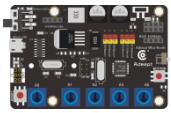
How to Saving Data with EEPROM

In this lesson, we will learn how to save data with EEPROM.

1. Components used in this course

Components	Quantity	Picture
Adeept Arm Drive Board	1	
Micro USB Cable	1	

2. About EEPROM

EEPROM (Electrically Erasable Programmable Read Only Memory) refers to electrically erasable programmable read only memory. It is a memory chip that does not lose data after power failure. EEPROM can erase existing information on a computer or special equipment and reprogram it. It is generally used in plug and play.

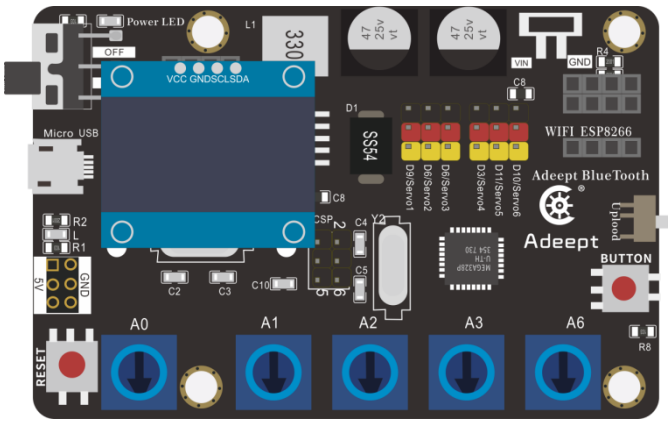
The Adeept Arm Drive Board has its own EEPROM, and its memory size is 1K.

Arduino IDE comes with EEPROM usage method. The Arduino library has prepared EEPROM library for us. You can directly call EEPROM.h in the code when you are using the EEPROM library. And then use the write() and read() methods to operate the EEPROM.

3. Wiring diagram (Circuit diagram)

You need to connect it to the OLED interface on the Adeept Arm Drive

Board.As shown below:

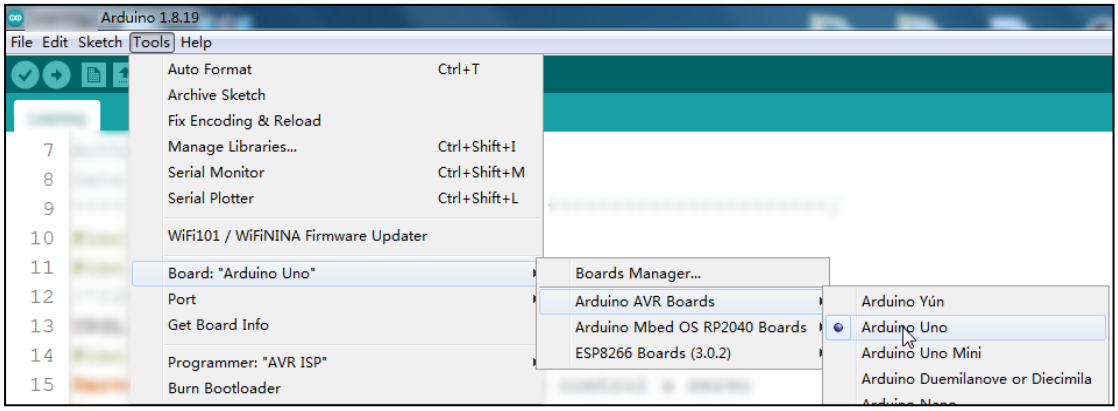


4. How to use EEPROM to save data

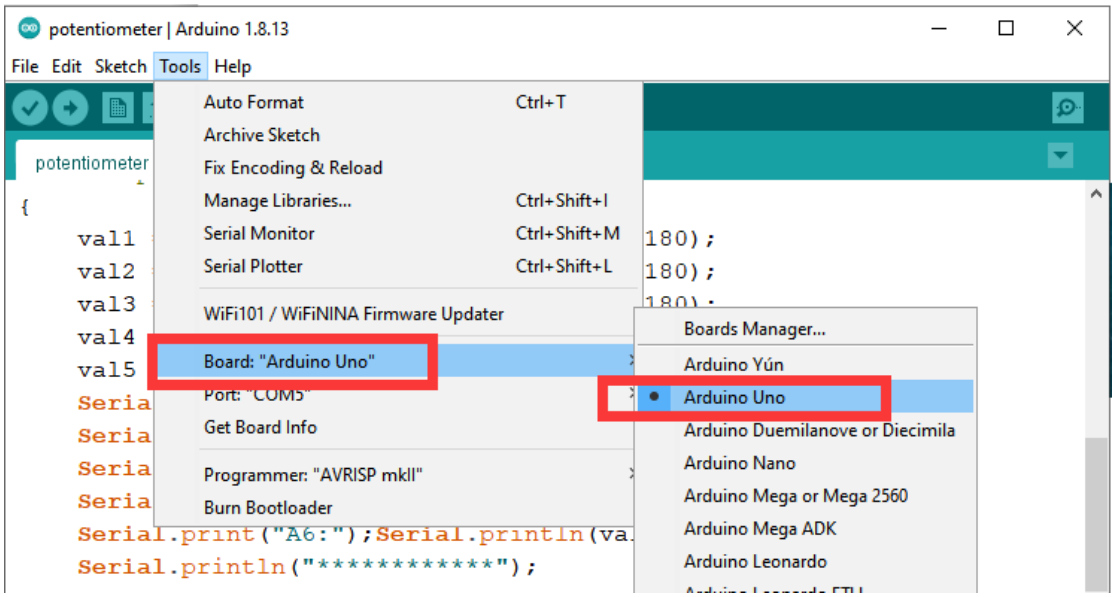
4.1. Compile and run the code program of this course

1. Open the Arduino IDE software, as shown below:

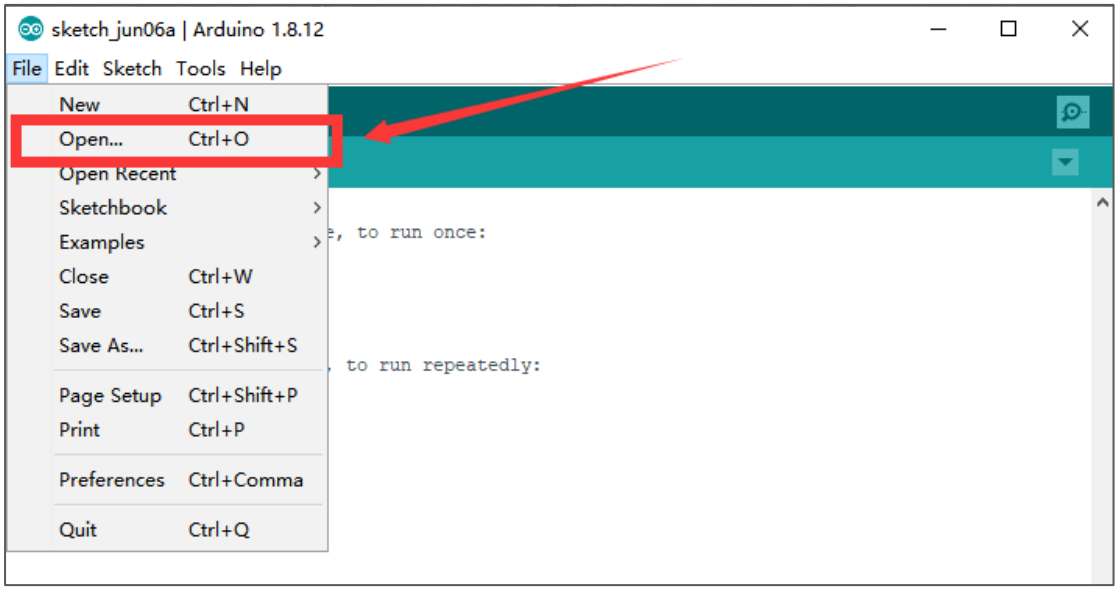
2. In the Tools toolbar, find Board and select Arduino Uno, as shown below:



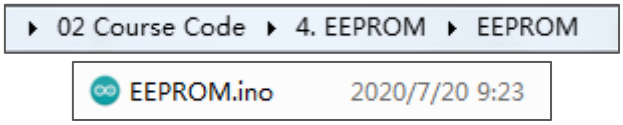
Or:



3. Click Open in the File drop-down menu:

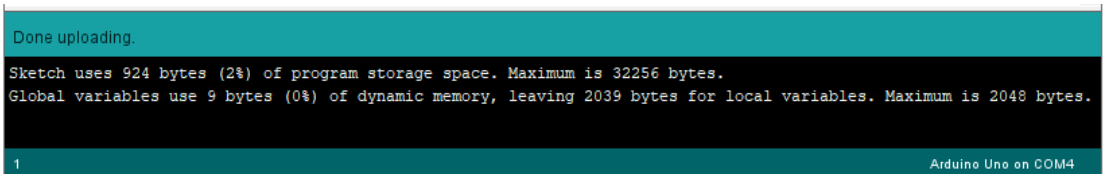


4. Find **the Package of Documentation** (Reference: Chapter 4, near Page 12 of this section, subsection 5, step (4)) that we provide to the user. Open the directory in sequence: “02 Course Code” -> “4. EEPROM” -> “EEPROM”. Then select the code file "EEPROM.ino" and click the "Open" button.

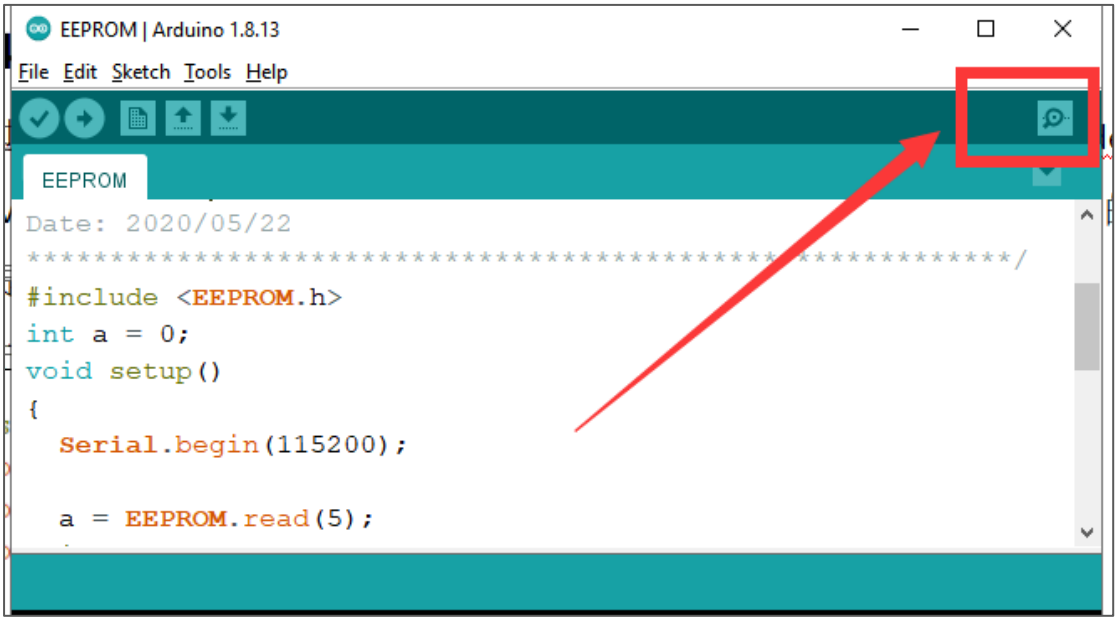


5. After opening, click  to upload the code program to the Adeept Arm Drive

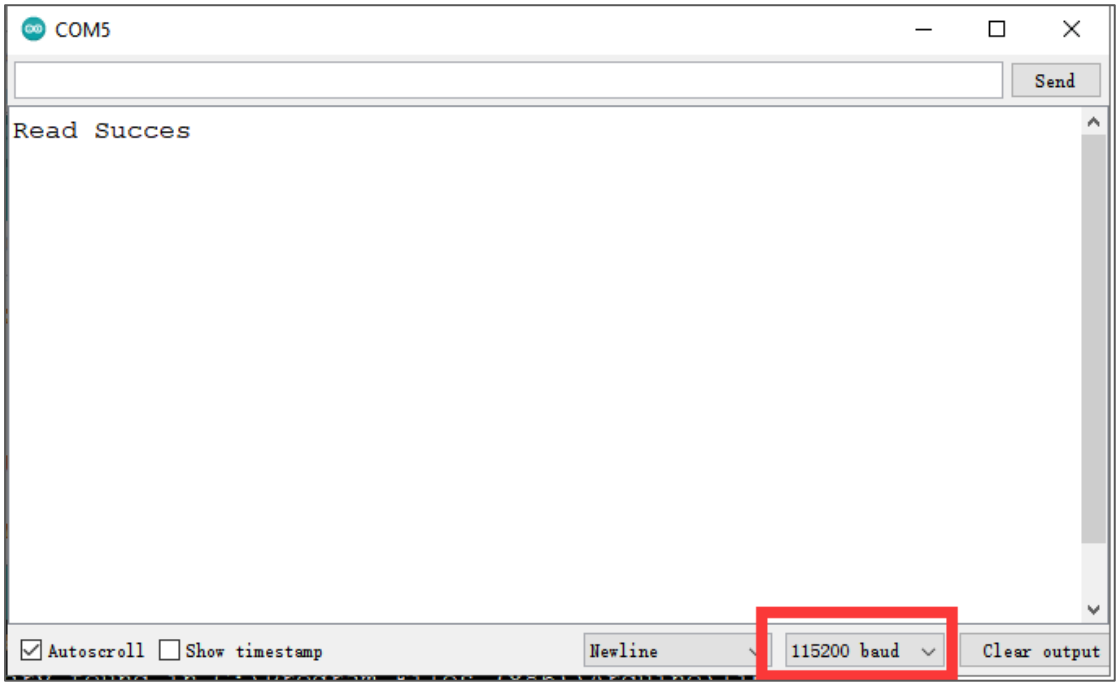
Board. If there is no error warning in the console below, it means that the Upload is successful.



6. After successfully running the program, we need to observe the value of the potentiometer by opening the serial monitor and click  , as shown in the figure below:



You will see the returned information in the serial monitor: Read Succes, indicating that the data has been saved successfully.



4.2. Learning the code program of this lesson

After the above practical operation, you must be very curious to know how we use C language to program on the Adeept Arm Drive Board to save data with EEPROM. Below we will introduce how the main code program is implemented.

In the setup() function, first initialize the serial monitor, EEPROM.read(5) reads the data, and judges by if, if the read data is 2, then it is saved successfully.

```
void setup()
{
  Serial.begin(115200);
  a = EEPROM.read(5);
  if(a == 2)
  {
    Serial.println("Read Succes");
  }
  else
  {
    Serial.println("Read Failed");
    EEPROM.write(5,2);

  }
```