CODE TO NOTE

FLOAT VARIABLES:

```
float echoTime;
```

The `float` variable, short for **floating-point number**, is similar to an integer except it can represent numbers that contain a decimal point. Floats are good for representing values that need to be more precise than an integer. Floats allow us to measure precise distances such as 9.33 inches instead of just 9 inches.

ELSE IF STATEMENT:

```
if(logic statement){
//run if first is true
}

else if(second logic
statement){
//run if second is true
}

else{
//run if neither is true
}
```

Else if statements let you combine more than one logic statement. Arduino will test each logic statement in order; if one is true it will run the code in that section and then skip all of the other sections of code in the remaining statements.

USER-DEFINED FUNCTION:

```
getDistance();
```

This function tells the distance sensor to send out an ultrasonic wave form, measures the time it takes to bounce back to the sensor, and then calculates the distance based on the speed of sound. This calculation is based off information found in the distance sensor's datasheet.

CODING CHALLENGES

CHANGE THE LIMITS OF THE DISTANCE SENSOR: Try editing the values in the logic statements so that the RGB LED changes color at different distances.

CHANGE THE UNITS OF THE DISTANCE SENSOR: Try editing the code so that the distance sensor outputs a different unit of length, such as centimeters or feet.

ADD A FOURTH COLOR: Try adding another **else if** statement so that there are four different colors instead of three.