_Array[j], (temp & 0x1));
                temp = temp >> 1;
        }
}
```

Please download the “Demo – PassWord” on the official website to learn more concrete. This demo use the “tTextButton” structure to array plural “TextPushButton” widget.

TouchPAD - HMIWorks Demo Page:
http://www.icpdas.com/en/download/show.php?num=1000&root=&model=&kw=HMIWorks

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