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## ***What is this project about?***

Have you ever wished you could skip the procedures necessary to manage the media on your personal computer? While saving time and effort, keyboard shortcuts frequently need more than one key, and finding the appropriate combination of keys can be challenging. The MediaPad can be used in this situation. With buttons and rotary encoders, as well as a connection to an Arduino board on the other end, it can be programmed and modified to fulfill the needs of the user. At this time, the requirements are quite straightforward: Controls for PC sound volume, music playback, and certain common keyboard shortcuts.

Nowadays, it is well accepted that comfort and ergonomics increase productivity. It might be very helpful to have a desk lamp to illuminate a certain area so you can see and type or read more easily. A desk lamp with an ON/OFF switch can complete this purpose. The lack of a dimmer to control the amount of light the lamp emits made using it unpleasant. As a result, our dimming mechanism is located on the same case to resolve this issue.

## ***PART 1 : ARDUINO MEDIA PAD***

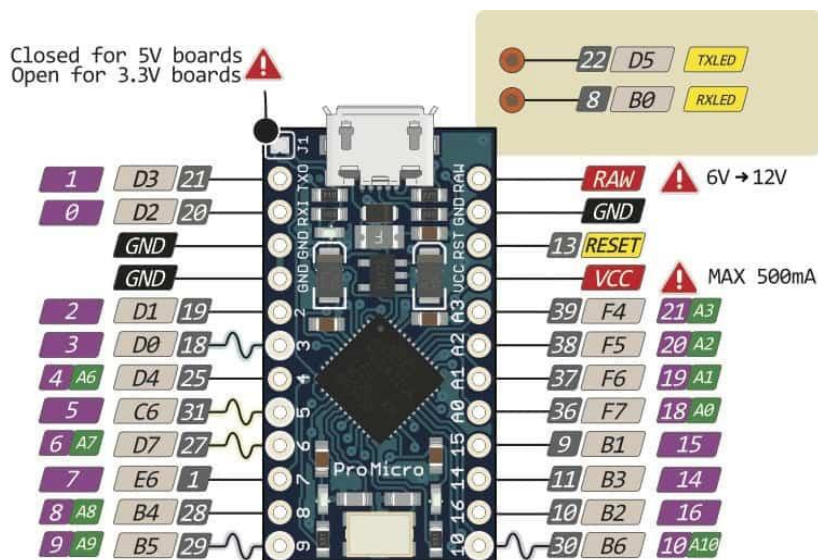
### ***What do we need:***

- Arduino Pro Micro board
- Rotary encoder modules
- Momentary pushbutton switches
- Connecting wires
- Breadboard
- Cable connectors with screw

## Arduino Pro Micro

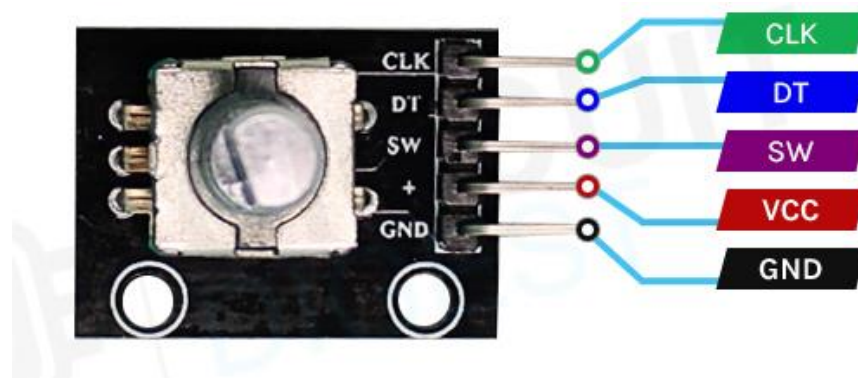
Arduino is an open source computer hardware and software company, project, and user community that designs and manufactures single-board microcontrollers and microcontroller kits for building digital devices and interactive objects that can sense and control objects in the physical and digital world.

For our case , we used a clone of the original Arduino board , called Leonardo Pro Micro. This board houses the ATmega32u4 microcontroller capable of emulating a USB HID device such as a keyboard or mouse.



## ***Rotary Encoder Module Sensor (KY040)***

Rotary encoder is a rotary input device that provides an indication of how much the knob has been rotated and what direction it is rotating in.



## Momentary pushbutton switches

This is a standard 12mm square momentary button, a great button for user input.



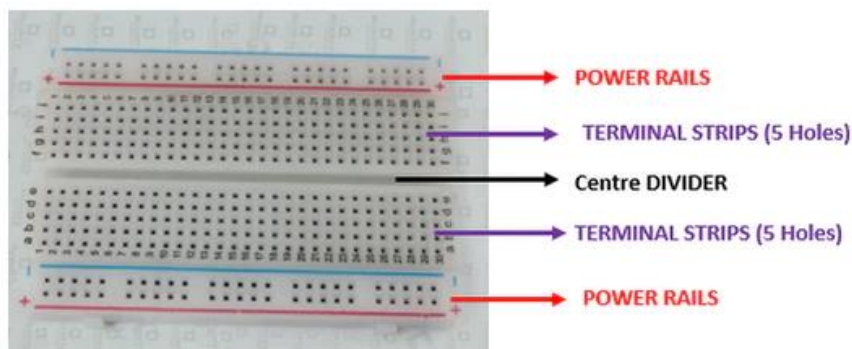
## Connecting wires

Insulated 1 pin connecting wires with length 150 mm and different colors.



# Breadboard

This is a breadboard that is used to connect components without the use of solder. It simplifies the process of prototyping circuits. This breadboard has two power rails on both sides as well as 400 contact points. These contact points are holes on the **breadboard** into which wires and components can be inserted.





## Cable connectors with screw

They are commonly used as an alternative to soldering of cables together, since they are quicker to install and unlike soldered connections allow easy removal for future modifications.

