Create an 8x8 image by in the grid below. Once you create the image, consider each shaded block to be a one (1) and each empty block to be a zero (0). Using this method, each row of the image becomes an 8-bit binary number. Convert the binary number to a decimal, and then to a hexadecimal number.

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| 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |

binary decimal hex

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Notice that each row of the image can be represented as a 2-digit hexadecimal number. If your hex number is only one digit, add a leading zero. Take a look at your image by entering the string of hex digits into the form at:

<https://sites.google.com/a/brookfieldps.org/zuccas/apcs/bin-hex/hexpic>

Why is hexadecimal used in computer science? Because base-2 can be transformed into base-16 so easily. (Base-8 octal too.) Create a different design. Convert the first 4-bits into a single hexadecimal digit, then convert the next 4-bits.

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4-bits 4-bits

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