Software

1. What is software?

Software is a set of instruction that tells to computer how it work or perform its task.

We can see software from the root. As we know digital technology has progressed from **vacuum tube** to **discrate transisters** to **complex integrated circuits.**

Digital electronics involves circuits and systems in which there are only two possible states: this states are represented by two voltage levels.

A ***HIGH*** level voltage and ***LOW*** level voltage.

Two states can also represented by current levels switch **on** or **off.**

In digital systems such as computers, combinations of the two states are called **codes ( softwares )** are used to represent numbers, symbols, alphabetic characters, and other types of data. The two state number systems are called **binary** and its two digits are “0” and ”1”. Binary digit is called a bit.

In digital circuits two different voltage which are used to represent the two bits. Generally “1” is represented by the higher voltage, which we will refer to as HIGH 2,and “0” is represented by a lower voltage, which we will refer to as LOW. This is called POSSITIVE logic:

HIGH = 1. LOW = 0.

An other system in which a “1” represented by low and a “0” represented by high it is called NEGATIVE logic.

Group of bits or combinations of “1” and ”0” are called codes. The voltage that represent 1’s and 0’s are called **logic level’s**.

Logic level are ranges of voltage for a digital circuit.

VH(max)

VH(min)  High(1) or on

Unacceptable

VH(max)

Low(0) or off

VL(min)

There can no overlap between accepted high and accepted low level value because there is unacceptable level of voltage between them as separator.

The voltage values between VH(max)  and VH(min) is unacceptable for proper orientation. The voltage in the unacceptable range can appear as either HOGH or LOW to a given circuit. Therefore this unacceptable values are never used, for example the high values for a certain types of digital circuit called “TTL” may range from 2v to 5v and the low values may range from 0v to 0.8v. So for example if voltage of 3.5v is applied the circuit will accept as a high or binary “1”, if a voltage 0.5v is applied, the circuit will accept it as low or binary “0”, for this type of circuit voltage between 0.8v and 2v are UNACCEPTED.

Reference book:

Digital Fundamentals—10th edition ------- Floyd > 70%

www.google.com

And other video tutorials.