# Projekat 5 – Ultrasonicni senzor

O senzoru:

For the programming code, first we need to define the Trigger Pin and Echo Pin that connected to Arduino board. In this project EchoPin is attached to **D2** and TrigPin to **D3.** Then define variables for the distance (int) and duration (long).

In the loop first you have to make sure that the trigPin is clear so we have to set that pin on a **LOW State** for just **2 µs**. Now for generating the **ultrasound**wave we have to set the **trigPin** on **HIGH State**for **10 µs**. Using the pulseIn()function you have to read the travel time and put that value into the variable “duration”. This function has 2 parameters, the first one is the name of the echo pin and for the second one you can write either HIGH or LOW. In this case, HIGH means that the ***pulseIn()*** function will wait for the pin to go HIGH caused by the bounced sound wave and it will start timing, then it will wait for the pin to go LOW when the sound wave will end which will stop the timing. At the end the function will return the length of the pulse in microseconds. For getting the distance we will multiply the duration by 0.034 and divide it by 2 as we explained this equation previously. At the end we will print the value of the distance on the Serial Monitor.

For example, if the object is 20 cm away from the sensor, and the speed of the sound is **340 m/s** or 0.034 cm/µs the sound wave will need to travel about 588 microseconds. But what you will get from the Echo pin will be **double**that number because the sound wave needs to **travel forward**and **bounce backward**. So in order to get the distance in cm we need to multiply the received travel time value from the echo pin by 0.034 and divide it by 2