

Computational Intelligence Representation Quiz

You keep hearing that the closer your lighting is to normal sunlight the better you will feel. You're out of work and have no money but you have time to make your own high quality lighting with three LEDs, a red led, a green led and a blue led that you got from AliBaba.

The trick is to get the correct amount of current into each of the RGB leds so that when mixed together you get sunlight. You might need 200ma driving the red led, 120ma driving the green led, and 10ma driving the blue led. Your neighbor, an engineer and said he would help build it but he needed the current values.

You just took a CI course so you can have EC do the hard work of figuring out the current settings.

You do some research and find out that there are two measures of light CRI and CCT. CRI (Color Rendering Index) is a measure of how close it matches sunlight and can vary from zero to 100, 100 being exactly sunlight. The other measure is CCT (Correlated Color Temperature). At sunrise and sunset the light is more orange, roughly a CCT of 2500 and at noon it's more blue with a CCT of about 6000.

But your teacher said you needed a fitness function. More research and on AliBaba you find a cheap box that can measure both CCT and CRI.

Your goal is to make an application that you can simply enter the CCT, a number between 2500 and 6000, (sunrise/sunset and noon colors respectively) and have your light create appropriate sunlight.

Describe your representation, variation and fitness function to gather the data for your neighbor.