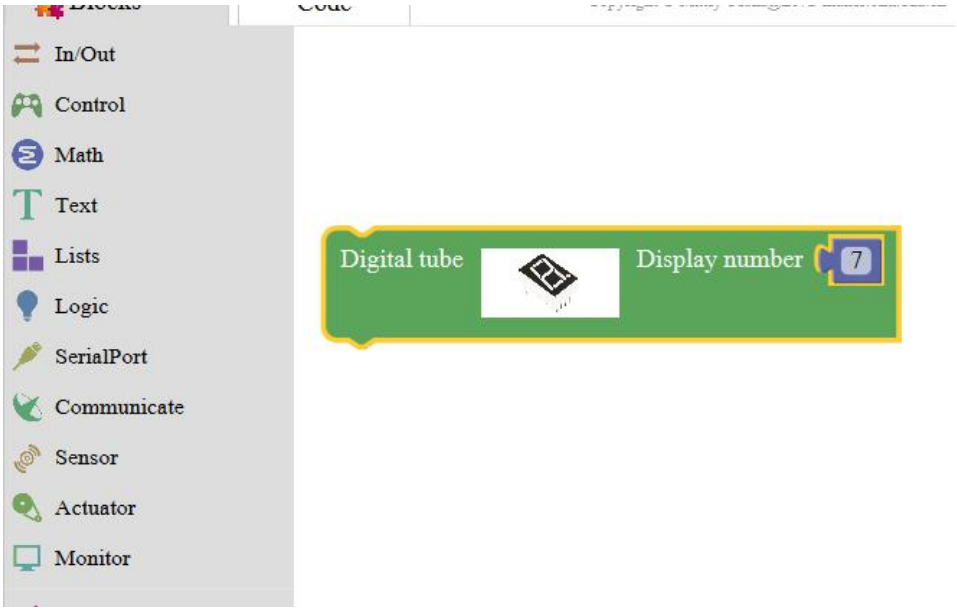
Course14-Nixie tube

Follow the steps to splice the building blocks ：



Introduction to digital tube:

Nixie tube is a semiconductor luminescent device, its basic unit is a light-emitting diode. It is divided into 7-segment Nixie tube and 8-segment Nixie tube. 8-segment Nixie tube more than 7-segment Nixie tube a light-emitting diode unit (more than a decimal point), this experiment we use the 8-segment Nixie tube. The actual object is shown below.

According to the light-emitting diode unit connection mode, it is divided into anode Nixie tubes and cathode Nixie tubes.

Anode Nixie tubes that connects the anodes of all light-emitting diodes together to form a common anode (COM). The common pole (COM) shall be connected to +5V when the common anode digital tube is applied. When the cathode of a certain field of light-emitting diode is low , the corresponding field will be light up. When the cathode of a field is high, the field does not light up.

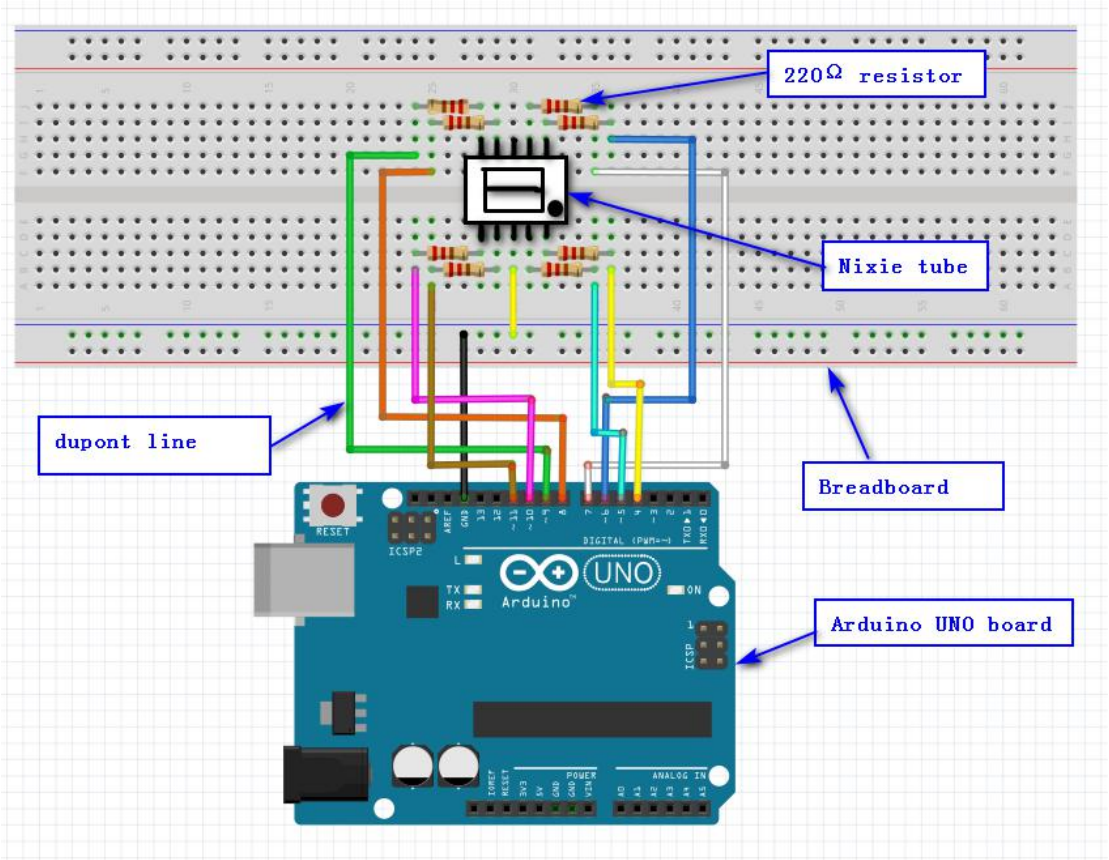
Cathode Nixie tubes that connects the cathodes of all light-emitting diodes together to form a common cathode (COM). The common pole COM shall be connected to GND when the common cathode digital tube is applied. When the anode of a certain field of light-emitting diode is high , the corresponding field will be light up. When the anode of a field is low, the field does not light up.

List of components required for the experiment:

Arduino UNO board *1
USB cable *1
220Ω resistor *8
8-segment digital tube *1
Breadboard *1
Dupont line *1bunch

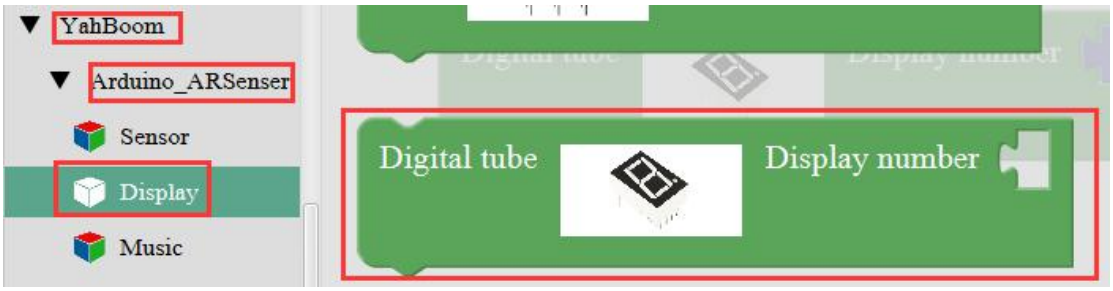
Actual object connection diagram：

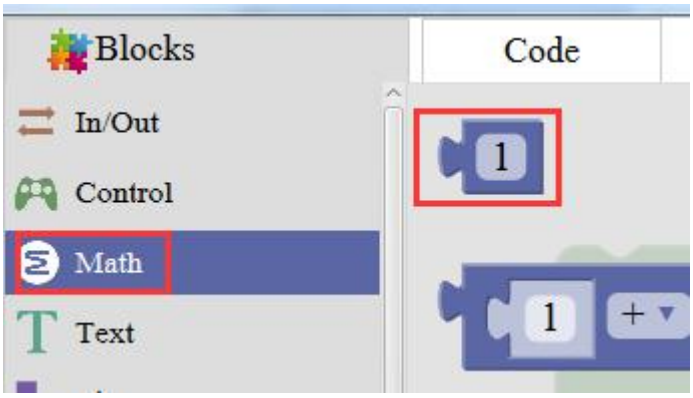
We need to connect the circuit as shown in the figure below.



Steps of experiment:

1.You need to choose the building blocks which you need for this experiment, as shown in the figure below.

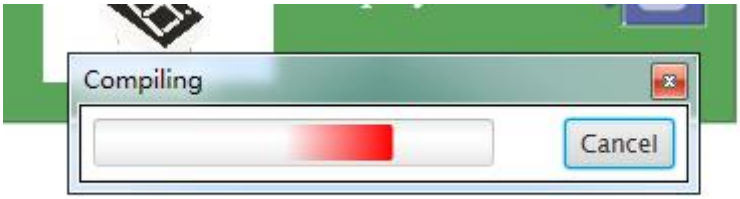




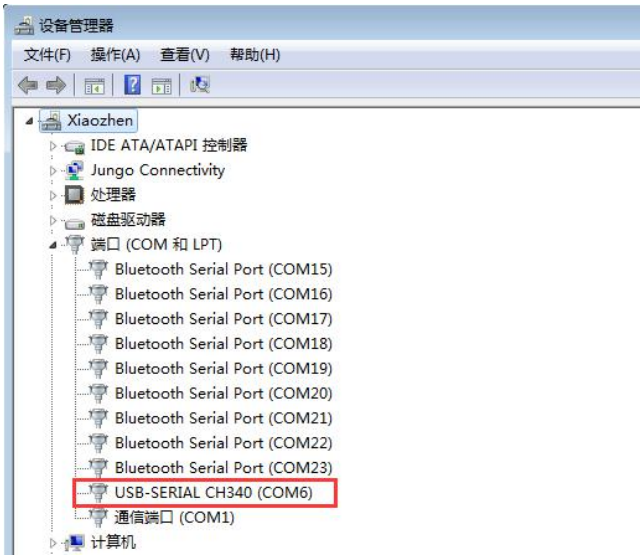
2.You need to combine the selected blocks, as shown in the figure below.

3.You need to you need to click “**Compile**”. and wait for the completion of the compiler, the following box will prompt the compiler successfully, if prompt the compile failure is the problem of building block splicing.

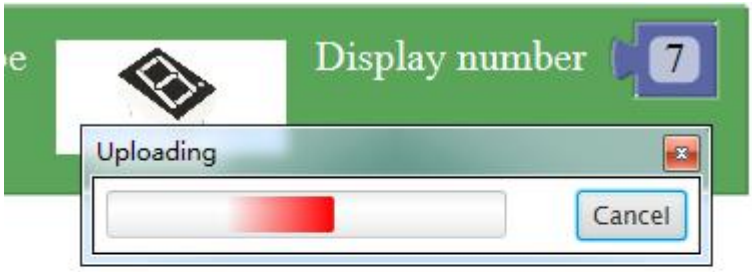
4. After the compilation is completed, the word "**Compile success!**" will appear in the lower left corner, indicating that you have successfully compiled the program.

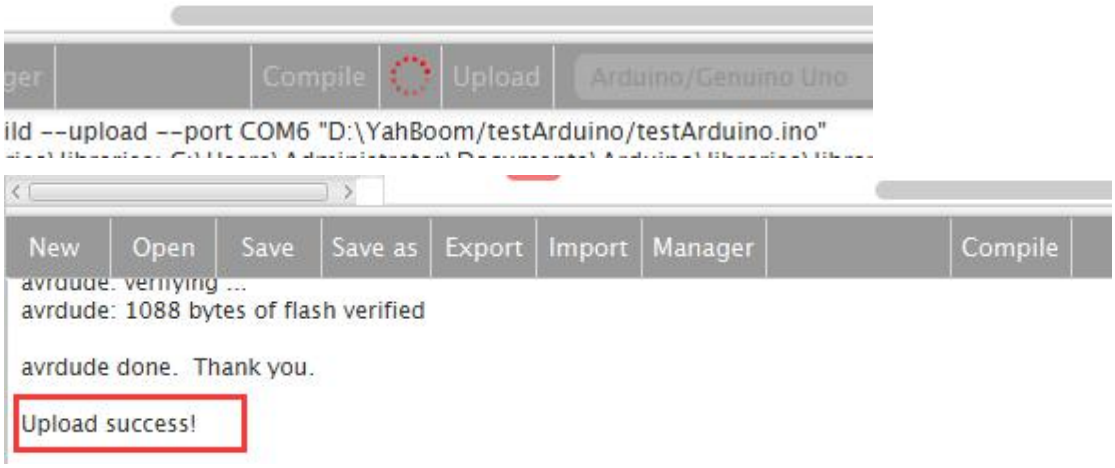


5. In the menu bar of Mixly, we need to select the port that the serial number displayed by the device manager (for exmaple:COM6) and **Arduino/Genuino Uno.** As shown in the figure below.



6. After the selection is completed, you need to click "**Upload**" to upload the code to the Arduino UNO board. When the word "**Upload success**" appears in the lower left corner, the code has been successfully uploaded to the Arduino UNO board, as shown in the figure below.





7. After the code is uploaded. We can see that the number 7 is displayed on the Nixie tube.