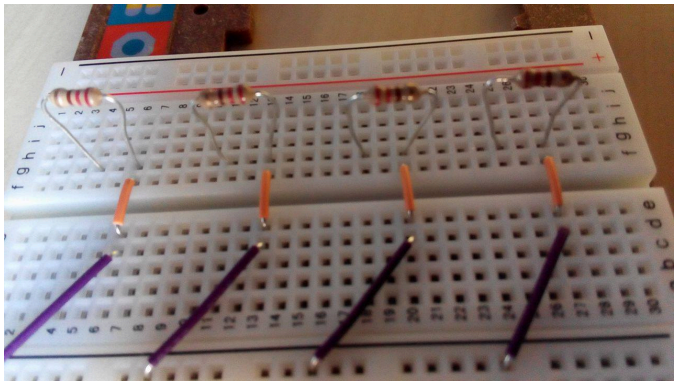
What you need

- 4 resistors 220 ohm
- 4 pumps 230 V
- Either 4 relays or a relay board
- An Arduino
- A breadboard
- A bunch of wires

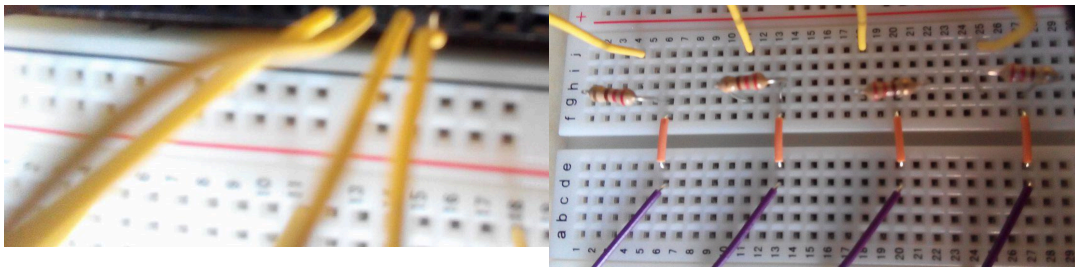
Step 1:

For building the circuit I use a breadboard which makes it easier and makes for less soldering. The first thing you want to do is make this setup on the breadboard. The resistors I use are 220 ohm.



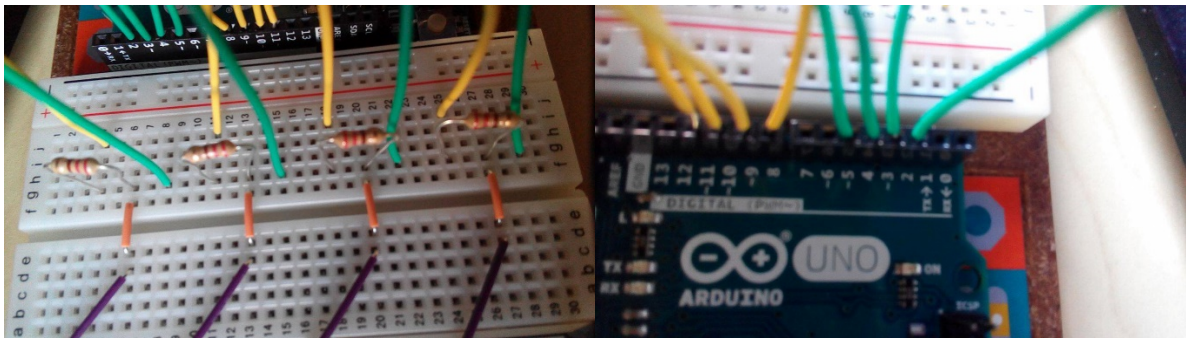
Step 2

When you made previous setup you will need your Arduino. In my example I use an Arduino Uno. Connect for wires to pins 8 to 10 and the other side to left side of your resistor.



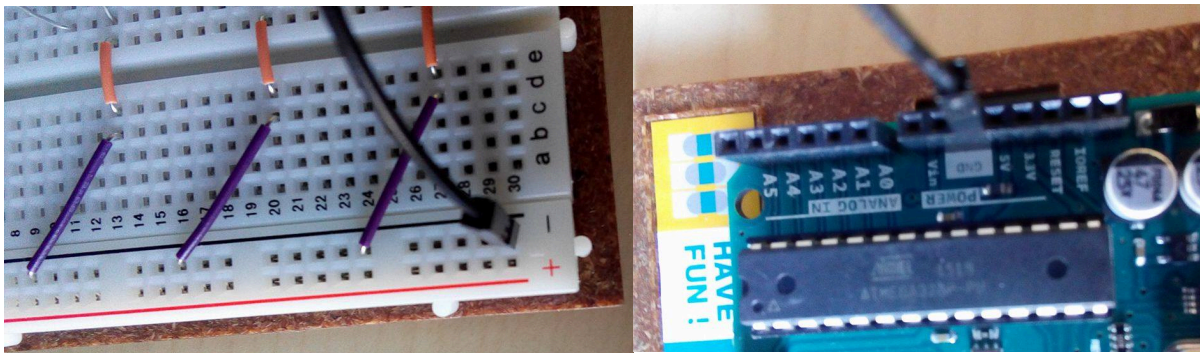
Step 3

Next you want to connect four wires top ins 2 till 5, the other side of the wires are connected on the breadboard 2 holes away from the resistor. You can choose to put these further away but I didn't have much space to work with.



Step 4

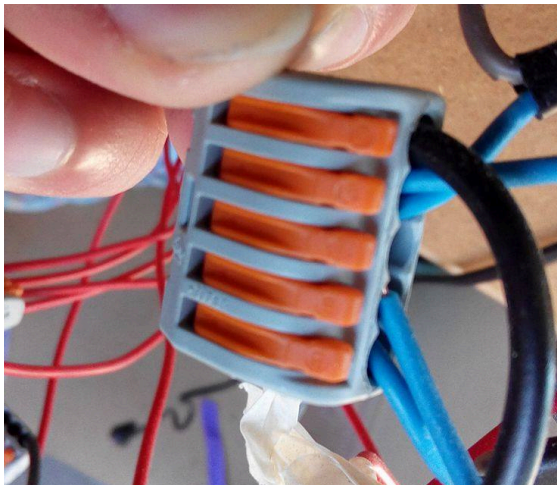
Last thing you want do is to connect the ground of the Arduino to the ground of the breadboard.



At this point you are done with the breadboard and will have to install the other components in the Jokebox.

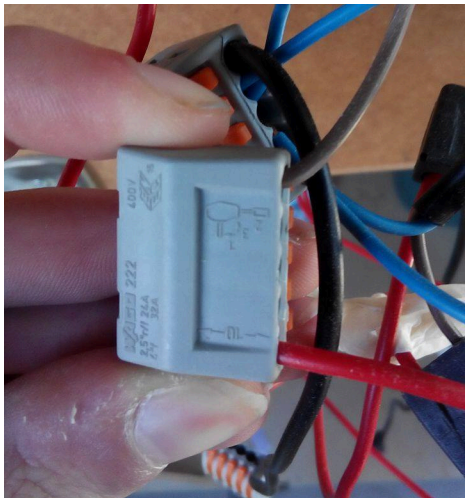
Step 5

For this step you will need your pumps. First of all you will have to cut off the plugs. Then connect all the negative wires to each other. Connect one plug's negative wire to this bunch as well.



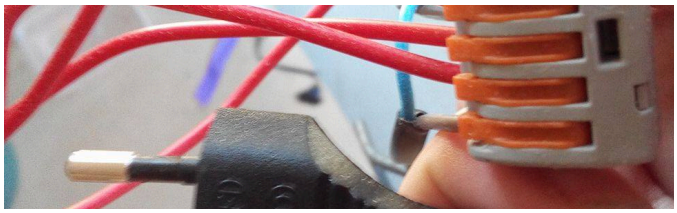
Step 6

Connect each positive wire from each pump to a wire so basically you are extending these wires. This is necessary to connect the pump to the relay board which will come later.



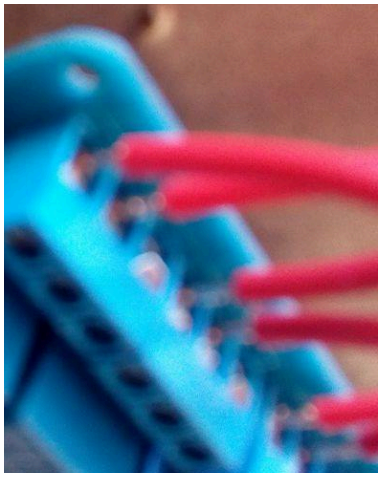
Step 7

The last step for the pump wiring is to connect the positive wire from your plug to 4 different wires this will be needed for the relay board.



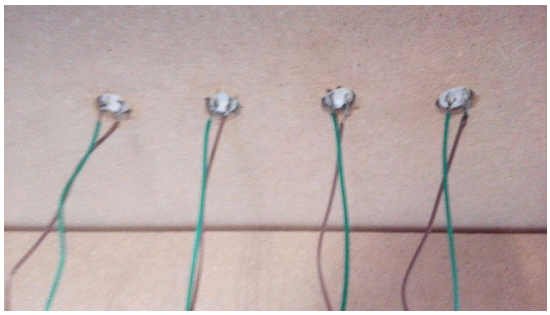
Step 8

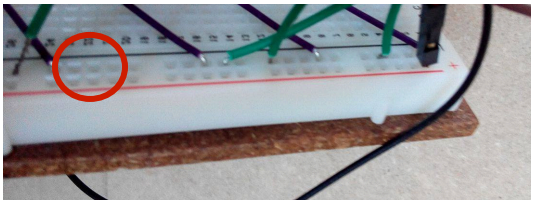
Now take your relay board. First connect the four wires from he plug to the relay's and connect the positive wires from the pump in the other hole. There are three hole but you only need two. Make sure you connect the wires so that when you activate the system the pumps start pumping immediately (normal closed).

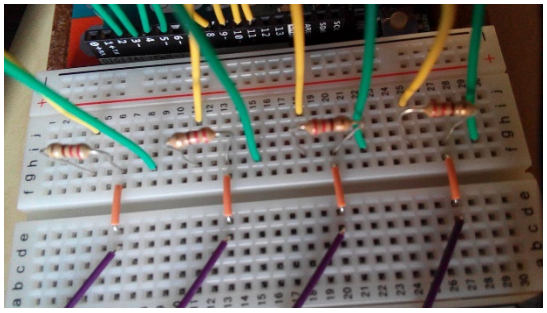


Step 9

Next thing you want to do is installing the buttons and wiring them up. For your own convenience use two different colour wires this makes everything easier to overlook. The green wires are connected to the ground on the breadboard. The brown wires are placed in the same row as the green wires you installed in Step 3.

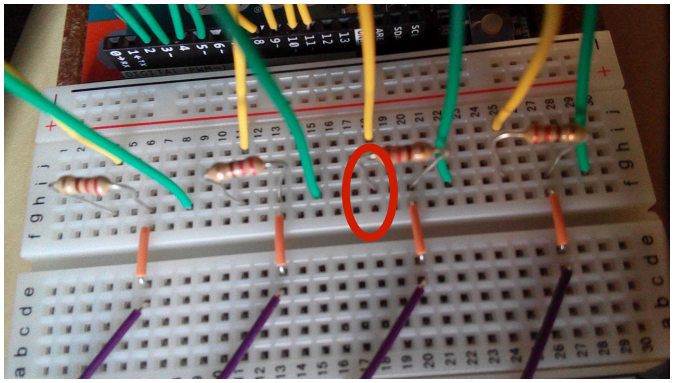






Step 10

Now we will have to connect the breadboard to the relay board. This is pretty straight forward just connect the ground from the pins to the ground of your Arduino and the 5V pin to the 5V of the Arduino. Then you will need to connect 4 additional wires from the breadboard to the relay. These wires are connected to the relay's you connected the pumps to and on the breadboard to the left side of the resistors.



Step 11

The last step is installing the speaker this is really simple just connect one side to pin 12 and the other to the ground.