Arduino's overview

Entry-Level Boards

1. Arduino UNO R4 Minima

- **Price**: ~$20
- **Main Purpose**: Beginner-friendly board for learning electronics and programming.
- **Capabilities**: HID support (keyboard/mouse emulation), no built-in Wi-Fi or Bluetooth.
- **Memory**: 32 KB SRAM, 256 KB Flash, 8 KB EEPROM.

2. Arduino UNO R4 WiFi

- **Price**: ~$27
- **Main Purpose**: Enhanced UNO for IoT and creative projects with wireless features.
- **Capabilities**: Wi-Fi, Bluetooth (via ESP32-S3), HID support, 12x8 LED matrix, Qwiic connector.
- **Memory**: 32 KB SRAM (RA4M1), 512 KB SRAM (ESP32-S3), 256 KB Flash (RA4M1).

3. Arduino Nano Every

- **Price**: ~$13
- **Main Purpose**: Compact, affordable board for small projects and prototyping.
- **Capabilities**: No Wi-Fi or Bluetooth, no HID support natively.
- **Memory**: 6 KB SRAM, 48 KB Flash.

4. ### Arduino Leonardo

   - **Price**: ~$25
   - **Main Purpose**: USB-focused projects and HID applications.
   - **Capabilities**: Native USB communication, HID support (can act as keyboard/mouse), no Wi-Fi or Bluetooth.
   - **Memory**: 2.5 KB SRAM, 32 KB Flash, 1 KB EEPROM

Enhanced Boards

4. ### Arduino Mega 2560 Rev3

   - **Price**: ~$48
   - **Main Purpose**: Advanced projects needing many I/O pins and higher memory.
   - **Capabilities**: No Wi-Fi or Bluetooth, no HID support natively, 54 digital I/O pins.
   - **Memory**: 8 KB SRAM, 256 KB Flash, 4 KB EEPROM.

5. ### Arduino Due

   - **Price**: ~$45
   - **Main Purpose**: High-performance projects requiring 32-bit processing.
   - **Capabilities**: No Wi-Fi or Bluetooth, HID support, DAC for analog output.
   - **Memory**: 96 KB SRAM, 512 KB Flash.

IoT-Focused Boards

6. ### Arduino Nano 33 IoT

   - **Price**: ~$25

- **Main Purpose**: Small IoT projects with wireless connectivity.
- **Capabilities**: Wi-Fi, Bluetooth, HID support, onboard crypto chip.
- **Memory**: 32 KB SRAM, 256 KB Flash.

7. ## Arduino Nano 33 BLE

- **Price**: ~$28
- **Main Purpose**: IoT and wearable projects with Bluetooth focus.
- **Capabilities**: Bluetooth Low Energy (BLE), HID support, no Wi-Fi, onboard IMU.
- **Memory**: 256 KB SRAM, 1 MB Flash.

8. ## Arduino Nano ESP32

- **Price**: ~$20
- **Main Purpose**: Compact IoT with high-performance ESP32 capabilities.
- **Capabilities**: Wi-Fi, Bluetooth, HID support, MicroPython support.
- **Memory**: 520 KB SRAM, 16 MB Flash (external).

9. ## Arduino MKR WiFi 1010

- **Price**: ~$40
- **Main Purpose**: IoT projects with secure wireless communication.
- **Capabilities**: Wi-Fi, Bluetooth, HID support, onboard crypto chip.
- **Memory**: 32 KB SRAM, 256 KB Flash.

10. ## Arduino GIGA R1 WiFi

- **Price**: ~$75
- **Main Purpose**: Advanced, large-scale projects with multimedia and connectivity.
- **Capabilities**: Wi-Fi, Bluetooth, HID support, dual-core MCU, camera/display support.
- **Memory**: 576 KB SRAM (M7 core) + 256 KB (M4 core), 2 MB Flash.

11. ## Arduino Portenta H7

- **Price**: ~$110
- **Main Purpose**: Industrial-grade, high-performance IoT and AI applications.
- **Capabilities**: Wi-Fi, Bluetooth, HID support, dual-core MCU, high-speed I/O.
- **Memory**: 2 MB SRAM (total), 16 MB Flash (external).

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