Tasks

Control a 270V outlet with an Arduino

List of Hardware needed (links are just examples of the needed ones)

1. [433 MHz transmitter/receiver](https://www.amazon.de/AZDelivery-%E2%AD%90%E2%AD%90%E2%AD%90%E2%AD%90%E2%AD%90-433-MHz-Funk/dp/B076KPWS7G/ref=sr_1_2_sspa?__mk_de_DE=%C3%85M%C3%85%C5%BD%C3%95%C3%91&dchild=1&keywords=433+MHz+transmitter%2Freceiver&qid=1595084502&sr=8-2-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUE4TjA1MVVMUUlJMFImZW5jcnlwdGVkSWQ9QTA4NzE5NjZXVzlPQUlUTlE3MkgmZW5jcnlwdGVkQWRJZD1BMDk3MjE5N1M3UjhHSElTM0hRVyZ3aWRnZXROYW1lPXNwX2F0ZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZ0NsaWNrPXRydWU=)
2. [Female to Male Jumpers Wires](https://www.google.com/search?q=male+to+male+jumper+wires&rlz=1C1SQJL_esHN802HN802&sxsrf=ALeKk00iTI4JySkz61fJSAtjnsOf53DBEg:1594682230899&tbm=isch&source=iu&ictx=1&fir=Q6oWMuCSmXQtfM%252C2Z4CmtYD2n7WeM%252C_&vet=1&usg=AI4_-kTGNehSqp7R7cCFNkXXZz3Y7-i2Dw&sa=X&ved=2ahUKEwj40JufrsvqAhUFjqQKHWN1BacQ_h0wAHoECAoQBA&biw=1920&bih=1007#imgrc=RmkOxQoolx_UmM)
3. [433MHz outlet](https://www.amazon.de/dp/B075CMZ1FB/ref=sspa_dk_detail_0?psc=1&pd_rd_i=B075CMZ1FB&pd_rd_w=t8SqI&pf_rd_p=92f24b16-a91c-4592-9aed-95f14d3fd69a&pd_rd_wg=KY9hL&pf_rd_r=C477B9742DA2EAG2XVZ0&pd_rd_r=14ecb1ca-5668-4473-bce2-4ecb72070aa7&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUEyUzBPM01aSklBMTMyJmVuY3J5cHRlZElkPUEwNTg5NzkwMThDNzBZRFhGTENKSyZlbmNyeXB0ZWRBZElkPUEwNjk3ODU1RVhMRllFRTNNNTA0JndpZGdldE5hbWU9c3BfZGV0YWlsX3RoZW1hdGljJmFjdGlvbj1jbGlja1JlZGlyZWN0JmRvTm90TG9nQ2xpY2s9dHJ1ZQ==)

Resources

[Decode and Send 433 MHz RF Signals with Arduino](https://randomnerdtutorials.com/decode-and-send-433-mhz-rf-signals-with-arduino/)

[Remote power outlet home automation tutorial ESP8266](https://www.youtube.com/watch?v=O_cgfj6SiTY&feature=youtu.be)

LCD Touch Pad

List of Hardware needed

1. [3,2” TFT LCD Touch display for Arduino UNO, MEGA R3, Mega2560, Mega1280](https://www.amazon.de/dp/B00YPZ7VGW/ref=as_li_ss_tl?pd_rd_i=B00YQ08U70&pd_rd_wg=DxZm4&pd_rd_r=7AJ64GPA0STQ8K3J7S4D&pd_rd_w=2A7RS&linkCode=sl1&tag=howtomde-21&linkId=c51a6b8ae2d9ea89eeec8a750421c724&language=de_DE&th=1)
2. [TFT LCD Mega Shield 3,2”](https://www.amazon.de/Akozon-Schild-Erweiterungskarte-Display-Arduino/dp/B07GXP7WD4/ref=as_li_ss_tl?__mk_de_DE=%C3%85M%C3%85%C5%BD%C3%95%C3%91&keywords=TFT+LCD+f%C3%BCr+Arduino+3.2%22&qid=1584115635&sr=8-6&linkCode=sl1&tag=howtomde-21&linkId=858bff0019b40b574efe0822d3292626&language=de_DE)
3. [Male to Male jumper wires](https://www.google.com/search?q=male+to+male+jumper+wires&rlz=1C1SQJL_esHN802HN802&sxsrf=ALeKk00iTI4JySkz61fJSAtjnsOf53DBEg:1594682230899&tbm=isch&source=iu&ictx=1&fir=Q6oWMuCSmXQtfM%252C2Z4CmtYD2n7WeM%252C_&vet=1&usg=AI4_-kTGNehSqp7R7cCFNkXXZz3Y7-i2Dw&sa=X&ved=2ahUKEwj40JufrsvqAhUFjqQKHWN1BacQ_h0wAHoECAoQBA&biw=1920&bih=1007#imgrc=Q6oWMuCSmXQtfM)
4. [Arduino Mega2560](https://store.arduino.cc/arduino-mega-2560-rev3)

Resources

[Arduino TFT LCD Touch Screen Tutorial](https://howtomechatronics.com/tutorials/arduino/arduino-tft-lcd-touch-screen-tutorial/)

[Arduino Touchscreen Display - Using a Resistive Touchscreen](https://www.youtube.com/watch?v=_GT_sgbKQrc)

Control Solenoid Valve with Arduino

List of Hardware needed

1. [TIP120 Darlington Transistor](https://www.bc-robotics.com/shop/tip120-darlington-transistor/) ([I also found this link](https://www.reichelt.de/darlington-transistor-npn-60v-5a-2w-to-220ab-tip-120-p216618.html?r=1)) or [TIP127 Darlington](https://www.reichelt.de/darlington-transistor-pnp-100v-5a-2w-to-220ab-tip-127-p219491.html?PROVID=2788&gclid=Cj0KCQjw0rr4BRCtARIsAB0_48NorhVQLBSz4z1Pu2Xmdp1NRaaBrvMhAaGyQissicWEAv5_91OnHicaAs8tEALw_wcB&&r=1) Transistor
2. [One 1K Ohm Resistor](https://www.bc-robotics.com/shop/14-watt-resistor/)
3. [Two 1N4001 Diode](https://www.bc-robotics.com/shop/diode-rectifier-1a-50v/)
4. [12 V Power Supply](https://www.amazon.de/EFISH-DC-Netzteil-LED-Streifen-Fischbecken-Lautsprecher/dp/B07KZDFKPW/ref=sr_1_2_sspa?__mk_de_DE=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crid=A8PSIV0DT1UP&dchild=1&keywords=12v+power+supply&qid=1595248629&sprefix=12v+POWER%2Caps%2C206&sr=8-2-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUEzQTBWRTdaMkFBVTc4JmVuY3J5cHRlZElkPUExMDIyMjA3M0FaNktaTFNKMThYTSZlbmNyeXB0ZWRBZElkPUEwMTgyMzcxM1JQS1JNREFEVjlIVCZ3aWRnZXROYW1lPXNwX2F0ZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZ0NsaWNrPXRydWU=)

Resources

[Controlling a Solenoid Valve with Arduino](https://www.bc-robotics.com/tutorials/controlling-a-solenoid-valve-with-arduino/)

External Hardware needed:

1. Breadboard
2. 2 LEDs
3. Black tape to cover wires (insulator)
4. Copper wire to extend the cables.

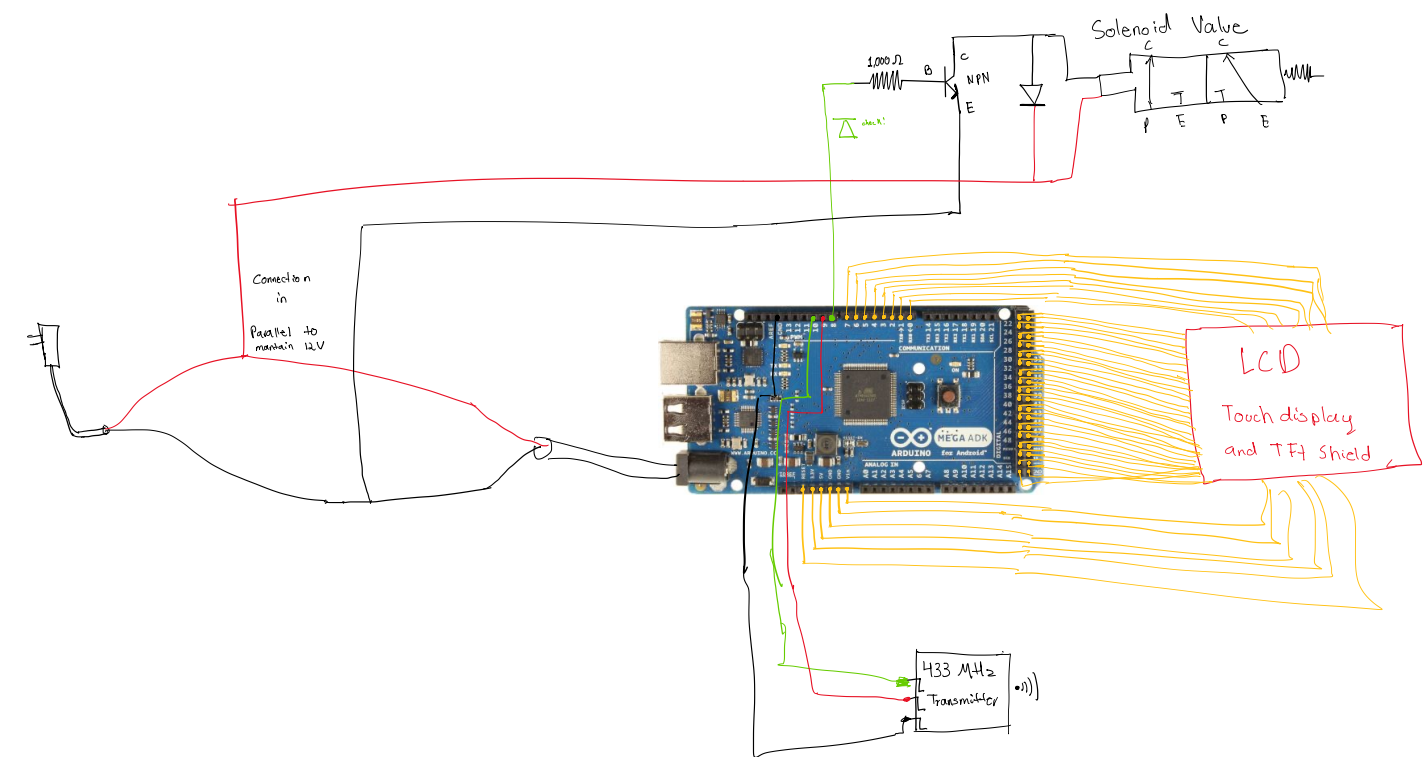
More useful resources:

[Arduino Relay Tutorial – Control High Voltage Devices with Arduino](https://howtomechatronics.com/tutorials/arduino/control-high-voltage-devices-arduino-relay-tutorial/)

[Turn any Appliance into a Smart Device with an Arduino Controlled Power Outlet](https://www.circuitbasics.com/build-an-arduino-controlled-power-outlet/)

[Arduino Wireless Communication – NRF24L01 Tutorial](https://howtomechatronics.com/tutorials/arduino/arduino-wireless-communication-nrf24l01-tutorial/)

Arduino Wireless Network with Multiple NRF24L

Final Circuit