

# Raspberry Pi

Uvod

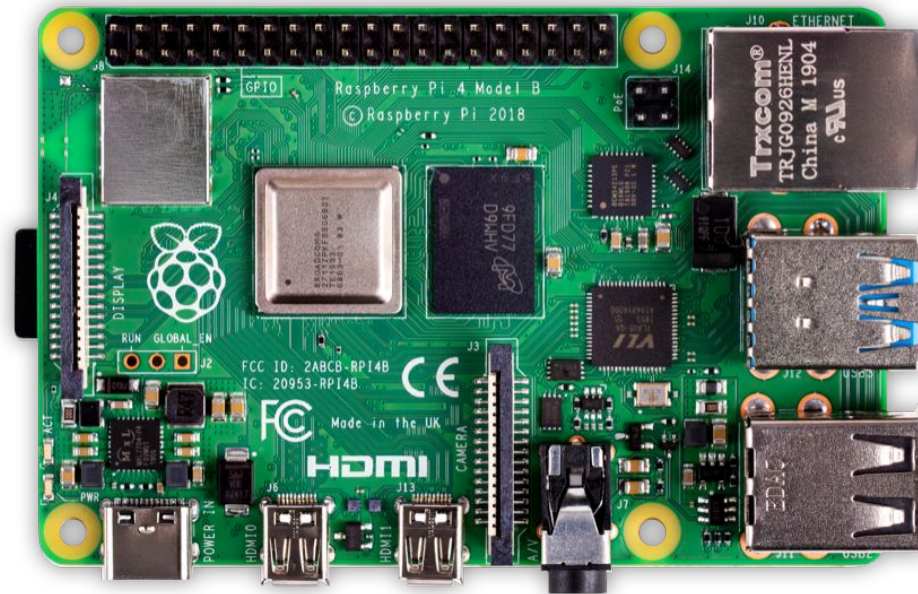
# Sadržaj

- Šta je RPi?
- Modeli RPi uređaja
  - RPi 3 detaljnije
- Raspbian - najčešće korišćeni OS
- Kako ćemo programirati RPi



# RPi uređaj - Uvod

- Praktično RPi je mali računar
- Radi sa operativnim sistemom
- Najčešće primene...



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# Modeli RPi uređaja

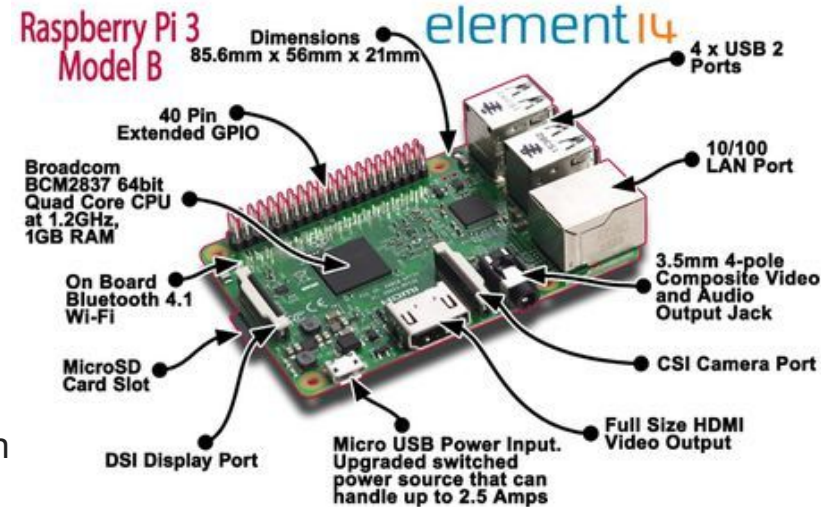
	Raspberry Pi 3 Model B	Raspberry Pi 2 Model B	Raspberry Pi Model B+
Processor Chipset	Broadcom BCM2837 64Bit Quad Core ARM Cortex A53 at 1.2GHz	Broadcom BCM2836 32Bit Quad Core ARMv7 at 900MHz	Broadcom BCM2835 32Bit ARMv6k at 700MHz
GPU	Videocore IV @ 400MHz	Videocore IV @ 250MHz	Videocore IV @ 250MHz
Processor Speed	QUAD Core @1.2 GHz	QUAD Core @900 MHz	Single Core @700 MHz
RAM	1GB SDRAM @ 400 MHz	1GB SDRAM @ 400 MHz	512 MB SDRAM @ 400 MHz
Storage	MicroSD	MicroSD	MicroSD
USB 2.0	4x USB Ports	4x USB Ports	4x USB Ports
Max Power Draw/voltage	2.5A @ 5V	1.8A @ 5V	1.8A @ 5V
GPIO	40 pin	40 pin	40 pin
Ethernet Port	Yes	Yes	Yes
WiFi	Built in	No	No
Bluetooth LE	Built in	No	No
Video Output	HDMI/Composite via RCA Jack	HDMI/Composite via RCA Jack	HDMI/Composite via RCA Jack
Audio Output	3.5mm Jack	3.5mm Jack	3.5mm Jack

# Raspberry Pi 400 - tastatura računar



# RPi 3 (model B)

- Quad Core 1.2GHz Broadcom BCM2837 64bit CPU
- 1GB RAM
- BCM43438 wireless LAN and Bluetooth Low Energy (BLE) on board
- 100 Base Ethernet
- 40-pin extended GPIO
- 4 USB 2 ports
- 4 Pole stereo output and composite video port
- Full size HDMI
- CSI camera port for connecting a Raspberry Pi camera
- DSI display port for connecting a Raspberry Pi touchscreen display
- Micro SD port for loading your operating system and storing data
- Upgraded switched Micro USB power source up to 2.5A



# Sadržaj

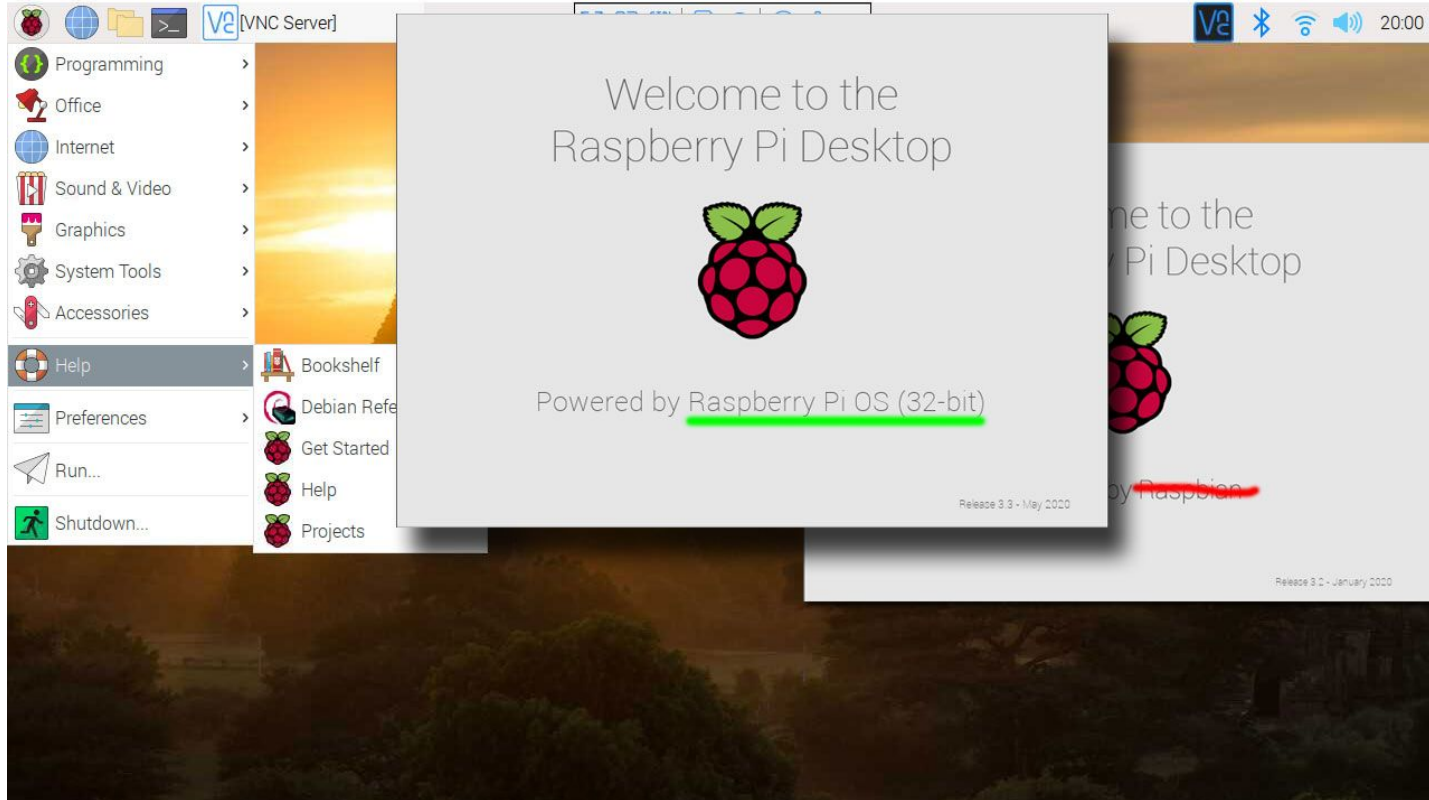
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# Raspbian OS (Raspberry Pi OS)

- Zasnovan na Debian Linux operativnom sistemu
- Optimizovan je za rad na RPi hardveru
  
- Sadrži veliki broj softverskih modula koji  
Nam olakšavaju život i rad na RPi

# Raspbian OS (Raspberry Pi OS)



# Windows alternativa - slabo se koristi

The screenshot displays the Windows 10 IoT Core Dashboard. The main interface is dark-themed with a sidebar on the left containing navigation icons. The central area shows 'Home' with various system metrics:

- Device Information:**
  - Device Model: Raspberry Pi 2 Model B
  - Device Name: halsrpi2
  - OS Version: 10.0.10531
- CPU 3%:** A progress bar indicating low CPU usage.
- Memory:**

IN USE	AVAILABLE	TOTAL
261.5 MB	713.1 MB	974.6 MB
- Network Receive:**

CURRENT	MAXIMUM
0.0 KB	34.2 KB
- Network Send:**

CURRENT	MAXIMUM
1.0 KB	1.8 MB
- Resources:**
  - [Windows 10 IoT Core Development Center](#)
  - [Supported Peripheral Interfaces and Devices](#)
  - [Getting Started \(device selection, PC setup, device setup, development\)](#)

An overlay window titled 'Device Settings' is open in the bottom right corner, showing:

- Device Name:** halsrpi2
- Device Authentication:**
  - Username: administrator
  - Password: [masked]
- Version: v1.0.0.1

The taskbar at the bottom shows standard Windows icons: settings, home, power, and a task view button.

# Konfiguracija OS-a - izuzetno bitno poznavati

```
| Raspberry Pi Software Configuration Tool (raspi-config) |
1 Change User Password Change password for the current user
2 Network Options      Configure network settings
3 Boot Options         Configure options for start-up
4 Localisation Options Set up language and regional settings to match your location
5 Interfacing Options  Configure connections to peripherals
6 Overclock            Configure overclocking for your Pi
7 Advanced Options     Configure advanced settings
8 Update               Update this tool to the latest version
9 About raspi-config   Information about this configuration tool

<Select>                                <Finish>
```

<https://www.raspberrypi.org/documentation/configuration/raspi-config.md>

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# Načini pristupanja RPi uređaju

- Daljinski pristup - preko SSH protokola
  - Preko WiFi
  - Preko Ethernet kabla i rutera ili mrežnog haba
  - Povezivanje RPi direktno sa PC računarom pomoću ukrštenog (cross) kabla
- Pristup u GUI režimu pomoću monitora, tastature i miša

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# Programiranje na RPi

- RPi ćemo programirati preko Python programskog jezika
- Zašto Python?