PROGRAMMING IN PYTHON I

Basics of Programming

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  → **If the machine does it, you don't have to do it! :)**

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  3. Return `max`
- Write a program for this algorithm in the programming language of choice.

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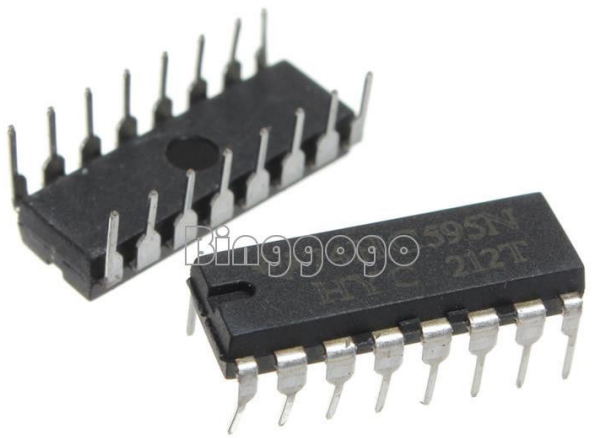
- You will be directly confronted with your own errors
- Errors in code are also referred to as **bugs**

BITS AND BYTES

Bits and Bytes (1)

- Data on computer (usually) stored in **bits**
- **Bit:** element with 2 states (True/False, 0/1, . . .)
  - E.g., transistors, pneumatic elements, magnetic stripes, . . .
- Registers (small storage units) usually able to hold 8 bits (or multitudes of 8 bits)
  - 8 bits are referred to as **byte**



[Image: 10/20/50/100PCS 2.0-6.0 V SN74HC595N 74HC595 8-Bit Shift Register DIP-16 IC, Binggogo]

Bits and Bytes (2)

- We use bits to store all kinds of data
  - Values, text, programs, images, audio, ...
- We **encode** our data in bit patterns and later **decode** it to retrieve the meaning of the data $\rightarrow$ **data types**
- Example:
  1. Right-click on a (small) image, audio, PDF, or any other non-text file
  2. Open it with a text editor (`notepad`, `texteditor`, `gedit`)
  3. Enjoy the bit pattern of the file interpreted as pure text ;)