Chapter 1 : Raspberry Pi Quick Start Guide

Guide to using add-ons and accessories with the Raspberry Pi Troubleshooting Guide Answers to the top 10 most common problems when getting started with Raspberry Pi.

Read on as we guide you through everything from buying to powering to running the tiny dynamo. What Is the Raspberry Pi? The Raspberry Pi is a credit-card sized computer designed and manufactured by the Raspberry Pi Foundation, a non-profit organization dedicated to making computers and programming instruction as accessible as possible to the widest number of people. Although the original mission of the Raspberry Pi project was to get inexpensive computers with programming capabilities into the hands of students, the Pi has been embraced by a diverse audience. Tinkers, programmers, and DIYers across the globe have adopted the tiny platform for projects ranging from recreating retro arcade cabinets to controlling robots to setting up cheap but powerful home media devices. The Raspberry Pi is not an outright replacement for your desktop computer or laptop. You cannot run Windows on it at least not the traditional version of Windows you know , although you can run many distributions of Linuxâ€"including distributions with desktop environments, web browsers, and other elements you would expect in a desktop computer. The Raspberry Pi is, however, an astoundingly versatile device that packs a lot of hardware into a very inexpensive body and is perfect for hobby electronics, DIY projects, setting up an inexpensive computer forprogramming lessons and experiments, and other endeavors. LEGO programmer for scale, not included. In the early years of the Pi foundation, the Raspberry Pi came in two versions at two different price points: The current generation Raspberry Pi 3, seen above, sports the following hardware: What the heck is a GPIO? The Raspberry Pi comes with a set of 26 exposed vertical pins on the board. Instead, the GPIO pins are there explicitly for the end user to have low-level hardware access directly to the board for the purposes of attaching other hardware boards, peripherals, LCD display screens, and other hardware devices to the Pi. For example, if you wanted to take an old arcade controller and wire it directly to your Raspberry Pi to give your arcade a more authentic feel, you could do so using the GPIO interface. Today you can still buy from an official Pi reseller, like one of the many companies supplied by the Pi Foundation sanctioned distributor Element14 , but the risk of buying from a third party or through Amazon has plummeted. Practically every old Pi tutorial on the internet still works with the older models, but many of the projects you may wish to undertake especially if you want to use the Pi as a video game emulator or the like really benefit from the newer hardware. In rare instances, however, you may want to hit up eBay to buy an older and cheaper Pi model. A stable power source: Using a low-quality or under-powered charger is the number one source of system instability problems and frustration with the Raspberry Pi. You can stave off a pile of future headaches by simply getting a very high quality power source, preferably one designed for the Pi, right out of the gate. The Pi ships naked; you are going to need a proper case to enclose it. No particularly picky or flashy? Some Pis also have analog outputs for older TVs. If you are connecting and older Pi to an analog television set, you will need an RCA cable for the video and a 3. All versions of the Pi have an Ethernet port onboard, so you can just plug in an Ethernet cable and go. If you have an older Pi, you can buy one of the many micro Wi-Fi adapters compatible with the Pi. A Mouse and Keyboard: There is one caveat to that statement, however: On older Pi units, this extra draw is problematic, as the USB ports were notoriously fussy. If you find that your peripherals are drawing more than mAh each, you will need to use a powered USB hub see below. On newer models this should be less of a problem as the USB ports are significantly improved and the units user bigger power supply units. You may find it useful to check out this large list of verified Pi-compatible peripherals maintained by eLinux. If your peripherals are out of spec or you need to attach more than two devices such as a keyboard, mouse, and USB Wi-Fi adapter , you will need an external USB hub with its own power source. We tested all the powered hubs we had laying around the office with the Piâ€"from nice brand-name Belkin powered hubs to no-name hubsâ€"and had no problems with any of them. That said, we would recommend checking your existing hub or potential purchase against the hub section of the aforementioned eLinux peripheral list. As such, you are not going to follow the traditional computer-setup route of inserting a boot disk and installing your operating system to an internal

storage device. For this step, you will need a separate computer with an SD card reader. First, start by grabbing a copy of Rasbian from the Raspberry Pi Foundation. There are two versions of Rasbian: Pixel is the new and very pretty desktop interface the Raspberry Pi Foundation released in the Fall of The lite version does not have the more GPU hungry Pixel desktop and retains the old and rather ugly previous Rasbian desktop system. Etcher , a free program for Windows, macOS, and Linux users makes the process simple. First, plug your SD card into your computer. Next, fire up Etcher. Flashing Raspbian is a simple three-step process: Note that your system drives will not show up as an option, but any external hard drives you have plugged in might. Etcher is a very streamlined program that makes the process a lot easier. Advanced users might prefer the command line method, which is outlined over at raspberrypi. Once you have all the cables attached to both the Pi and their respective destinations, insert the SD card. There is no power button on the Piâ€"as soon as you plug in the power cable, it will begin booting up. Almost immediately, you will see the boot sequence go scrolling rapidly byâ€"similar to the view above. If you need to configure the wireless connection, look for the networking icon in the upper right corner of the screen and click on it: Select the wireless network you wish to connect to from the drop down menu. Enter your Wi-Fi password in the pop up box and then confirm that the network icon changes from the no connection icon to the Wi-Fi icon. Time to double check the network connection by confirming we can connect to the web. What better way to test the connection than to fire up the browser and visit How-To Geek? Launch Chromium by clicking on it and then type in www. Not only do we have network connectivity, but How-To Geek look just as good on the lightweight Pi as it does on a full-fledged desktop. This will likely be the first of many times you are surprised and pleased with just how capable your new little microcomputer is. We have setup the network, we have tested the connection, and now is a perfect time to do a system-wide software update. Although the interface as come a long way on the Pi and Pixel is absolutely beautiful compared to the old desktop, you still need to get your hands dirty now and then in the terminalâ€"and updating is one of those times. Click on the terminal icon in the upper left corner of the screen to launch the terminal. At the terminal, enter the following command: As any such updates are discovered, you will be prompted to approve or disapprove the changes with the Y and N keys. At any given time, we typically have at least a half dozen Pi units up and running. Every TV in our entire house guest room included! Want to play the beefy video games your desktop computer can handle but on your living room TV instead of at your desk? You can do that too by rolling a Pi into a streaming Steam Machine. Need a more practical project? You can turn a Pi and an external hard drive into a networked backup station for all your local file backup needs. If you want some further reading, here are some excellent links related to the Raspberry Pi: The Official Raspbian Documentation: From tweaking your config. The Official Raspberry Pi Blog: If you keep an eye on nothing else Raspberry Pi related, keep an eye on the official blog. The Unofficial Raspberry Pi Magazine: Published around eight times a year, MapPi is a free and polished electronic magazine for Pi hobbyists. Raspberry Pi Disk Images: Experimenting with Raspberry Pi distributions is as simple as grabbing another cheap SD card and loading it up with a fresh image. Have a Raspberry Pi project to share? Have a request for a Pi-oriented tutorial? Shoot us an email at tips howtogeek.

Chapter 2 : Everything You Need to Know About Getting Started with the Raspberry Pi

The Raspberry Pi is a wonderful little computer that fits in the palm of your hand, yet packs enough power to run your home media center, a VPN, and a lot more. Before you can do anything awesome.

From making a media center to a web-based server, from a simple desktop computer to a high-end retro gaming console; all can be done quite easily with this kit. V-Kits by Vilros tried to provide everything, especially for the Raspberry Pi beginners, at a relatively low price. So, you will need to buy it additionally. The other features that are offered by this kit at such affordable price is a boon for the RPi lovers, though. It comes with every component you would need or want. Along with the Raspberry Pi 3, the following is what the kit contains: A premium case that comes with integrated camera support. A quick-start guide to help you through the entire setup process. A few of its spectacular features are as follows: It has a 1. Users say that it is the perfect starter kit for every Raspberry Pi enthusiast. It has built-in Wi-Fi and Bluetooth. Many users have also said that the kit is a steal at that price when compared to the other options. The included noise filter makes usage super easy and comfortable. We used this kit and many of its counterparts, and we think it really is the best one out there especially at the price. The company gives a one-year manufacturer warranty for all the parts and accessories of the kit. The pre-partitioned SD card may seem to be smaller capacity. If you want a full use, then format it and then enjoy the expanded memory. This kit is designed to help you take off even if you are a beginner. It aids easy assembly. The brand is also offering a complete Raspberry Pi recovery system. In the kit, you will also find the official Raspberry Pi 5. The plug is interchangeable. The heads can be changed based on your convenience. So, whether you have a 2-pin plug US or the one with 3 attachments, this one will work for you with ease. Remember that HDMI cable is not included in the kit. It offers 4 USB ports. Users vouch for this product not just because it is an official kit from the makers but also because it is highly affordable. The included troubleshoot sheet is a bonus for the tinkerers. With the help of it, you can check for the reasons and solutions for the most common problems with the Raspberry Pi setup and usage. It is powered by the fastest Raspberry Pi 3 board. You just need to watch the story, attach the parts, and then see its working like a wonder. You can make the Pi powered computer on your own by following colorful, page-by-page instructions This Kano kit will help you to learn processors, power, codes, sounds, pixels, etc. It comes with a super-powered micro computing Raspberry Pi 3 machine which helps you to implement your electronic circuit designing ideas in reality. The USB power supply of 2. Education with fun, tinkering with entertainment is what the goal of this bundle. It is achieving it quite comfortable also. If you want to learn and implement the Pi DIY projects in your home lab, then this learning lab kit is recommended for you. Here is the set of all the needed components for your electronics and robotics projects. As it has genuine parts and accessories, you will not have to worry about its quality and durability. Keeping cost, performance, requirements, and ease of use in mind, we would definitely recommend the Canakit Raspberry Pi 3 Complete Starter Kit. Have you used it yet? We want to hear your experience! Raspberry Pi Starter Kits Comparison:

Chapter 3 : Help Guides and Resources - How to Use Raspberry Pi

The newer Raspberry Pi Model A+, Raspberry Pi Model B+, Raspberry Pi 2 Model B, Raspberry Pi Zero, and Raspberry Pi 3 Model B require micro SD cards. Display and connectivity cables Any HDMI/DVI monitor or TV should work as a display for the Pi.

This open source media center application was initially meant for the Xbox gaming consoles from Microsoft. But as the time progressed, and with the updates, it got frequently, this media player started gaining the attention of worldwide Raspberry Pi users. It has a user-friendly interface with various categories. With an add-on, you will get the inbuilt download and subtitle synchronization functionalities. You can operate Kodi software from multiple user accounts. The Kodi media library has search, filter, and sort features to help you find and play your favorite videos easily and quickly. But, this app supports the Linux environment as strong as it does to Windows OS. Even it can run 4K UHD videos; you watch for that lags though. Features of VLC media player: It has the simple and quick to operate user interface which means even the beginners can access it without any hassle. It can play all the digital media content, online YouTube videos, flash drives, Blue-rays, or directly from your mobile. You can use the inbuilt filters to enhance the video playing. Inbuilt add-on for subtitle synchronization, download, and audio playback will help you to have the custom media playing experience. It can connect with other devices on the same network to stream the videos. Faster operation of opening and playing of media files results in smoother media playing without the problem of slowdown system. Proper splitting of the memory will allow you to even play the HD videos and games on the Raspbian system without slowing it down. It is almost a perfect Raspberry Pi media player if you want to play a single media file. After getting the info about the top 3 media players for Raspberry Pi, I will explain how you can use this media player on your Pi device. How to Play Videos on Raspberry Pi? As we have seen that, there is a bunch of some top-quality media player software available in the market which lets you enjoy streaming the media content on your Raspberry Pi 3 or other Pi boards. But, how you will use such application to play multimedia content on Pi device? You can take benefits of its simple, user-friendly Linux environment. To enjoy watching the video on your Pi monitor screen, you will just need to specify the path of the media file. You can even play the video directly from the URL without downloading it. Follow the steps below to play video on Raspberry Pi: Open the Raspberry Pi command terminal 2. Enter the command line as shown below: To play video with sound on HDMI port, enter the command below:

Chapter 4 : Raspberry Pi Guide - Quick Start Guide for Raspberry Pi

This is the most recent Raspberry Pi Starter Kit. It already comes with the new Raspberry Pi 3 model B+ board (released on 14th March). The kit comes with the necessary accessories to get started quickly with the Raspberry Pi 3 model B+ board, including a microSD card pre-loaded with NOOBS, so that you don't have trouble flashing the operating system on the microSD card.

Chapter 5 : Guide Archives - Raspberry Pi Starter Kits

Heads up! The Raspberry Pi 3 Model B+ has the same mechanical footprint as both the Raspberry Pi 3 Model B and the Raspberry Pi 2 Model B. This guide will show images of the Pi 3 Model B but you can still follow along with the Pi Model B+. Now that the Raspberry Pi 3 Model B and the Pi 3 Model B+.

Chapter 6 : Raspberry Pi: A Quick-Start Guide by Maik Schmidt | The Pragmatic Bookshelf

Here is a Starter Guide For Your Raspberry Pi Car Project in DIN Slot. Many Technical Matters Around Car Need To Be Known For Complex Project.

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Chapter 7 : List of Raspberry Pi Video Players and How to Play Guide

Raspberry Pi â€" There are six different models of Raspberry Pi. The Pi 2 Model B or Pi 1 Model B+ and Pi 3 Model B are ideal for beginner projects because they are the most versatile and have the widest range of capabilities.

Chapter 8 : Best Raspberry Pi 3 Starter Kits for DIY Projects of | Buying Guide

The Pi was invented in the UK as a device for promoting the teaching of computer science and coding, and its development is overseen by The Raspberry Pi Foundation charity. The first-generation.

Chapter 9 : Best Raspberry Pi 3 Starter Kits â€" Buying Guide - Maker Advisor

The new complete CanaKit Raspberry Pi Quick-Start Guide is now available. Click here to download.. Congratulations on your purchase and welcome to the exciting world of the Raspberry Pi!