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Assignment No :- 2

* Aim :- Study of different operating Systems for Raspberry-Pi Understanding the process of OS installation on Raspberry-Pi.

• Theory :-

* Introduction :-

The Raspberry-Pi is a wonderful but powerful little computer that fits the palm of your hand. Despite of its size it has enough power to run your operating System smoothly, home media center, a VPN and a lot more. The Raspberry Pi has a SD Card Slot for mass storage and will attempt to boot off that device from SD card when the board is powered on by 5v micro USB Supply.

The Raspberry is a very capable minicomputer and moreover its very inexpensive, it is available at unbelievable price that you could not resist yourself to buy one, if you are technocrat latest Raspberry Pi i.e. Pi 3 Comes with case less Computer with HDMI and analog composite video Output. Many from the available lists of O.S, Each one of them are segregated based on their applications, features and Specifications.

• Brief Discussion of Operating System :-

No matter how good and powerful the h/w of the Raspberry Pi is, without an operating System it is just a piece of Silicon, fiberglass and a few other semiconductor materials, there are several different operating systems for the Raspberry Pi, including RISC OS, Pidora,

Arch linux, and Raspbian.

** 1. Raspbian :-

Currently, Raspbian is the most popular linux-based operating System for the Raspberry Pi. Raspbian is an open source operating System based on Debian, which has been modified specifically for the Raspberry Pi. Raspbian is the default free & open source O.S that often comes with the Raspberry Pi Kit, Raspbian is a Official Operating System of Raspberry Pi foundation. Raspbian is version of debian which is Specially designed & optimized for the Raspberry Pi hlw & the build consists of more than 35,000 Respbian packages.

Raspbian is an Operating System which proves to be very efficient for the basic Operating requirements with Pi. Raspbian is designed to be easy to use & its recommended Operating System for beginners to start off with their Raspberry Pi.

** 2. Pidora :-

After waiting for a long, Raspberry Pi users are finally getting an optimized version of Fedora, the pidora to replace the current raspbian O.S. The news caused excitement among the Raspberry Pi community, who are finally getting the opportunity to enjoy fedora on their devices after the previous attempts to introduce fedora Remix for Pi ended up as a failure. The Current Rasbian O.S, which

was a remix of the open source debian O.S chip based on ARM6 would make way for Pidora, currently available for download on the CDOT website.

** 3. Arch Linux :-

Arch linux is an excellent choice for many reasons one of the greatest advantages of the arch linux distribution is its simplicity in approach and attitude. Arch gives you the ability to build your system from the ground up, including only the stw you actually need. This minimizes the amound of SD card memory.

** 4. OSMC :-

OSMC (open Source Media center) is a free and open source media player based on Linux. founded in 2014, OSMC lets you play back media from your local network, attached storage and the internet. OSMC is the leading media center in terms of feature set & community & is based on the Kodi project. Although OSMC is derived from Linux, you don't need to have any experience with linux to use it up & running in the way you want. Everything is easily managed through the OSMC interface. This OS comes with over 30,000 packages from Debian repository.

** 5. RetroPIE :-

Retro Pie allows you to turn your Raspberry Pi into a retro gaming machine. Its platform developed on the base of raspbian, emulation station, retro Pie enable you to play your favourite arcade, home-console, and classic PC games with the minimum set-up. for technocrat users it also provides a large variety of configuration tools of customize the System as per user need & purpose.

The retro Pie SD image is built on top of Raspbian but retro Pie can be installed on any debian based linux distribution. Retro Pie has the most Supported & Customizable O.S out of any retro programming s/w for the raspberry Pi. This Operating is very useful emulation many games.

** 6. RISC O.S :-

RISC O.S is a british Operating System originally designed by Acorn Computers Ltd in Cambridge, England, and was a first released in 1987. It was specifically designed to run on the ARM chipset. It is fast, compact & efficient. RISC O.S is not a version of linux, nor is it in any way related to windows & interestingly was developed by the original ARM team. RISC OS Pi comes with a small set of utilities & applications, It includes a browser called NetSurf, a simple text editor, a specific calculator, & it also has two Software / Package managers, Packman & a Store.

** 7. Firefox O.S :-

Firefox O.S is an O.S which is more associated with being a linux Kernel-based open source operating system primarily designed for smart phones and tablet computers. It was primarily designed as a community based alternative System utilizing open standards and HTML5 applications, JavaScript and Open web API's. It mainly competes with android, windows phone & Jolla Sailfish O.S Recently Mozilla an a raspberry Pi. This O.S is based on Mozilla technology the device is affordable & flexible as it can run a number of operating System & might therefore to be a very suitable device to provide an entry level upgrade in network protection.

** 8. Kali linux :-

Kali Linux is a debian-based Security auditing linux distribution. It is specially designed for digital forensics and penetration testing. It is maintained & funded by Offensive Security Ltd. Kali linux provides many pre-installed packages with numerous penetration-testing programs, like nmap (a port Scanner), wire shark (a pkt analyzer), John the Ripper, Air Crack-ng, Burp Suite and OWASP ZAP. Recently Support for TFT touch screens was added. If you want to install Kali on the Raspberry Pi Kit you can download it from their official download page, it is freely available here. Raspberry Pi has changed the way of programming & usability. But without

O.S it is just a piece of Semiconductor Material. Operating System have made the Raspberry Pi more popular & user friendly. We have gone through 8 different Operating System. Each Operating has its own features.

Conclusion :-

Thus, we have Studied installation for Various O.S in Raspberry Pi.