
REGCODE 2.0

Registration Software for Shareware Authors

Windows Version 2.0

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1. DESCRIPTION

RegCode 2.0 is a dynamic link library module intended for use as a registration module for shareware authors of Windows software. There are two main inputs to RegCode. The first is an integer of up to nine digits intended as a product number or author's key. The second is a string of up to 40 characters intended to be an end-user identifier (user name). RegCode outputs a nine-digit integer intended for use as a product registration code. Authors may use different keys in many ways, for example, for different products, different releases of the same product, customer numbers, etc..

RegCode employs a set of non-linear equations, a "chaos machine", to scramble the input data. These equations exhibit the "sensitivity to initial conditions" property that characterizes chaotic systems, and consequently have the ability to convert very similar input strings and/or keys to very different output numbers, making deciphering the algorithm difficult.

Regcode is actually a random number generator that uses two seeds instead of one. Sequences of random numbers may be generated using repeated calls to regcode, where the output

string from one call is converted to the input code for the next. Such sequences have been generated and investigated for their random properties; results are available from Haiku Laboratories.

RegCode 2.0 provides a reasonable level of security for shareware authors. Using so-called "brute force", a program may be written to test all possible codes. For a given user-name, 10^{18} calls to RegCode are needed to ensure that both the author's code and the registration code will be found. At 20 msec per call, this would take on the order of 10^9 years; an impossible task. However, if the author's code number is compromised, or if the algorithm is compromised, this reduces to about one year. Still a very difficult task and not likely in view of the reward: the registration fee. Of course, if both the algorithm and the author's key are compromised, then RegCode is also compromised.

An un-registered version of RegCode 2.0 displays a copyright notice the first time it is called. Upon registering, the shareware author receives a product code number to be supplied to RegCode at compile time as a third input parameter. This makes the copyright notice disappear.

A Dos version, RegCode 1.0, is available as an object module in the CompuServe ASPforum software library. A 32-bit version of RegCode is available from Haiku Laboratories.

2. INSTALLATION

File regcode.zip contains the following files:

1. regcode.dll - a dynamic link library containing the regcode.c module.
2. regcode.h - a file of headers for C, C++ and Visual basic programs
3. regdemo.exe - a Visual Basic program that demonstrates how to call Regcode 2.0. It may also be used by shareware authors to determine user-codes for their customers.
4. test.frm - the Visual Basic form used by regdemo
5. regcode2.wri - (this file)

These files may be installed on a hard or floppy disk by unzipping to the appropriate locations.

3. USING REGCODE 2.0

Source code for Regcode 2.0, `regcode.c`, was written in Ansi C. The `regcode` library module may be called from C, C++ or Visual Basic programs, among others. Headers for these three programs are contained in the file `regcode.h`, and discussed in this section.

If you are calling `RegCode` from a C program, use the following prototype:

```
int regcode( char *instring, double incode,
            char *outcode, long RegCodecode )
```

An input string containing the user's name is passed in `instring` (only the first 40 characters are used). The author's code is passed in `incode` and may be any non-negative double precision value, although only the first 9 digits of the integer part are used. `Regcode`'s return value is zero if it successfully calculates an output code, 1 if `instring` is null and 2 if `incode` is negative. If `instring` is not null and `incode` is non-negative, `RegCode` returns a nine character registration code in the string `outcode`.

`RegCodecode` is a long integer used to register `RegCode 2.0`. Any long integer value may be passed in `RegCodecode`, but only one value will turn off the copyright notice. This value is supplied when `RegCode` is registered.

If you are calling `RegCode` from a C++ program, include the following code:

```
#include <windows.h>

#ifdef __regcode_h
#define __regcode_h

#ifdef __cplusplus
extern "C" {
#endif

int _pascal regcode( LPSTR in_string, double incode,
                    LPSTR outcode, LONG regcodecode );
```

```
#ifdef __cplusplus
} // extern "C"
#endif
```

```
#endif // __regcode_h
```

The RegCode library module may also be called by a Visual Basic program. Shown below is the complete source code in Basic for program regdemo.exe which calls RegCode. The path specified in the Declare statement must be modified to suit your path. (The Declare statement must appear on a single line.)

```
Declare Function regcode Lib "c:\vb\regdemo\regcode.dll"
    ( ByVal ustring As String,
      ByVal incode As Double,
      ByVal outcode As String,
      ByVal RegCodecode As Long )    As Integer
```

```
    Dim x As Integer
    Dim incode As Double
    Dim outcode As String * 16
    Dim ustring As String
    Dim RegCodecode As Long
```

```
Sub Command1_Click ()
    x = 0
    RegCodecode = 1
    If ustring = "" Then ustring = " "
    If incode < 0 Then incode = 0

    x = regcode( ustring, incode, outcode, RegCodecode )
    If x = 0 Then
        Text3.Text = outcode
    Else
        Text3.Text = "Fatal error in regcode.c"
    End If
End Sub
```

```
Sub Command2_Click ()
    End
End Sub
```

```
Sub Text1_Change ()
    incode = Val(Text1.Text)
End Sub
```

```
Sub Text2_Change ()
    ustring = Text2.Text
End Sub
```

4. USING REGDEMO

To execute regdemo you must have the Visual Basic run-time library vbrun300.dll in the current path (usually \windows). This file may be downloaded from Library 1 of the Compuserve Winshare forum as VBRUN3.ZIP. To execute regdemo, from Windows Program Manager choose File|Run and enter the path and name, or click on regdemo.exe in the File Manager, or install regdemo as an icon and double-click. The regdemo form consists of two input text boxes, an output text box and two buttons. Enter a numeric value in the box marked "Product Code", enter a string in the box marked "User Name" and click on the 'REGCODE' button to calculate a "Registration Code" in the third text box. Try changing the product code and note how the output changes. A small difference in product code or user-name should result in large differences between user-codes. Regdemo may be used to as-is by shareware authors to determine registration codes for their customers. To exit regdemo click on the 'Quit' button.

5. LICENSE

This product is shareware. You may test it for free, but if you include it in any of your products, you must register it with Haiku Laboratories as described below. You may then link it with all of your software products. You may not distribute it to any other authors; only the un-registered version can (and should) be freely distributed.

6. REGISTRATION

RegCode 2.0 may be registered through Compuserve by GOing SWREG (Product Number: 8247), or by email or postal mail by contacting Haiku Laboratories at one of the addresses rbelow. In either case, you will be sent a product code number by email to register your copy, as described in Section 4 above. An un-registered copy of RegCode 2.0 displays a dialog box containing a copyright notice the first time it is called.

Please register if you use the product; registering supports the shareware system, including its authors. RegCode 2.0 is \$20.00.

7. SUPPORT

We may be reached by postal mail at:

Haiku Laboratories
P.O. Box 159
Pukalani, HI 96788

or on CompuServe at: 72530,1627

or on the Internet at: 72530.1627@compuserve.com

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