



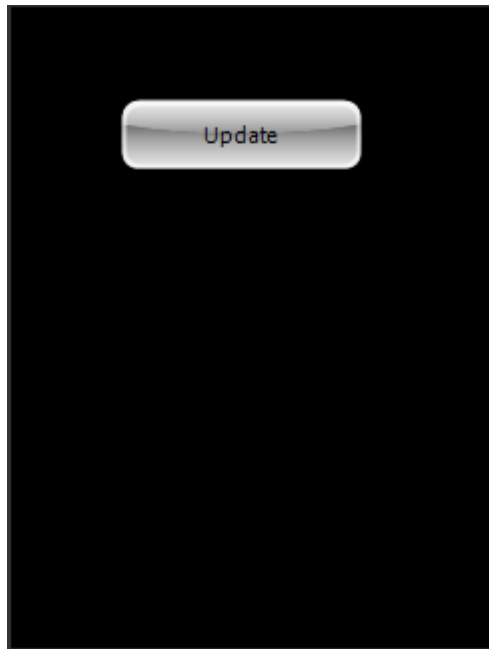
ViSi Genie Magic Main Loop Counter

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Description

This application note primarily shows how to add a counter in the main loop and print it using Magic Objects.. The Magic Code and Event is under the Genie Magic pane in Workshop 4 Pro. In this application it contains a 4DGL code that adds a counter in the main loop and then prints if a button is pressed.



Note 1:The ViSi-Genie project for this application note is the demo “MainLoopCounter”, which is found in Workshop. Go to the File menu -> Samples ->ViSi Genie Magic (Picaso/Diablo16) ->MainLoopCounter.4DGenie.

Note 2: Workshop Pro is needed for this application.

Before getting started, the following are required:

- Any of the following 4D Picaso display modules:

[uLCD-24PTU](#)
[gen4-uLCD-24PT](#)

[uLCD-28PTU](#)
[gen4-uLCD-28PT](#)

[uVGA-III](#)
[gen4-uLCD-32PT](#)

and other superseded modules which support the ViSi Genie environment.

- The target module can also be a Diablo16 display

[gen4-uLCD-24D](#)
[Series](#)

[gen4-uLCD-28D](#)
[Series](#)

[gen4-uLCD-32D](#)
[Series](#)

[gen4-uLCD-35D](#)
[Series](#)

[gen4-uLCD-43D](#)
[Series](#)

[gen4-uLCD-50D](#)
[Series](#)

[gen4-uLCD-70D](#)
[Series](#)

[uLCD-35DT](#)

[uLCD-43D Series](#)

[uLCD-70DT](#)

Visit www.4dsystems.com.au/products to see the latest display module products that use the Diablo16 processor.

- [4D Programming Cable](#) / [µUSB-PA5/µUSB-PA5-II](#) for non-gen4 displays (uLCD-xxx)
- [4D Programming Cable](#) & [gen4-IB](#) / [gen4-PA](#) / [4D-UPA](#), for gen-4 displays (gen4-uLCD-xxx)

- [micro-SD \(μSD\)](#) memory card
- [Workshop 4 IDE](#) (installed according to the installation document)
- When downloading an application note, a list of recommended application notes is shown. It is assumed that the user has read or has a working knowledge of the topics presented in these recommended application notes.

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Application Overview

The application presented in this document primarily shows a loop counter if a button is pressed. In the past this was not possible but through the use of magic objects this can be done now. The Magic Event object and Magic Code object was used here.

Setup Procedure

For instructions on how to launch Workshop 4, how to open a ViSi-Genie project, and how to change the target display, kindly refer to the section “**Setup Procedure**” of the application note:

[ViSi Genie Getting Started – First Project for Picaso Displays](#) (for Picaso)

or

[ViSi Genie Getting Started – First Project for Diablo16 Displays](#) (for Diablo16).

Create a New Project

Create a New Project

For instructions on how to create a new ViSi-Genie project, please refer to the section “**Create a New Project**” of the application note

[ViSi Genie Getting Started – First Project for Picaso Displays](#) (for Picaso)

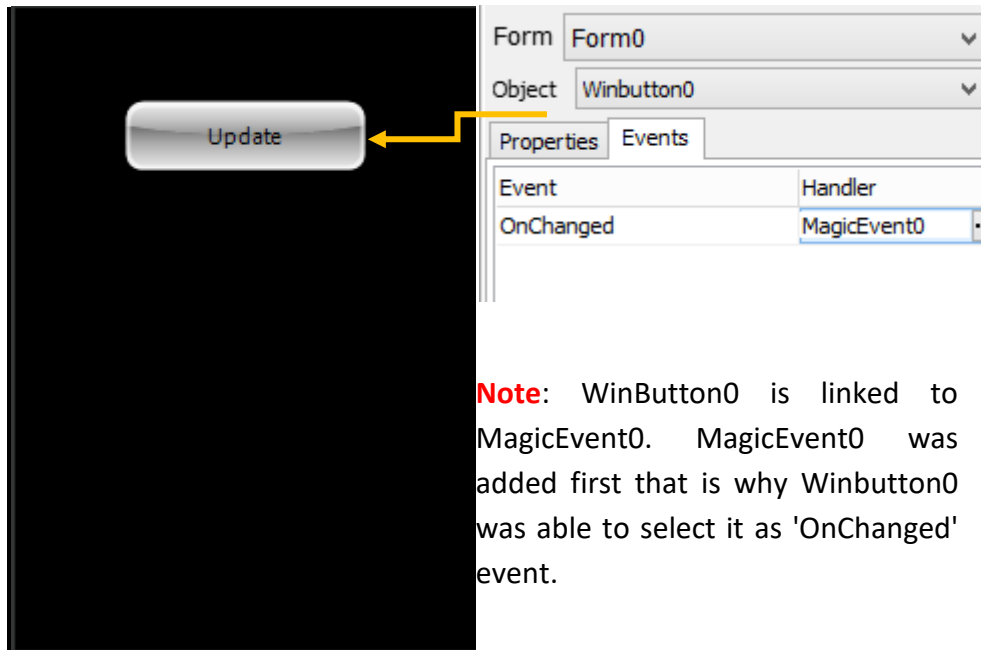
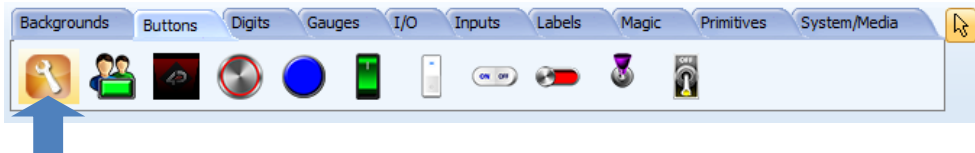
or

[ViSi Genie Getting Started – First Project for Diablo16 Displays](#) (for Diablo16)

Design the Project

Add Winbutton0

A Fancy Button object is added to Form0. This is **Winbutton0**.

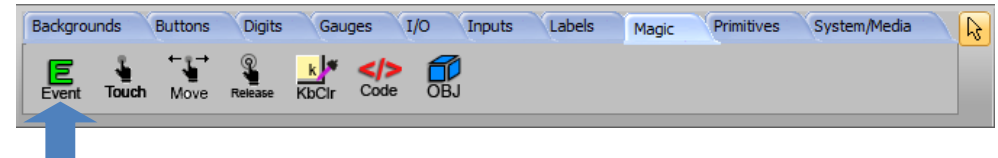


Note: WinButton0 is linked to MagicEvent0. MagicEvent0 was added first that is why Winbutton0 was able to select it as 'OnChanged' event.

To know more about button objects, their properties, and how they are added to a project, refer to the application note [ViSi-Genie Advanced Buttons](#).

Add Magic Event

A Magic Event is added to Form0. This is **MagicEvent0**.



Magic Event Properties:

Properties		Events
Property	Value	
Name	MagicEvent0	
Alias	Button Click	
Code	MagicEvent0.inc	

Events are usually triggered when input objects such as winbutton objects on the display are pressed.

```

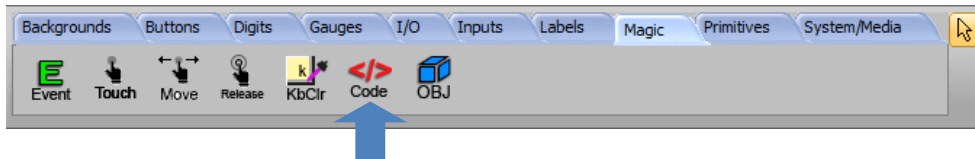
3 //
4 var mainloopcount[2] ;
5
6 func MagicEvent0(var newval)
7     var i ;
8     i := str_Ptr(mainloopcount) ;
9     str_Printf(&i, "%91u");
10    print("\r") ;
11 endfunc

```

The code above prints the content of mainloopcount array if Winbutton0 is pressed.

Add Magic Code

A Magic Code is added to Form0. This is **MagicCode0**.



Magic Code Properties:

Properties	
Property	Value
Name	MagicCode0
Alias	Main Loop Code
Code	MagicCode0.inc
InsertPoint	MainLoop

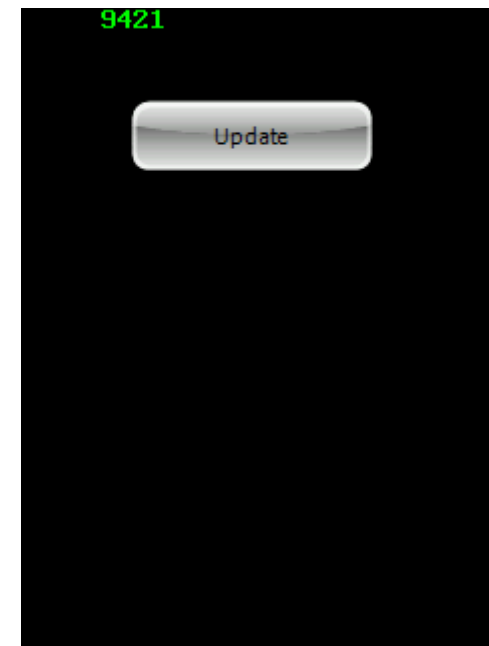
A Magic Code object allows the user to insert custom 4DGL code into specific locations inside the Genie project. For example, a counter variable can be declared and initialized in a Magic Code object inserted to the location “**Constant/Global/Data**”. This variable can then be accessed and used by another Magic Code object inserted at the location “**MainLoop**”.

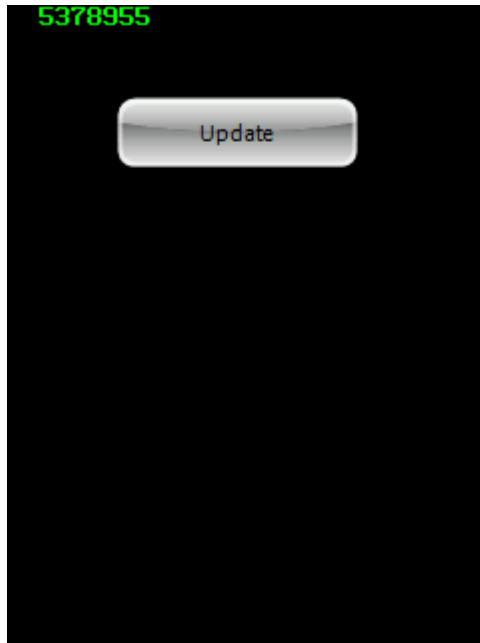
```

4 // MagicCode0
5 //
6     if (!(++mainloopcount[0])) mainloopcount[1]++;
7
  
```

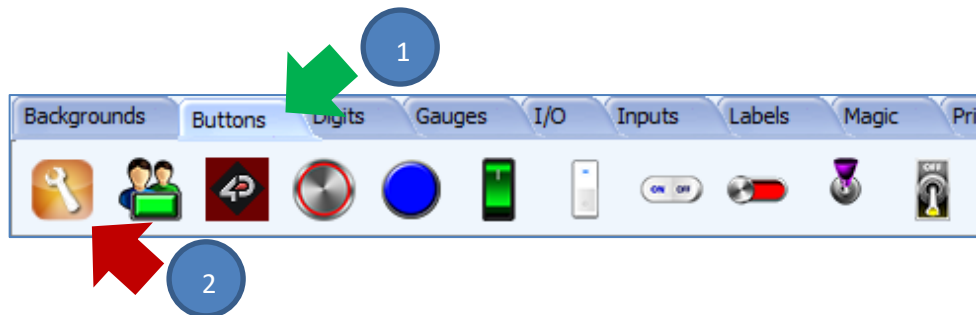
The content of MagicCode0 is shown in the image above. This simply increments the content of mainloopcount[0] and increments mainloopcount[1] if ++mainloopcount[0] is equal to 0.

Sample Output:





To know more about adding Magic Events and Magic Code refer to the application note [ViSi-Genie How to Add Magic Objects](#)



Build and Upload the Project

For instructions on how to build and upload a ViSi-Genie project to the target display, please refer to the section “**Build and Upload the Project**” of the application note

[ViSi Genie Getting Started – First Project for Picaso Displays](#) (for Picaso)

or

[ViSi Genie Getting Started – First Project for Diablo16 Displays](#) (for Diablo16).

The uLCD-32PTU and/or the uLCD-35DT display modules are commonly used as examples, but the procedure is the same for other displays.

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