**Installing Arduino IDE and libraries for an LED Matrix project**

1. Grab Arduino IDE desktop version from

<https://www.arduino.cc/en/main/software>

1. Boot the IDE, then under File >Preferences there is a tab for ‘additional board urls’.

Click the icon to the right of it, then add the following URLs line by line:

https://dl.espressif.com/dl/package\_esp32\_index.json,

https://arduino.esp8266.com/stable/package\_esp8266com\_index.json, <http://adafruit.github.io/arduino-board-index/package_adafruit_index.json>

1. Open Boards Manager from Tools > Board menu and install *esp32* platform
2. Select your ESP32 board from Tools > Board menu after installation
3. Upload the [blink sketch](https://github.com/bobdillon/LED_matrix/blob/master/blink_esp32vroom.ino) and test for connection and reaction.
4. Tools > Manage Libraries … type “pxma”, install the only library that comes up. Install Adafruit GFX library.
5. Upload “hello world” sketch, note that you must hold the ‘boot’ button for a few seconds after compiling for successful upload.