Problem solving: Input => <Black box / Algorithm> => Output

How to solve? Using unary

Unary is a very simple system of using single symbol

Computer don’t use unary, it uses binay which is a system using bit - 2 symbols (1 and 0)

1 simplest way to think about 1 or 0 is like a light bulb (0 – off, 1 – on) and the switch is called transistors and a computer has million of them, they flipped on to represents one or flipped off to represent zero

If only I bulb, only got the number from 0 => 1, so how to get higher number? Easy, more light bulbs => Use the power of 2

It performs other things through ASCII using 8 bits (0 => 255)

Problem: 256 is not enough for all of the world alphabet, emoji, Asian characters, … so how does computer represent those?

Answer: more bits (like 8 to 16 to 24 or 32) and the solution to ASCII is what is called Unicode.

Unicode is a mapping of letters to represent many different characters

Problem: how only one emoji can represent different skin tones?

Answer: using the first bite or bites represent structure of the emoji default skin tones (Yellow) and immediately followed by some pattern of bits that these humans standardize the skin tones, then the device will change the default color yellow in most cases to the more add human tone

RGB: Red Green Blue, each dots on the screen (pixels) represents by an amount of red, an amount of green, an amount of blue, each color for 1 byte => create others colours.

Lots of pixels => Picture, lots of pictures => Video

Presenting music notes: through frequency, duration, loudliness

Pseudo code: Instructions (ideas) to solve the solution without using any programming languages

Scratch: using pseudo code (programming without thinking much about the syntax) in MIT server.

Since here the professor himself show some basic programming language techniques through Scratch