The chatbot will take in a list of the color bands on the resistor, and the program will calculate its value, tolerance, and temperature coefficient (if applicable). Each color will be mapped to a specific value. It can also work in reverse, telling the user the color bands when given a value. When working in reverse, telling the chatbot the tolerance and the temperature coefficient is optional. It can also calculate the total resistance when resistors are placed in parallel and in series. For example, if someone does not have the resistor that they need, they can use multiple together to get a different value. Given the resistors the user has, the bot can determine the resistors that the user needs to combine to get the desired value.

The color codes follow this chart:

