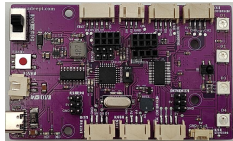



## Lesson 5 How to Control the Buzzer

In this lesson, we will learn how to control the Buzzer.

### 5.1 Components used in this course

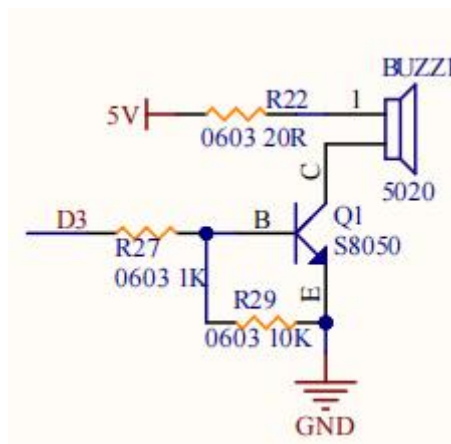
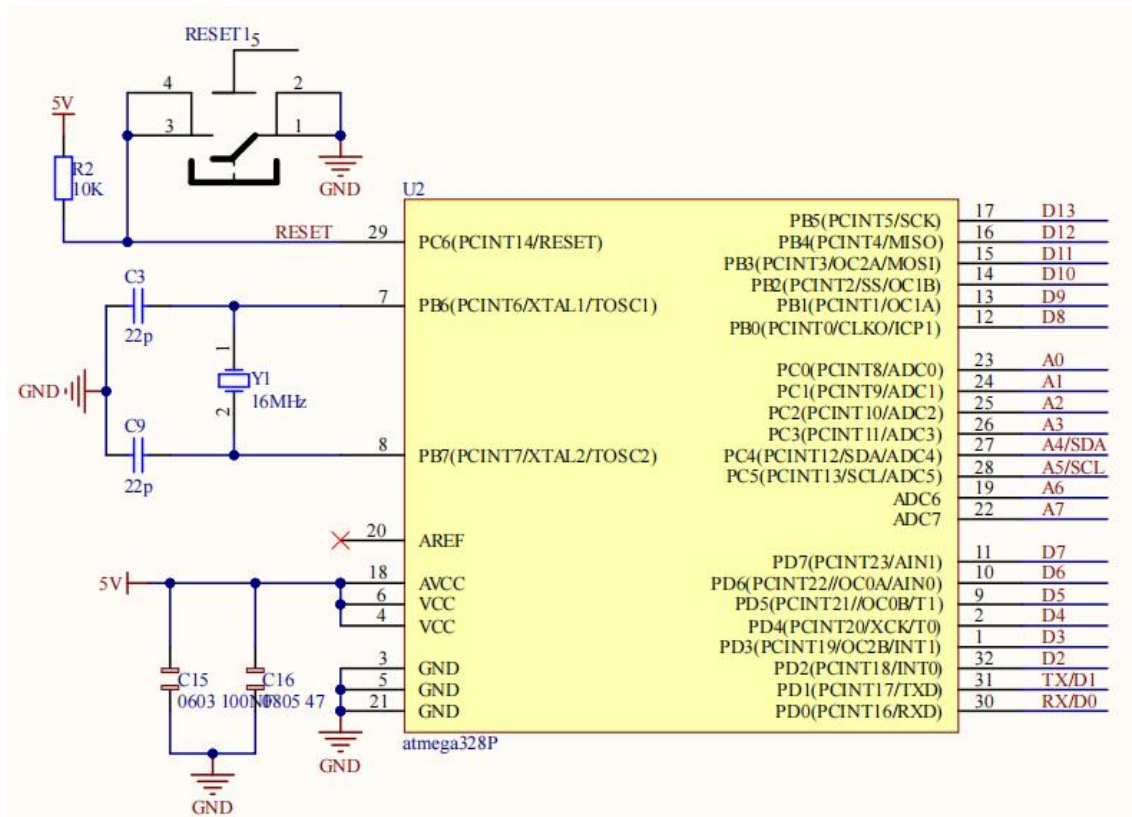
Components	Quantity	Picture
Adeept Robot Control Board	1	
Type-C USB Cable	1	

### 5.2 The introduction of the Buzzer

Buzzer is a sounding component, which is widely used in electronic devices such as calculator, electronic warning clock and alarm. Buzzer has two types: active buzzer and passive buzzer. Active buzzer has oscillator inside, which will sound as long as it is supplied with power. Passive buzzer requires external oscillator signal (generally use PWM with different frequency) to make a sound.

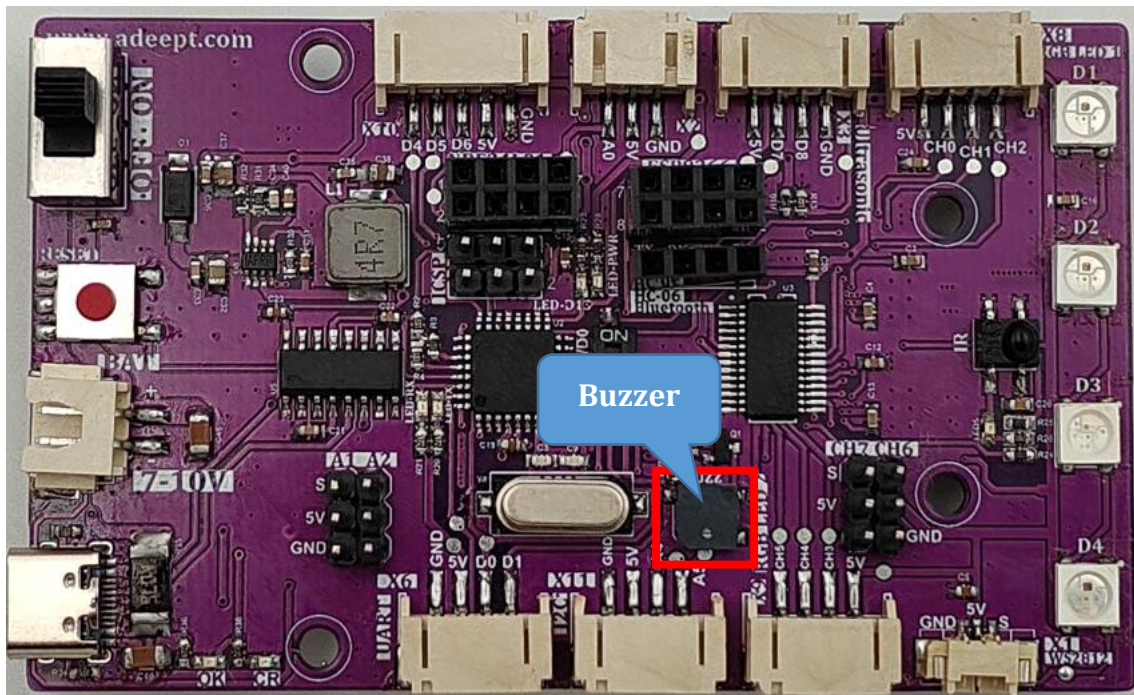
Active buzzer is easy to use. Generally, it can only make a specific frequency of sound. Passive buzzer requires an external circuit to make a sound, but it can be controlled to make a sound with different frequency. The resonant frequency of the passive buzzer is 2kHz, which means the passive buzzer is loudest when its resonant frequency is 2kHz.

A passive buzzer is built into the Adeept Robot Control board.



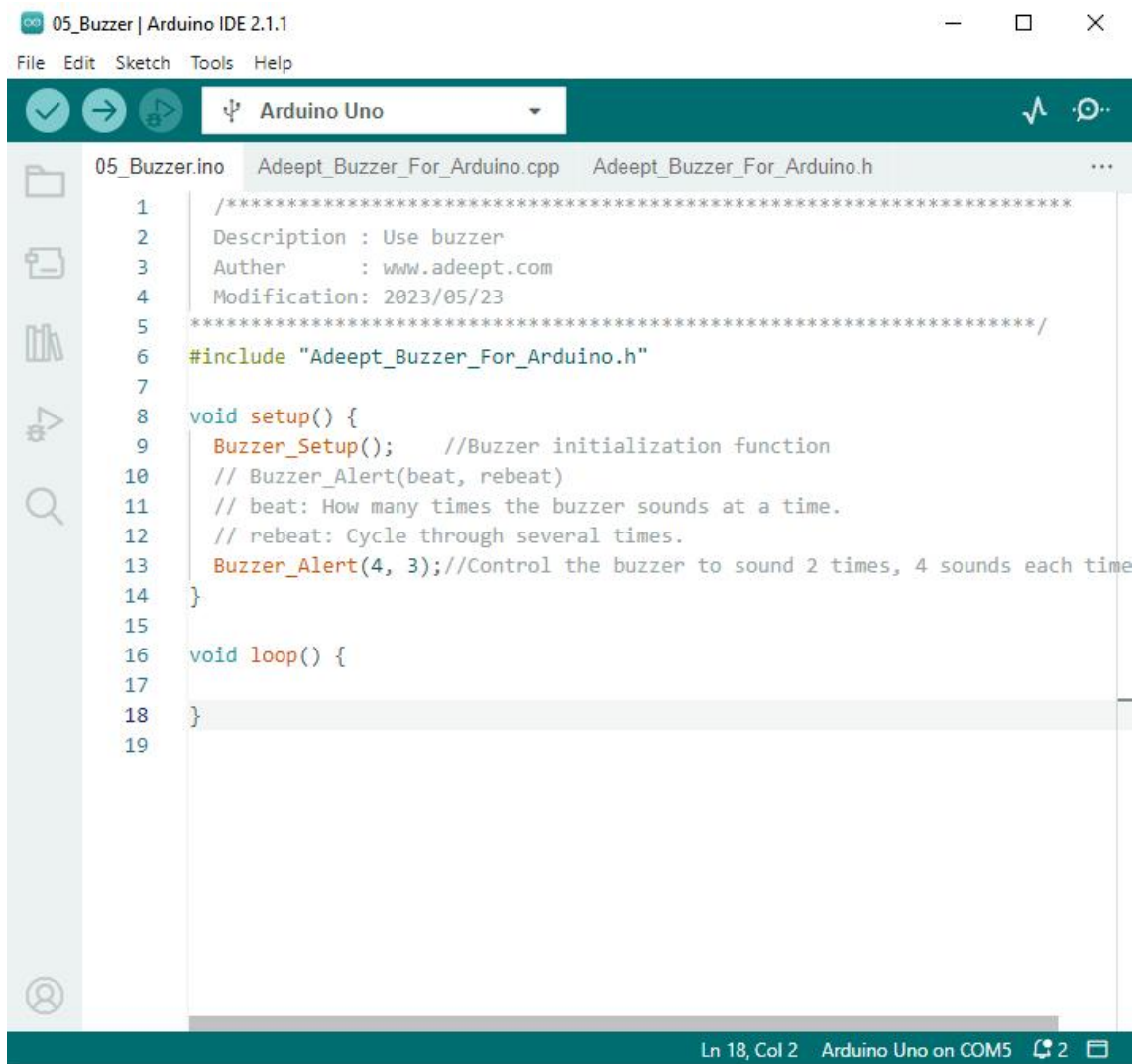
## 5.3 Wiring diagram

Figure as below:



## 5.4 How to control Buzzer

1. Connect your computer and Adept Robot Control Board(Arduino Board) with a USB cable.
2. Open "05\_Buzzer" folder in "[Adept\\_UnoCar-B/Code](#)", double-click "[05\\_Buzzer.ino](#)".



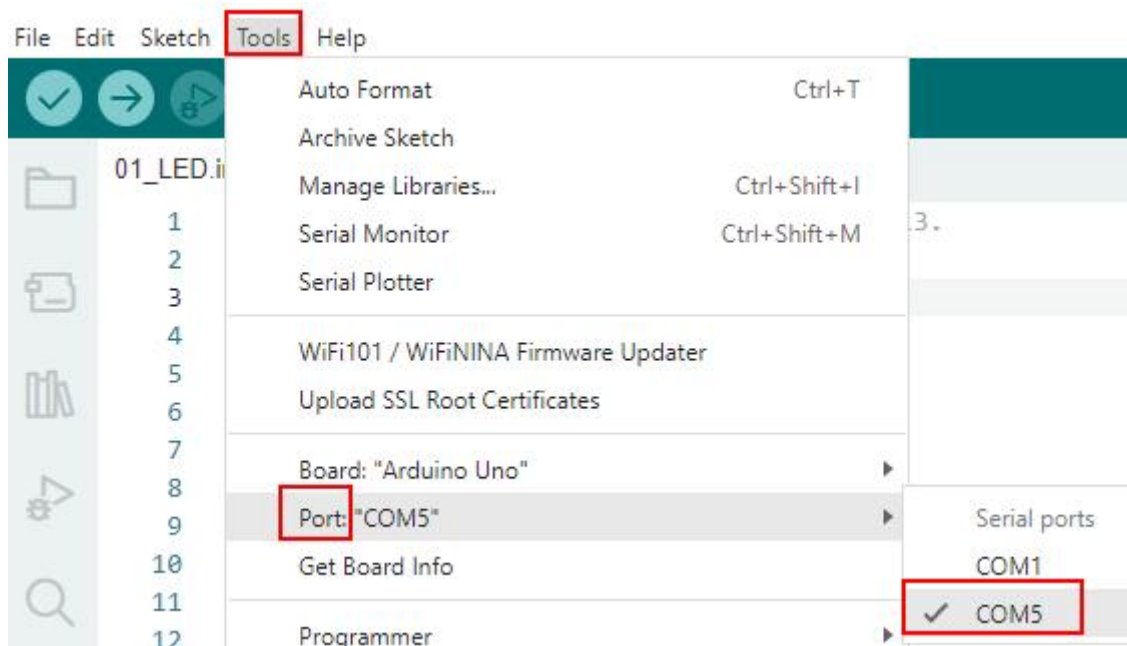
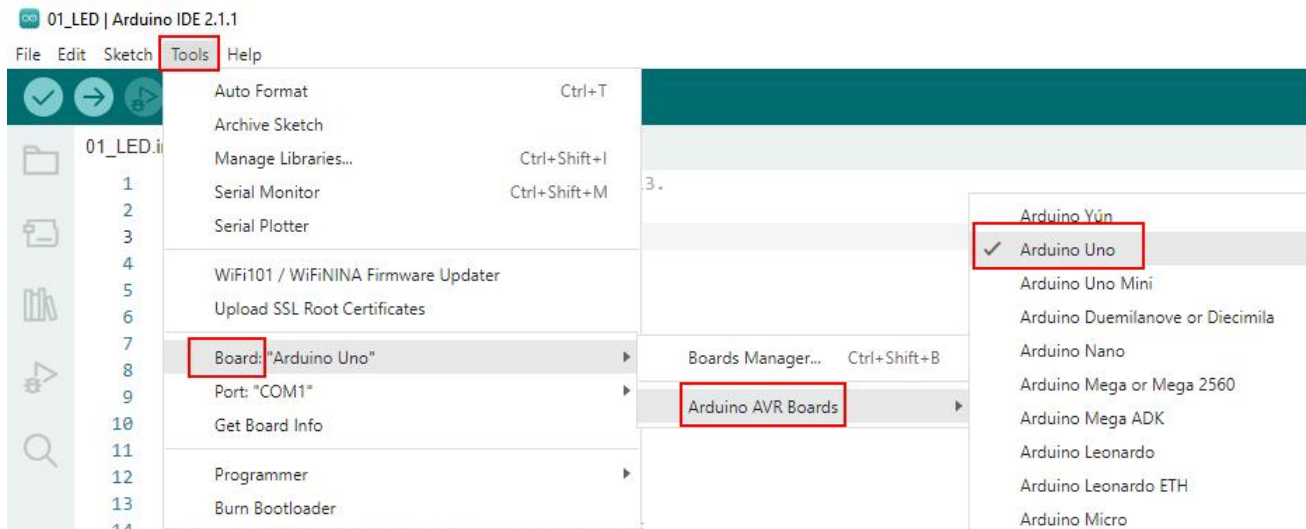
```
1  /*****
2  Description : Use buzzer
3  Auther      : www.adeept.com
4  Modification: 2023/05/23
5  *****/
6  #include "Adeept_Buzzer_For_Arduino.h"
7
8  void setup() {
9      Buzzer_Setup(); //Buzzer initialization function
10     // Buzzer_Alert(beat, rebeat)
11     // beat: How many times the buzzer sounds at a time.
12     // rebeat: Cycle through several times.
13     Buzzer_Alert(4, 3); //Control the buzzer to sound 2 times, 4 sounds each time
14 }
15
16 void loop() {
17
18 }
19
```


3. Select development board and serial port.

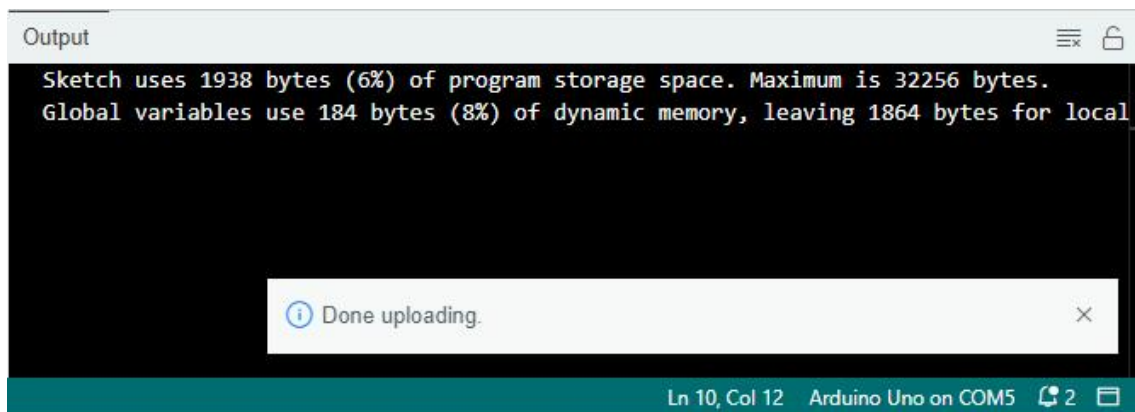
Board: Tools--->Board--->Arduino AVR Boards--->Arduino Uno

Port: Tools --->Port--->COMx

Note: The port number will be different in different computers.



4. After opening, click  to upload the code program to the Arduino. If there is no error warning in the console below, it means that the Upload is successful.



5. After successfully running the program, You will hear the buzzer on the Adeept Robot Control Board beep.

## 5.5 Code

```
1. #include "Adeept_Buzzer_For_Arduino.h"
2.
3. void setup() {
4.   Buzzer_Setup();    //Buzzer initialization function
5.   // Buzzer_Alert(beat, rebeat)
6.   // beat: How many times the buzzer sounds at a time.
7.   // rebeat: Cycle through several times.
8.   Buzzer_Alert(4, 3); //Control the buzzer to sound 3 times, 4 sounds each time
9. }
10.
11. void loop() {
12.
13. }
```

The Buzzer\_Alert function is in the [Adeept\\_Buzzer\\_For\\_Arduino.cpp](#) file.

```
void Buzzer_Alert(int beat, int rebeat)
```