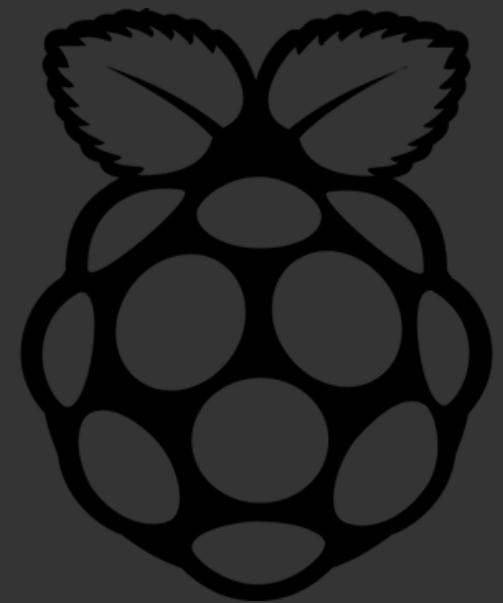


Raspberry Pi

Presented by Sadra Yosefabadi , Nima Soltani , Javad Zaree

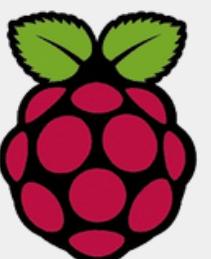
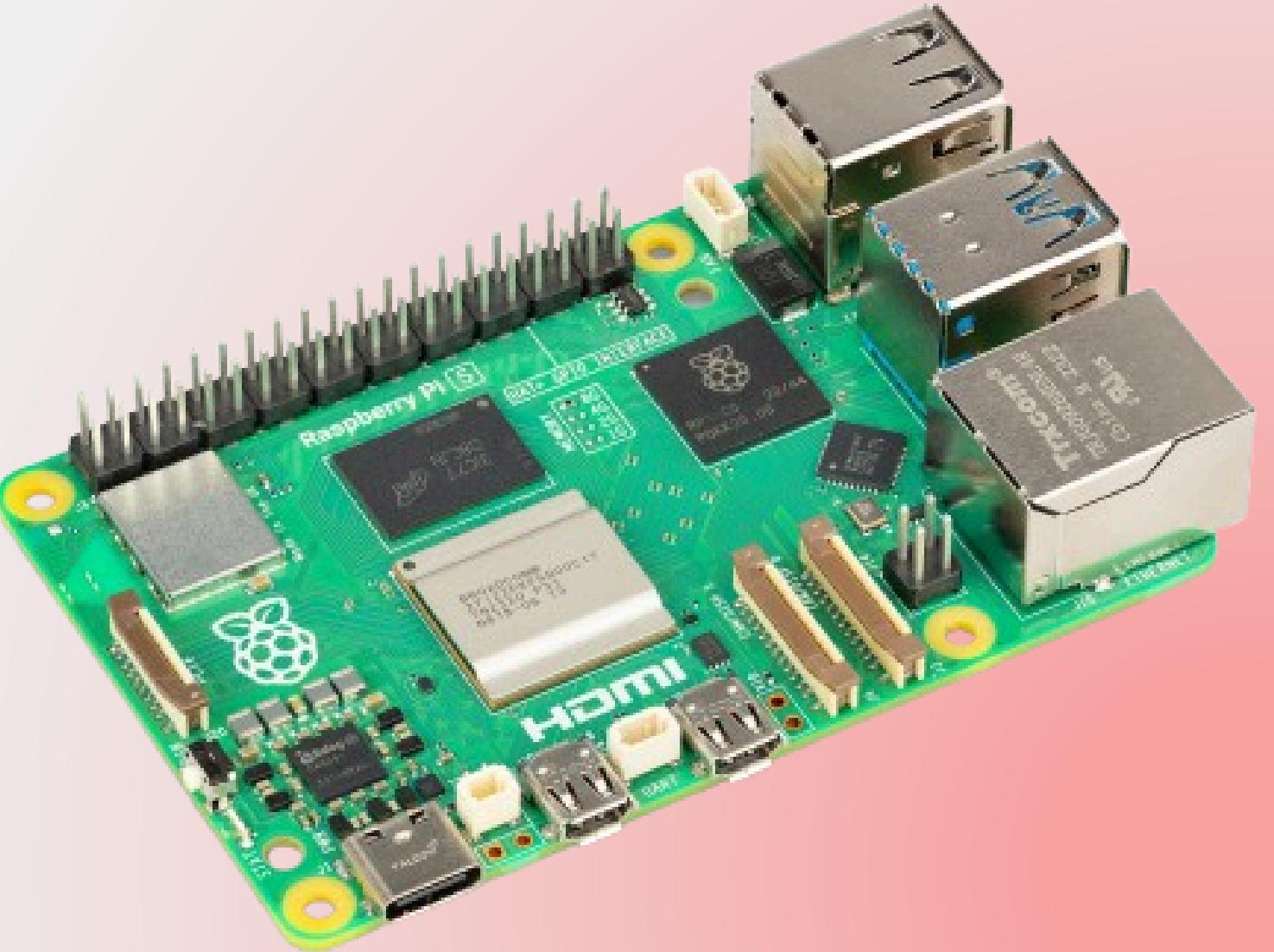


What is Raspberry Pi ?

- The Raspberry Pi is a small, affordable, and versatile computer that's about the size of a credit card. It was developed by the Raspberry Pi Foundation, a UK-based charity, to promote computer science education, particularly in schools and developing countries.
- A credit card-sized computer
- Initially created to promote computer science education.
- Can run Linux-based operating systems like Raspberry Pi OS (Rasbian)

Features of Raspberry Pi

- **Affordable** : Costs between \$5 to \$100
- **Compact** : Fits in your pocket
- **Versatile** : HDMI, USB, Ethernet, and GPIO pins
- **Customizable** : Supports various operating systems and software



RaspberryPi



■ Processor (CPU)

ARM-based processors

■ GPU

capable of handling HD and 4K video playback

■ Memory (RAM)

commonly 2GB, 4GB, 8GB, and higher

■ Storage

SD card slot for the primary boot and storage

USB support for external drives

■ Connectivity

Ethernet ports
Wireless LAN
Bluetooth 5.0

■ Power

USB-C
5V



Hardware

■ Video/Audio Outputs

HDMI(MicroHDMI or Full size)

3.5mm jack

05

■ USB Ports

Multiple USB 2.0 and USB 3.0 ports

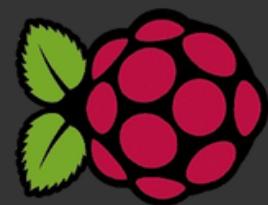
USB-C for power and data

■ GPIO Pins

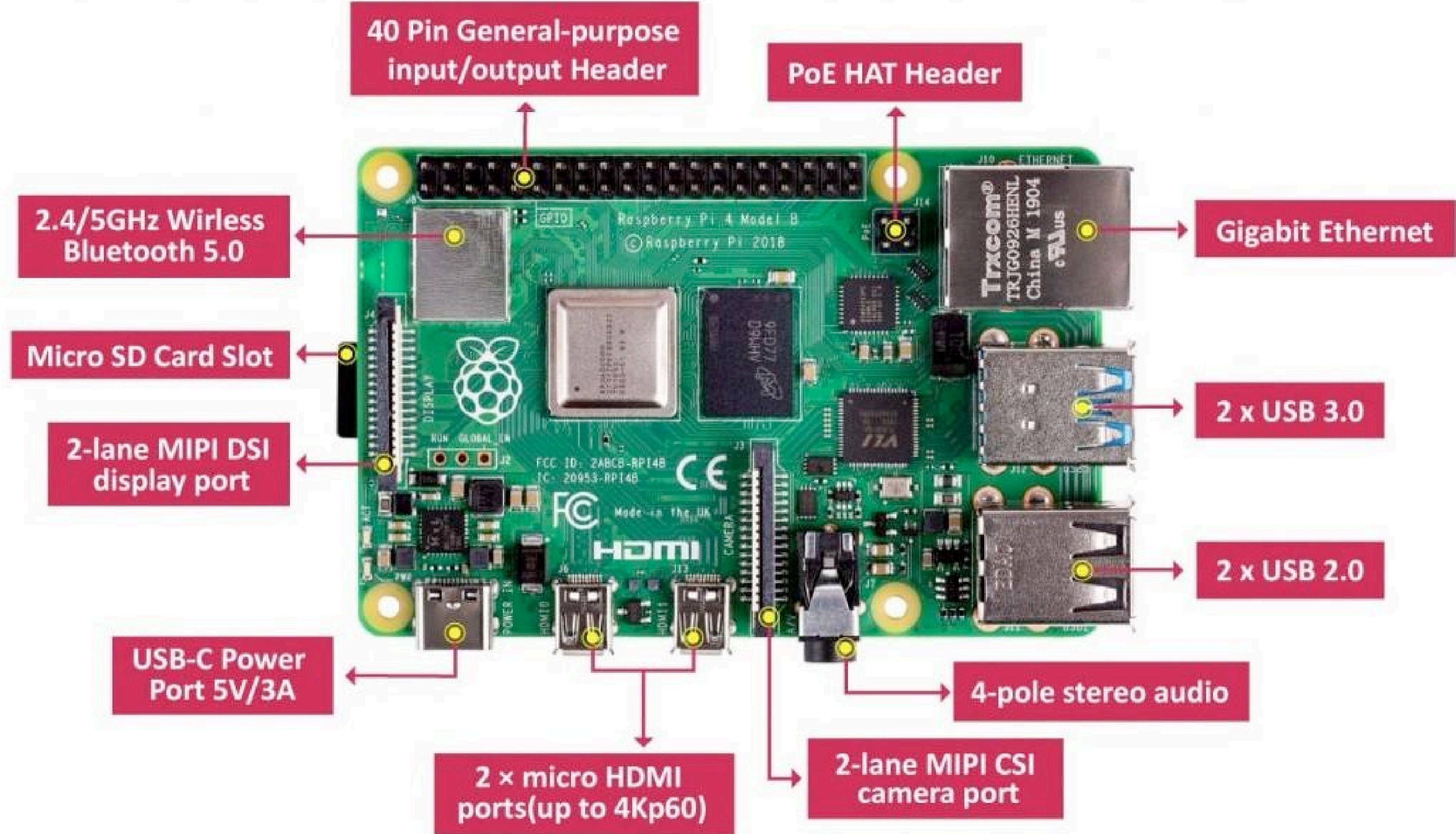
General-Purpose Input/Output pins for hardware interfacing

40 Pins





Raspberry Pi



Software

Raspberry Pi supports a variety of operating systems, including its official OS and third-party options.

- **Raspberry Pi OS (Raspbian)** : based on Debian Linux / Lightweight, customizable, and user-friendly / Includes pre-installed applications like Chromium, Python & ...
- **Ubuntu** : Full-featured Linux distribution for desktop or server use
- **Kali Linux**: Penetration testing and ethical hacking tools.
- **RetroPie** : Turn Raspberry Pi into a retro gaming console
- **Home Assistant OS** : home automation systems
- **Windows IoT Core** : A simplified version of Windows designed for IoT applications.

Rasbian

Ubuntu

Kali Linux

Retro Pie

Home Assistant OS

Windows IoT Core



Education

Learn programming,
Linux, and electronics

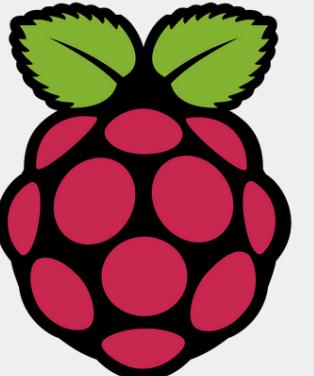
DIY Projects

Build smart home devices,
weather stations, or robots

Media Center

stream videos and
music

Applications



IoT Development

Internet of Things devices

Industrial Use

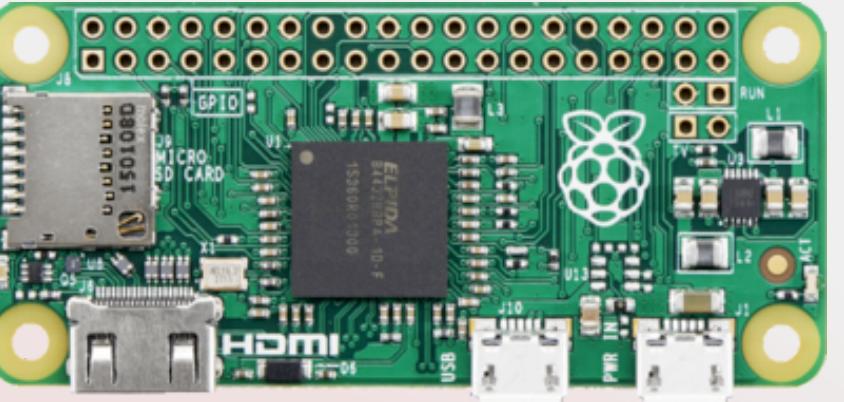
Implement automation and
monitoring systems

Firewall or Router

basic firewall or router to
enhance small network

09

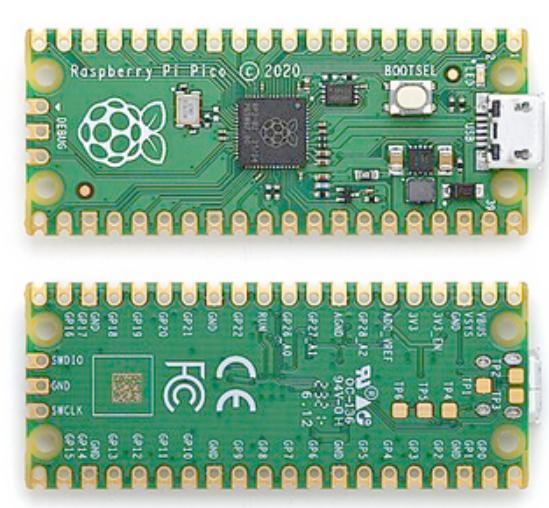
Series and generations



Raspberry Pi Zero, 2015



Raspberry Pi 3, 2018



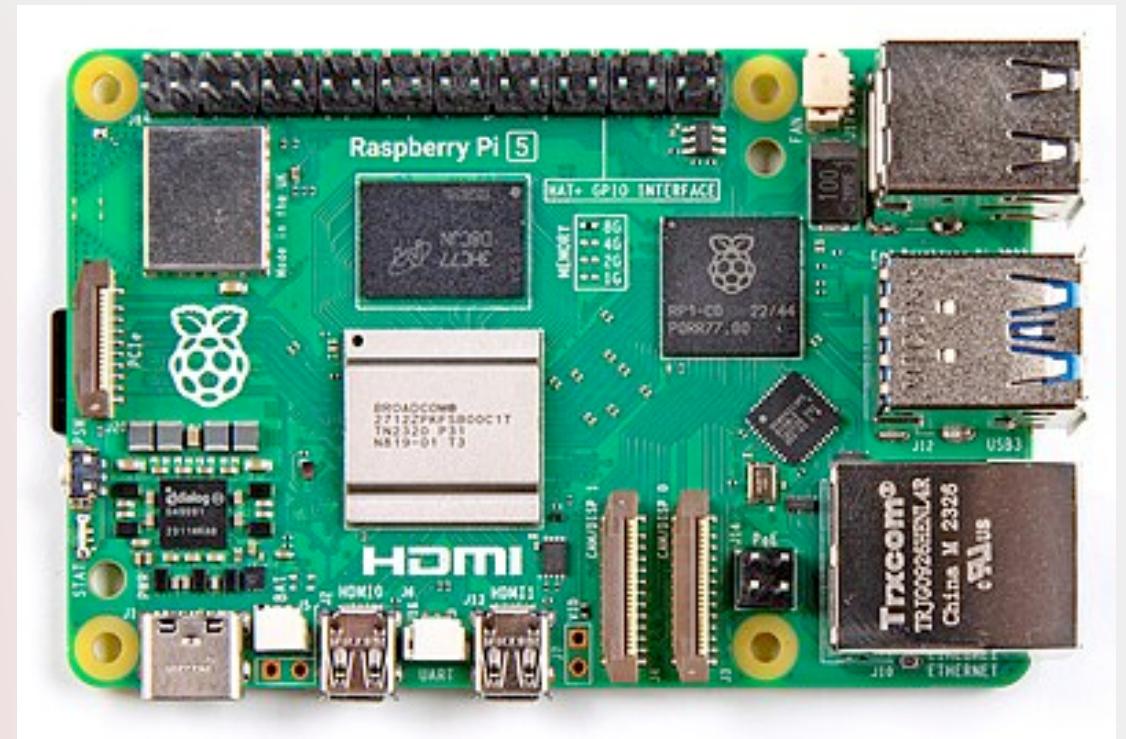
Raspberry Pi Pico,
2021



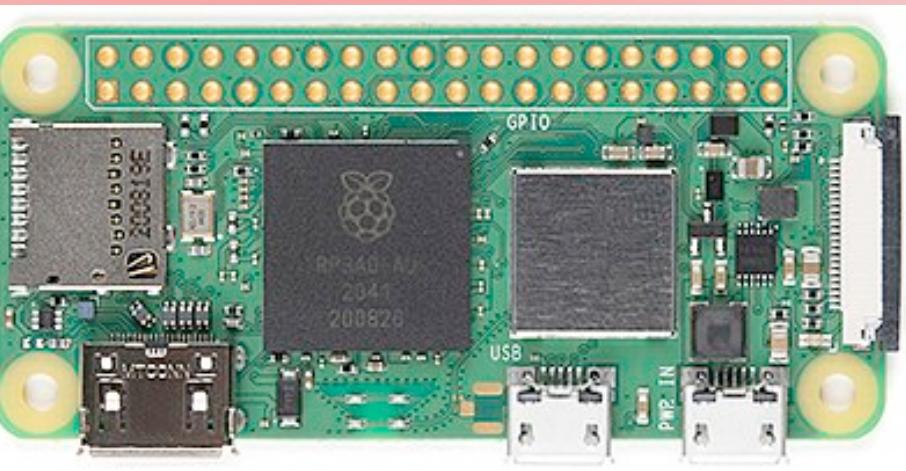
Raspberry Pi 4, 2019



Raspberry Pi 400, 2020



Raspberry Pi 5, 2023



Raspberry Pi Zero 2, 2021

2.4GHz quad-core 64-bit Arm Cortex-A76 CPU

8GB SDRAM

Dual-band (2.4GHz and 5.0GHz) IEEE 802.11b/g/n/ac Wi-Fi®

32GB microSD included

Bluetooth 5.0

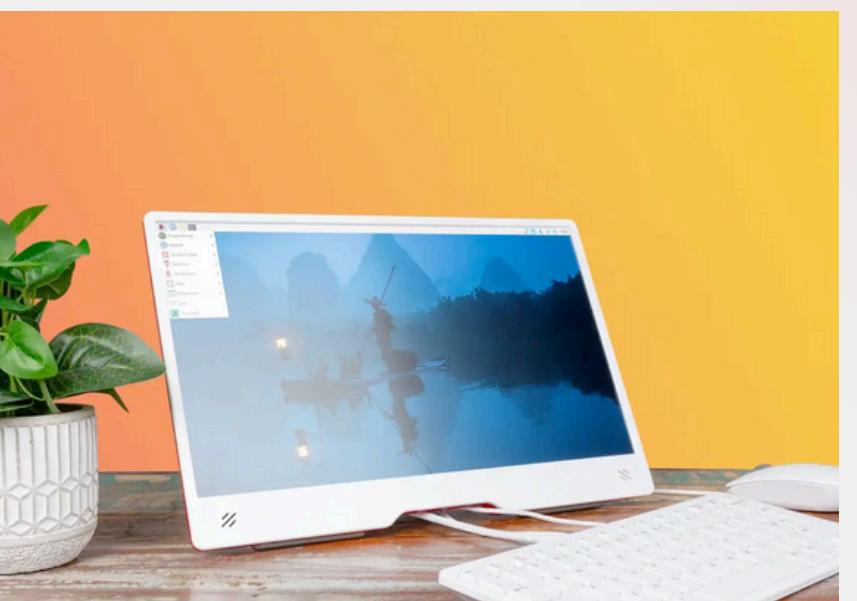
Gigabit Ethernet

2 × USB 3.0 port & 1 × USB 2.0 port

Horizontal 40-pin GPIO header

2 × micro HDMI® port (supports up to 4Kp60)

Power: 5V



Raspberry pi 500

Thank You

