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OcrHex - bin to hex converter (OCR-friendly alphabet, CRC32 for every row)

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OcrHex ALPHABET (0..F): #3479FGHLNSTXZ; '>' - space symbol.

Recommended font: 'Consolas', 9 pt.

Recommended OCR: 'FreeOCR', grayscale mode.

To repair damaged sector in text data, firstly find it on paper (by dec number).

Following symbol's replacement is done automatically:

'B' => '3' ')' => '>' '5' => 'S' 'Q' => '9' '2' => 'Z' '6' => 'G'

Sector hexadecimal form:

<0000>11112222>33333333>... ...>33333333>44444444>

0 - sector number (dec, big-endian);

1 - sector number, uint16 (hex, little-endian);

2 - payload size in bytes, uint16 (hex, little-endian);

3 - payload (hex), 4 bytes (hex, little-endian);

4 - CRC32 of 1..3 byte data, decoded from hex (without spaces!), uint32 (hex).

''' <summary>

''' CRC32 - WinZip, WinRAR, 7-Zip...

''' </summary>

Public Module CRC32

Public Function Process(data As IEnumerable(Of Byte)) As Byte()

Return Process(data, data.Count)

End Function

Public Function Process(data As IEnumerable(Of Byte), count As Integer) As Byte()

Dim i, j As Integer

Dim b, mask, crc32 As UInteger

crc32 = &HFFFFFFFFUI

For i = 0 To count - 1

b = data(i)

crc32 = crc32 Xor b

For j = 7 To 0 Step -1

mask = If(crc32 And 1, &HFFFFFFFFUI, 0)

crc32 = (crc32 >> 1) Xor (&HEDB88320UI And mask)

Next

Next

crc32 = Not crc32

Dim crc32b = New Byte((4) - 1) {}

crc32b(0) = CByte((crc32 And &HFF) >> 0)

crc32b(1) = CByte((crc32 And &HFF00) >> 8)

crc32b(2) = CByte((crc32 And &HFF0000) >> 16)

crc32b(3) = CByte((crc32 And &HFF000000UI) >> 24)

Return crc32b

End Function

End Module

CRC32 test (ASCII): 'The quick brown fox jumps over the lazy dog' - 414FA339