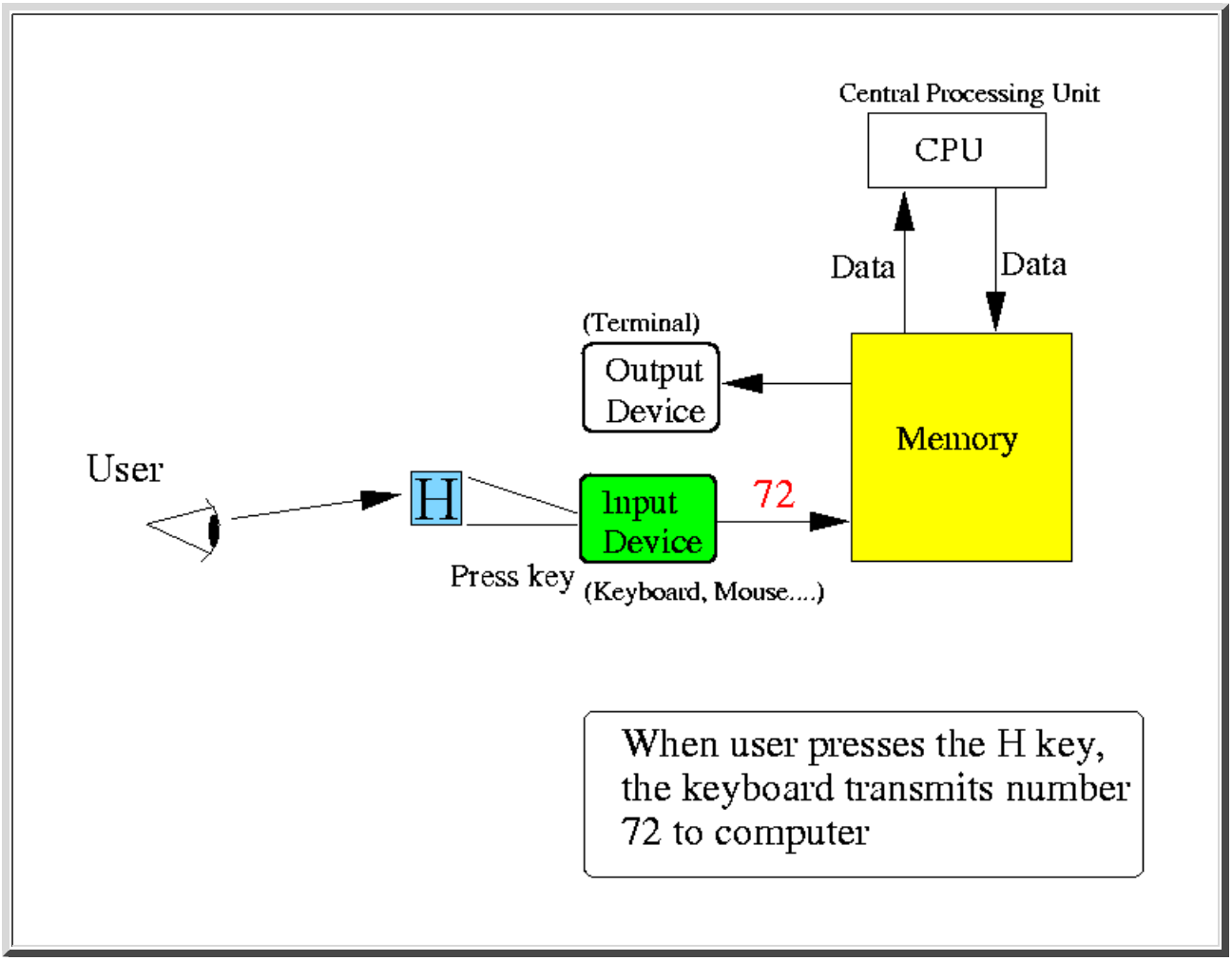
Communicating Textual Information between Humans and Computer

- How does a user enter **inputs** into a computer:



  - When user presses a key on the keyboard input, the keyboard transmits the **ASCII code** that represents the pressed character to the computer.

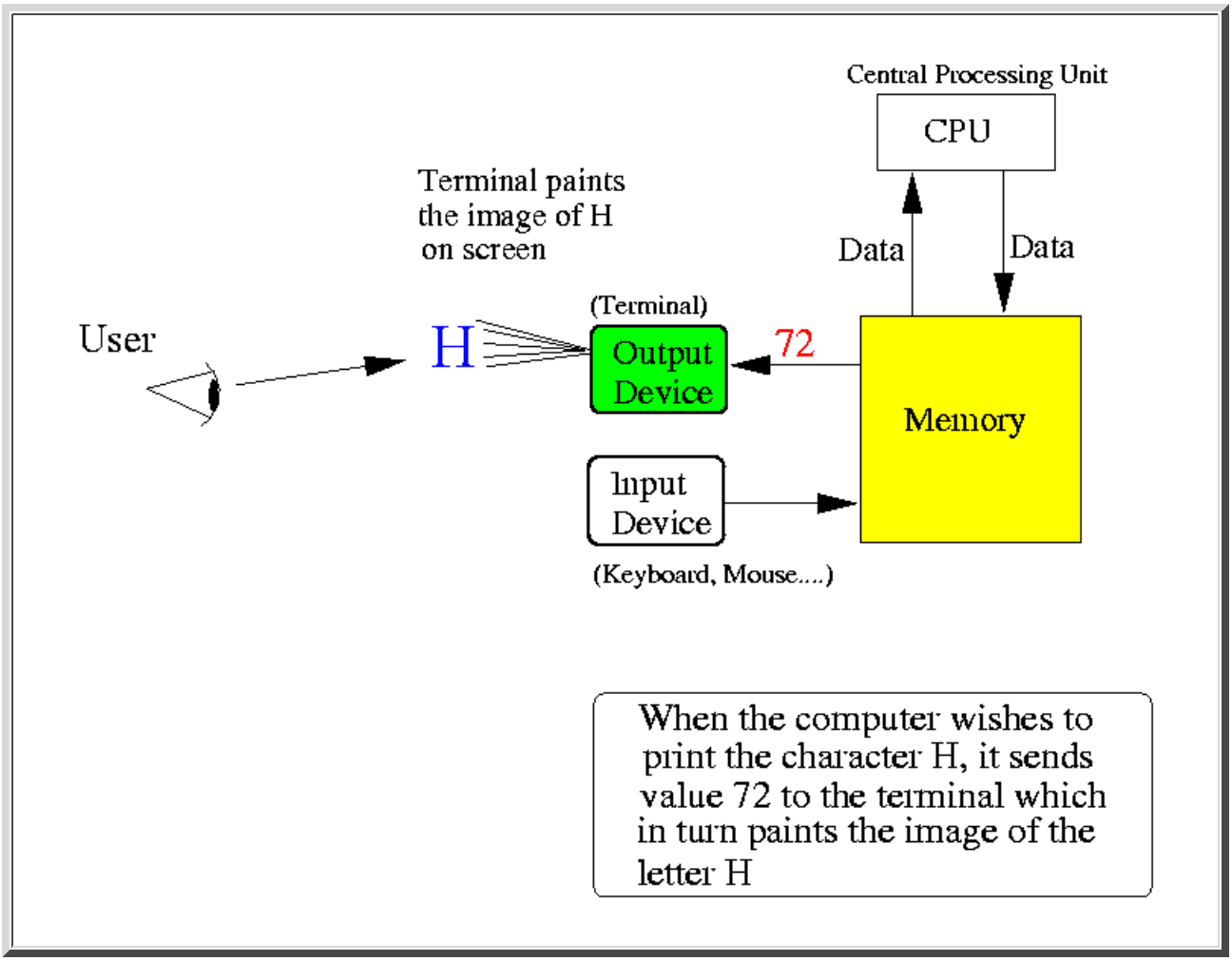
- Another example: mouse click

  A mouse device transmits a sequence of numbers to the computer when clicked:

  - First number is its X-movement (how far it moved horizontally)
  - Second number is its Y-movement
  - Then 3 bits (binary numbers) (L,C,R) for Left, Center and Right, where each number is 0 or 1. 0 means the button was not pressed, and 1 if button was pressed.

  (Input function in the computer will look for these numbers in the mouse input)

- Display output to the terminal:



- **FACT**: Text information **always** use the ASCII **code** to encode the information

  In other words: when we want to print text messages to a terminal, the output **context** is always ASCII code

- Text stored in a data file is also encoded in ASCII

  Try doing this experiment:

  - Edit a file
  - Execute: "od -c file" to see the content in "text" form
  - Execute: "od -x file" to see the content in "binary encoding" form

- It now begs the questions:

  What if the computer wants to print out a numeric value (e.g.: -1 or 11111111)
