



Using Raspberry Pi's as a Personal Computer

Presented by:

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Michael LoVerme Memorial Foundation

- What we do:
 - Other Workshops
 - Annual 5k race
 - Sponsor an Annual College Scholarship
- Computer Clinic
 - March 24th 9:00AM - 1:30PM
 - Merrimack Public Library
 - More information can be found at:
 - <http://mlmf.org/events/2018-computer-clinic/>





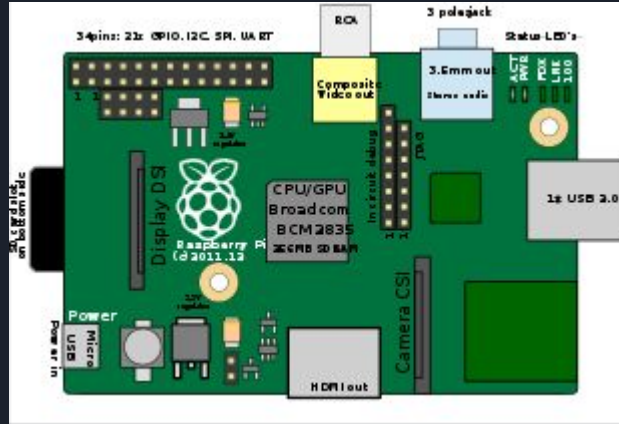
What is a Raspberry Pi?

In short, the Raspberry Pi is a:

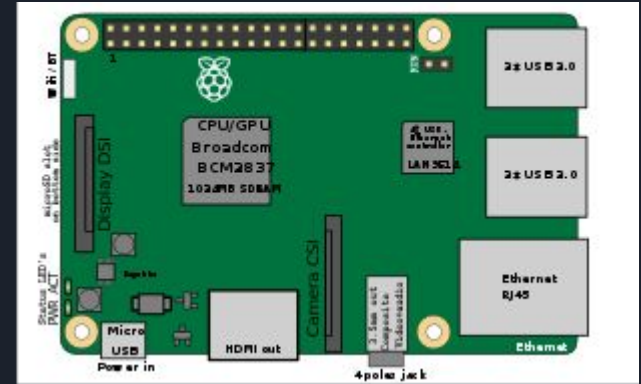
- Series of small single-board computers
- Developed in the United Kingdom by the Raspberry Pi Foundation
- Was inspired by decline in the number of students applying for Computer Science at University of Cambridge's Computer Laboratory
- Since July 2017 ~15 million Raspberry Pis have been sold!

What are the models?

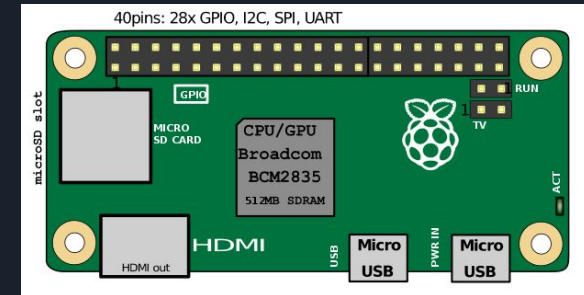
- Model A - Older and cheaper model
- Pi Zero - Very recent board developed for small applications and developing portables
- Model B - Recent version that provides the best bang for your buck



Model A
(Legacy)



Model B



Pi Zero



What is Raspberry Pi 3

- Detailed specifications for all versions and models
https://en.wikipedia.org/wiki/Raspberry_Pi#Specifications
- It is the latest version of Model B
- Costs: \$35
- Features:
 - Quad-Core 1.2 GHz Processor
 - 1 GB of RAM
 - Built in Wifi (yay, Wireless internet)
 - Built in Bluetooth (Cool, I can hook up wireless stuff like a mouse)
 - Built in GPU (wicked fast graphics processing)
 - 4 USB ports (I can hook up all my stuff)
 - HDMI port (Can hook up my monitor or TV)
 - Ethernet Port (Wired Internet)
 - MicroSDHC slot (Your Disk)
 - Only uses 6.7 Watts under complete load
 - Operating System - Linux???





So why do I care?

- A very fast computer
- With all the features you'd expect out of a desktop
- Faster graphic with a built in GPU
- Extremely low power consumption
- Very small form factor
- All for the cost of \$35
 - You spend this much or more going out to dinner with your significant other just one time
 - I spend about \$30 to fill my gas tank. For 5 bucks more I get a computer board
 - According to data collected by the NPD group, the average Windows notebook goes for \$700
 - Pi Board only costs 5% the cost of the average computer
 - 10% the cost of the average computer with all the necessary pieces



MICHAEL LOVERME
Memorial Foundation



So what do you need?

- Raspberry Pi 3 Kit (\$69.90)
 - <http://amzn.to/2CaSiCD>
- USB Keyboard (\$12.99)
 - <https://www.amazon.com/AmazonBasics-KU-0833-Wired-Keyboard/dp/B005EOWBHC>
- USB Mouse (\$6.99)
 - <https://www.amazon.com/AmazonBasics-3-Button-Wired-Mouse-Black/dp/B005EJH6RW>
- A monitor or your TV (\$60)
 - <http://amzn.to/2CDHyoc>

Worst case: \$150

Best Case: \$60



What is in the kit?

CanaKit Raspberry Pi 3 Starter Kit

Model B | 1 GB RAM | 1.2 GHz | Quad-Core CPU



- > Credit-Card Sized Computer
- > Turn your TV into a Media Center
- > Learn to Code & Explore Computing
- > Built-In Wifi & Bluetooth



KIT INCLUDES RASPBERRY PI 3 AND ...

PREMIUM CASE



2.5A POWER ADAPTER



32 GB CLASS 10 MICROSD CARD



PRE-LOADED
WITH OPERATING SYSTEM

MICROSD USB READER



HEAT SINKS



PREMIUM HDMI CABLE



WIFI & BLUETOOTH



QUICK-START GUIDE





How do I set it up?

- NOOBS is right on the SD card
 - Follow the steps found here:
 - <https://www.raspberrypi.org/learning/software-guide/quickstart/>
- What is NOOBS
 - New Out Of Box Software
 - Installs many different OS
 - RASPBIAN (Recommended for beginners)
 - Other OS include: Pidora, LibreELEC, OSMC, RISC OS, Arch Linux.
 - Makes it easy for a non-technical people to install an operating system
- Video showing how easy it is to install the OS
 - <https://youtu.be/iJbjAJpJA84?t=218>



RASPBIAN

- Debian optimized for the Raspberry Pi hardware
- comes with over 35,000 packages, pre-compiled software bundled
- We will go through some of the features during the demo



So what can I use this for?

- Sky is really the limit
- Ideas
 - Basic computer for surfing the web
 - Make your regular TV a smart TV
 - <https://kodi.tv/>
 - Build your own surveillance camera with motion detection
 - <https://github.com/ccrisan/motioneyeos>
 - A slew of other ideas can be found here:
 - <http://www.trustedreviews.com/opinion/best-raspberry-pi-projects-pi-3-pi-zero-2949390>
 - Dash cam
 - DIY Nintendo Gaming System
 - More projects
 - <https://projects.raspberrypi.org/en/projects>

Pi Demonstration

