

NeoPixel Workshop Bill of Materials

Designed by W. Chayne Bowmer

Email: wcb5186@psu.edu

Intended Participants: 30

Description:

In this workshop, we'll learn how to bring colorful lights to life using a small programmable computer (a microcontroller) and special LEDs called *neopixels*. Neopixels are tiny lights that can each display a full range of colors, and the best part is that they only need a single data wire to tell them what to do. This makes them much easier to use than traditional LEDs with lots of wiring.

Participants will be guided step by step on how to connect the microcontroller to the neopixels, then write simple programs that control the colors, animations, and patterns they create. The workshop is designed to be very approachable, even for people with no background in electronics or coding. By the end, everyone will have hands-on experience making their own colorful light effects and the confidence to explore more creative projects on their own.

USB to Micro USB Cables 10-Pack

Quantity: 3 (30 Total)


These cables will be used to power and program the microcontroller.

Cost: \$38.13

https://www.amazon.com/Durable-Android-Charger-Charging-Stations/dp/B0DYF41LLR/ref=sr_1_3?crid=QE5C0EC090TG&dib=eyJ2ljojMSJ9.p_JjanPgPPFRE1m4H9sZWsiJ8hyjghbWfxZDOA53pTwWajUDQpRTzZQtetTgfuWf6q1_cxZ4UXO1MW8NxQyxurrOC5ZAN9dKlulRHHoPp1D_SbLdFN50CZaXRFdqNK6q3qAfU9X9V3bnwiEHn6GDXJ3dUuMyYWxEv_2zhT_vd98wNn03A4D88ig6YI_XmuCNuzDoVUDRXLXYIPAXdQMzgiHBbnKmRKQwS5CFKGiL58Wkz7RlbfFm_Fl8KWn5Zd-rIE5e8_11IBKV1G7EYwJELh3oMdhDmAwJ5Twzl-ilbc.hmWWt-EpibsYPIsuHGwy39a7_KhiQl_ZWrWVAvrLpZs&dib_tag=se&keywords=10%2Bpack%2Bshort%2Bmicro%2Busb%2Bcable%2B1ft%2C%2Bbulk%2B12%2Binch&qid=1757803516&s=electronics&sprefix=10%2Bpack%2Bshort%2Bmicro%2Busb%2Bcable%2B1ft%2C%2Bbulk%2B12%2Binch%2Celectronics%2C98&sr=1-3&th=1

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ESP32-WROOM-32 Development Board 6-Pack

Quantity: 5 (30 in total)


This will be our microcontroller to program our NeoPixels. It can also be used as a resource for future workshops. It is very versatile.

Cost: \$140.40

https://www.amazon.com/ESP-WROOM-32-Development-Aideepen-Compatible-MicroPython/dp/B0BQJ8BTVB/ref=sr_1_3?crid=SWLZSMV3TLQ9&dib=eyJ2ljojMSJ9.7AcU7hw9_EtJvuXYEDKf-pVXCJ6X8k-R5MRuTDH0RYE8p4tv9_UAA6ff7o5d0Vf2SsyJZHhK9fxQ-2beopXU1AI99Wv18fZf3GGUY-ZloPc0MameCLjzKMKtgsXQjaOF897AduHyWtt_JtBxN9NPgmtf3KEDPe8QxGEk_mv-Q0wg5L8ap19u0y_rE0KPDQpGMVCCeE2bHCbouUzQN56GUZq2LH_p-M2k22D-MhDdiqMALSJ6RxqJwpPuQcuuLzO4lDeNzeEujpUmdddzuyMjBGR7owzk8HgAiEgcCAVfqRM.65Xx9FbsnORf7q4HcEgF2QQ5TXNeGWFTWJ6-NXY1MhE&dib_tag=se&keywords=6%2Bpack%2Besp32&qid=1757803660&s=electronics&sprefix=6%2Bpack%2Besp32%2Celelectronics%2C122&sr=1-3&th=1

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NeoPixel Strip (300 Pixels)

Quantity: 1

NeoPixel reel that will supply each person 7-8 pixels

Cost: \$22.24

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Total Cost: \$359.72