

## DecToBin\$ function

Simple function with (very) simple demo program illustrating how to build a string containing the binary representation of a decimal number with digit grouping.

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- Not too much explanation really necessary on this one. The function takes an integer argument and uses a DO...LOOP structure to repeatedly perform a logical AND operation on that argument and each sequential exponentiation of 2 until that exponentiation is greater than the original number. If the function is fed anything other than a nonzero integer value, it returns "0". I was fairly surprised at the speed of this function. Try entering a 50 or 60 digit number at the prompt.

```
[loop]
  input a$
  if a$ = "" then end
  print DecToBin$(val(a$))
  goto [loop]

function DecToBin$(decNum)
  if ((decNum <> 0) and (decNum = int(decNum))) then
    decNum = abs(decNum)
    do
      if (decNum and 2^x) then
        DecToBin$ = "1" + DecToBin$
      else
        DecToBin$ = "0" + DecToBin$
      end if

      'Comment out next line to disable digit grouping
      if not((x mod 4) - 3) then DecToBin$ = " " + DecToBin$

      x = x + 1
    loop until (2^x > decNum)
  else
    DecToBin$ = "0"
  end if
  DecToBin$ = trim$(DecToBin$)
end function
```