

## # 78 Extracting Booleans from Integers

Written by Dave Dell'Aquila

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This tech note describes how to derive the booleans which created an integer.

It may be necessary to store the value of several booleans as a single integer, and be able to go backwards and tell which booleans created the integer. Following is a brief algorithm which accomplishes this quickly and efficiently. Suppose you have 7 check boxes, one for each potential font style. You've numbered the check boxes as follows:

<u>Variable Name</u>	<u>Button Text</u>	<u>Style Number</u>
cb0	Bold	1
cb1	Italic	2
cb2	Underline	4
cb3	Outline	8
cb4	Shadow	16
cb5	Condensed	32
cb6	Extended	64

By multiplying the check box value (0 or 1) by the style number, then adding the results for all the check boxes, we can obtain an integer representing the combination of checked check boxes. This would be obtained with the following line of code:

```
xStyle:=cb0+(cb1*2)+(cb2*4)+(cb3*8)+(cb4*16)+(cb5*32)+(cb6*64)
```

Once you have calculated the xStyle variable, you can then store it in a field, or whatever you wish. Of course, you need to be able to restore the proper check boxes. The following code will activate the same check boxes that were checked in order to create the integer contained in xStyle.

```
$i:=7
While ($i>0)
  $i:=$i-1
  If ((2^$i)<=xStyle)
    xStyle:=xStyle-(2^$i)
    cb{$i}:=1
  End if
End while
```

This code would typically be placed in a Before phase of a layout procedure, so that the formatting for a particular variable would be set up prior to displaying it. You must zero all check boxes if you don't use the above restore procedure in a Before phase. Note, however, that 4th Dimension will zero all button variables in a layout whenever a new layout is opened.

