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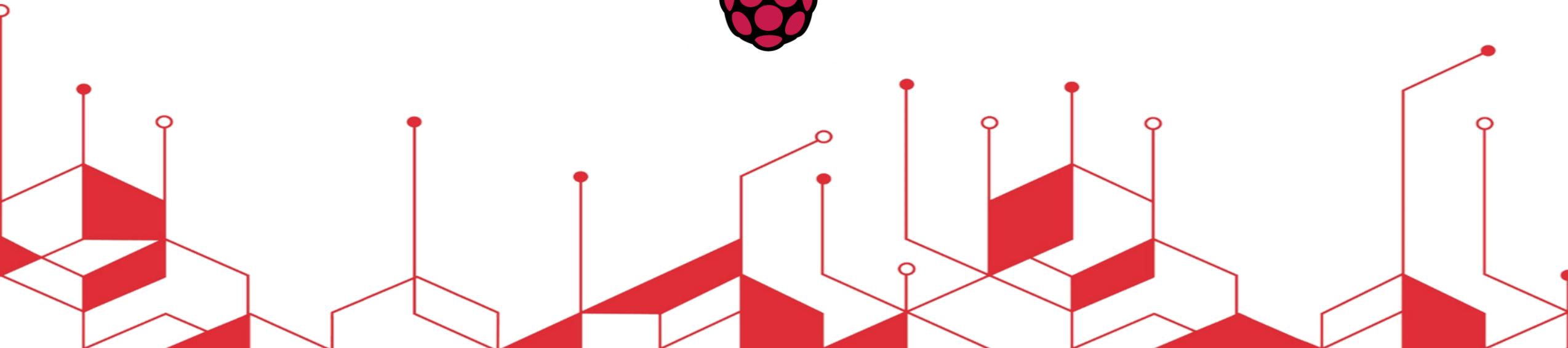
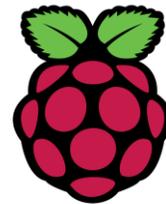


Remote Lab For Engineering Project
Erasmus+ Program

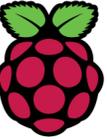
Raspberry Pi -Take Home Lab

Lab Experiment # 1

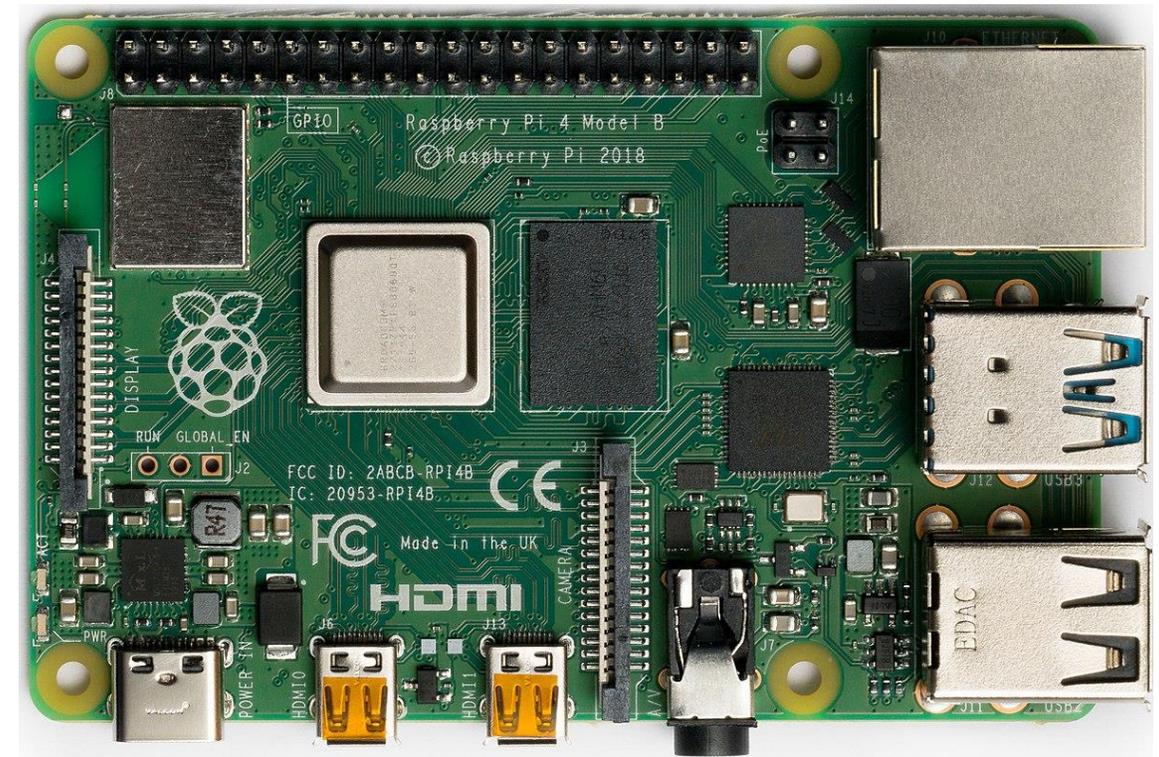
Introduction to Raspberry Pi



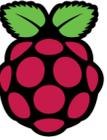
What is Raspberry Pi



- It is a fully featured micro-computer squashed onto a circuit board measuring approximately 9cm x 5.5cm. It's designed to be a versatile and affordable platform for learning programming, tinkering with electronics, and building projects.
- **Key Features:**
 - Low-cost.
 - Compact size- Credit-card sized.
 - Versatile Applications- Can be used for a wide range of tasks, from web browsing and gaming to robotics and home automation.
 - Expandable- Supports various peripherals like keyboards, mice, monitors, and cameras.
 - Community-Driven- A strong and active community of users and developers.

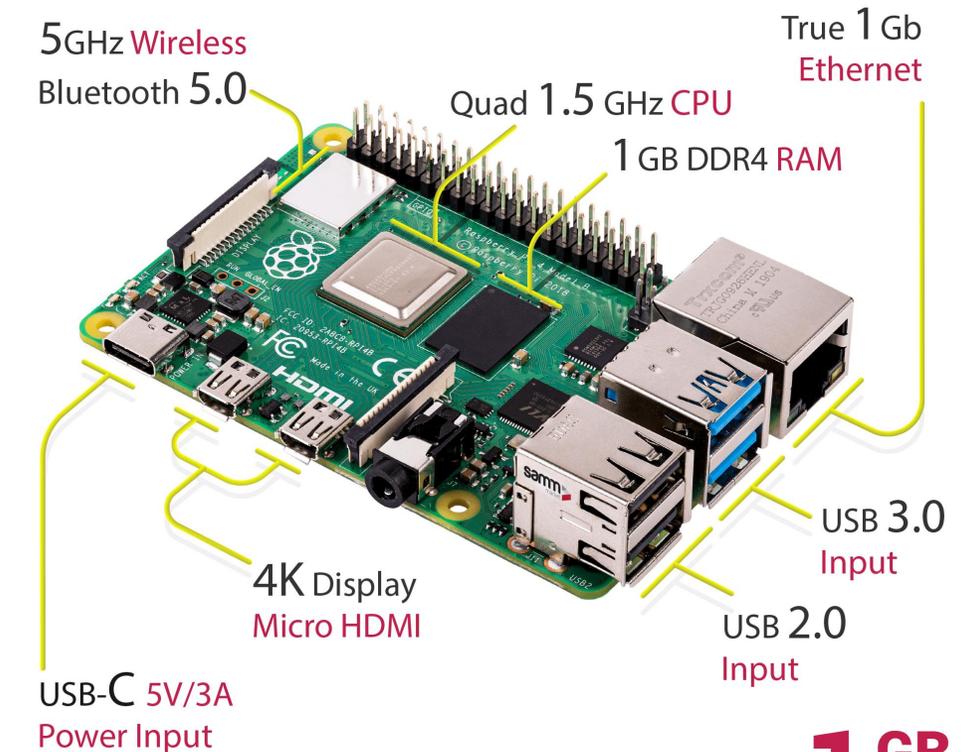


Raspberry Pi 4 Model B Features



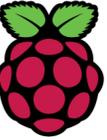
- Processor- 1.5GHz 64-bit Quad-core ARM, Cortex-A72 CPU, 1.5GHz Broadcom VideoCore VI GPU
- Broadcom VideoCore VI GPU (up to 1.5GHz)
- Connectivity- Gigabit Ethernet port, Dual-band 2.4GHz and 5GHz Wi-Fi, Bluetooth 5.0
- Ports- 2x USB 3.0 ports, 2x micro-HDMI ports, 3.5mm headphone jack, USB-C power input (5V/3A)
- RAM- 1GB, 2GB, 4GB, or 8GB LPDDR4 RAM options

Raspberry Pi | Model 4 B



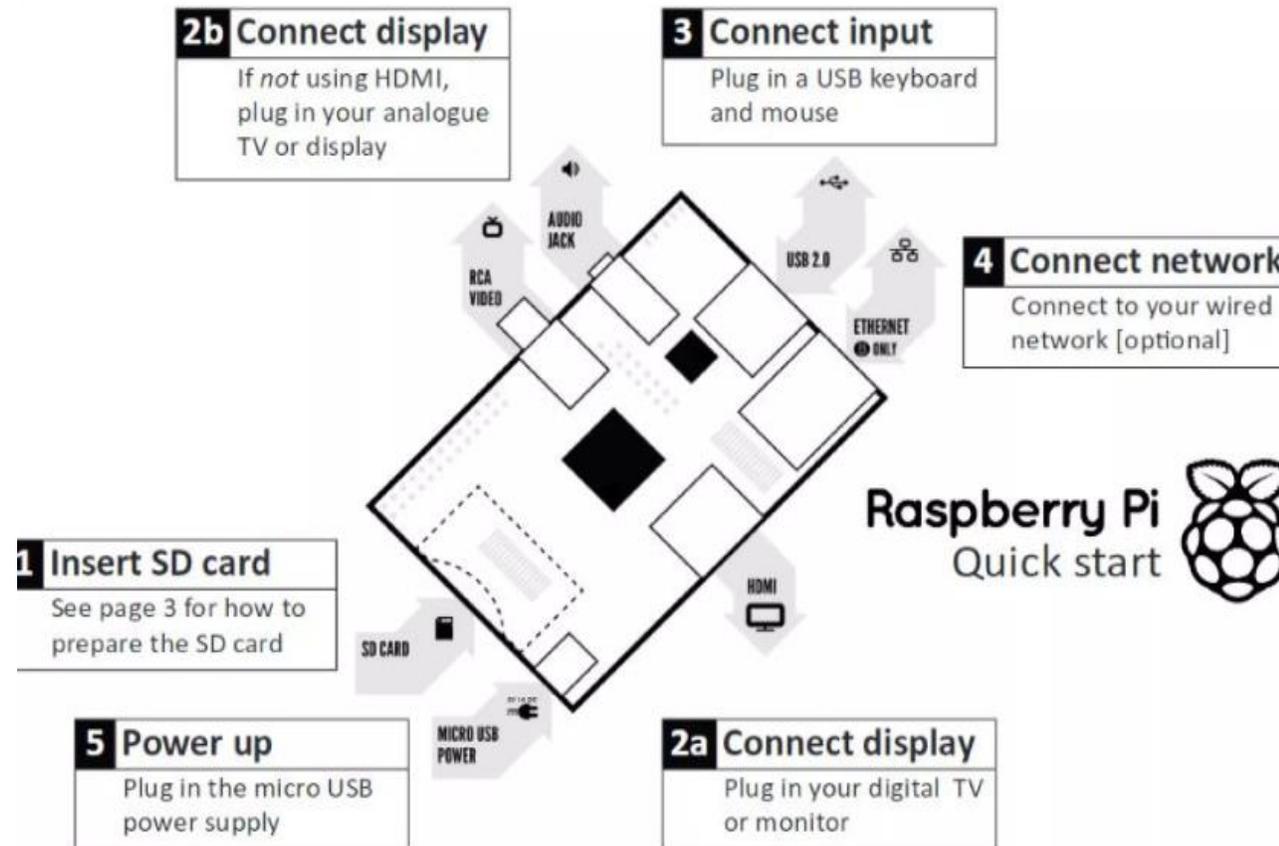
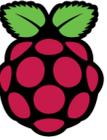
1 GB
RAM

Raspberry Pi - Setup

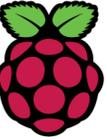


- Raspberry Pi 4 model B board.
- Power Source: 5V/2A DC Micro USB Adapter.
- Display: VGA MONITOR/HDMI Screen or TV/LCD.
- SD Card: Minimum 4GB
- USB Mouse and Keyboard.
- Internet (if required).

Pi Card - Setup



Preparing the SD Card



- Download RPI OS (Raspbian).
- Unzip the file.
- Download the Win32DiskImager software.
- Writing Raspbian to the SD card.
- Booting the Raspberry pi for the first time.
- Internet (if required).
- On first boot you will come to the Raspberry pi-config window:
 - Default username: PI
 - Default password: raspberry

Install and set up raspberry pi OS into SD card

- Download RPI OS (Raspberry Pi Imager)

- <https://www.raspberrypi.com/software/>



- Insert the SD card into the RPI board.



Use the power cable to power up your RPI board.

- Connect your RPI board with a display screen using HDMI cable.



- Booting your Raspberry pi.

