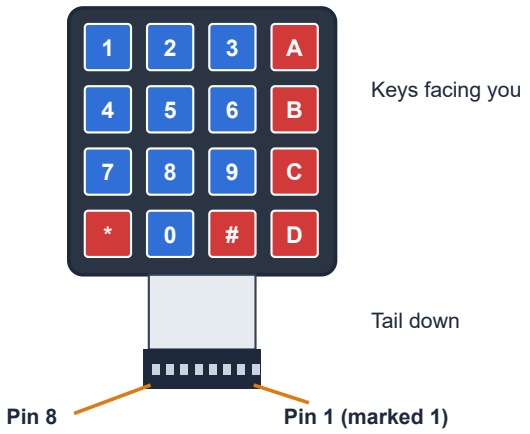
4x4 Membrane Keypad

Plug it into an Uno or Nano with eight jumper wires, install the Keypad library and see each key print in the Serial Monitor.

1 FIND PIN 1



2 WIRE IT TO AN UNO OR NANO

Start from the socket marked **1**, on the right with the keys facing you, and work leftwards.

KEYPAD PIN	LINE	UNO / NANO PIN
1	Row 1 (1 2 3 A)	**D9**
2	Row 2 (4 5 6 B)	**D8**
3	Row 3 (7 8 9 C)	**D7**
4	Row 4 (* 0 # D)	**D6**
5	Column 1 (1 4 7 *)	**D5**
6	Column 2 (2 5 8 0)	**D4**
7	Column 3 (3 6 9 #)	**D3**
8	Column 4 (A B C D)	**D2**

WHAT YOU NEED

- An Uno, Nano or similar board and its USB cable
- 8 male-to-male jumper wires (not included)
- The Arduino IDE on your computer
- No resistors, no power wire and no soldering

3 INSTALL THE LIBRARY AND UPLOAD

1. In the Arduino IDE open **Tools > Manage Libraries**, search **Keypad** and install **Keypad by Mark Stanley, Alexander Brevig**.
2. Paste this sketch, choose your board and port, and upload.

```
#include <Keypad.h>

char keys[4][4] = {
  {'1','2','3','A'},
  {'4','5','6','B'},
  {'7','8','9','C'},
  {'*','0','#','D'}
};
byte rowPins[4] = {9, 8, 7, 6};
byte colPins[4] = {5, 4, 3, 2};
Keypad pad = Keypad(makeKeymap(keys),
  rowPins, colPins, 4, 4);

void setup() {
  Serial.begin(9600);
}

void loop() {
  char k = pad.getKey();
  if (k) Serial.println(k);
}
```

4 WHAT YOU SHOULD SEE

Open **Tools > Serial Monitor** and set it to **9600 baud**. Each key you press prints once, for example pressing 5 prints **5**. Holding a key does not repeat it.

IF IT DOES NOT WORK

WHAT YOU SEE	CHECK
Nothing prints at all	Serial Monitor set to 9600 baud, the right port chosen, and the connector pushed fully onto the wires.
The wrong key prints, in a pattern	The plug is the other way round or rows and columns are crossed. Check that pin 1 goes to D9, or swap the two pin lists in the sketch.
One whole row or column never prints	That one wire is loose or on the wrong pin. Push the jumper in firmly and follow the table above.
Extra keys when pressing several	Normal for a key matrix. Press one key at a time.
Using an ESP32	Use any eight general pins, but not GPIO 34 to 39 or the boot pins 0, 2, 12 and 15, and change the pin lists to match.

This guide online

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