ASSIGNMENT 2

Title- Study of different operating systems for Raspberry-Pi /Beagle board.

Problem statement- Study of different operating systems for Raspberry-Pi /Beagle board. Understanding the process of OS installation on Raspberry-Pi /Beagle board.

Objective- • To Understand the different operating system for raspberry-pi/ Beagle board.

• To Understand the process of installation on raspberry-pi.

S/W and H/W

- Raspberry-Pi /Beagle board.
- Open Source Fedora-GHz. 8 G.B. RAM, 500 G.B. HDD, 15"Color Monitor, Keyboard, Mouse

Outcome-

- Students will be able to install operating system on raspberry pi.

Theory-

The Raspberry Pi itself doesn't come with an operating system. For that, you need NOOBS, short for New Out of the Box Software. It's an operating system manager that makes it easy to download, install, and set up your Raspberry Pi. When you first boot up NOOBS, you'll get a selection of OSes to choose from. For eg- Raspian, OSMC, OpenELEC , RISC OS.

Raspbian is a Debian-based (32 bit) computer operating system for Raspberry Pi. There are several versions of Raspbian including Raspbian Buster and Raspbian Stretch. The operating system is still under active development. Raspbian is highly optimized for the Raspberry Pi line's low-performance ARM CPUs.

Ubuntu MATE for the Raspberry Pi provides a complete, familiar, desktop environment that can be used for basic desktop computing. It is also of interest to makers and device hackers who want to target Ubuntu for their projects. You can prototype homebrew ARMv7 or ARMv8 based IoT devices in a comfortable desktop environment, including building and testing your apps as snaps.

Steps for installation

- Once your SD card has been formatted, drag all the files in the extracted NOOBS folder and drop them onto the SD card drive.
- When this process has finished, safely remove the SD card and insert it into your Raspberry Pi.
- Plugin the perpherals.
- Your Raspberry Pi will boot, and a window will appear with a list of different operating systems that you can install. We recommend that you use Raspbian – tick the box next to Raspbian and click on Install.
- Raspbian will then run through its installation process. Note that this can take a while.
- When the install process has completed, the Raspberry Pi configuration menu (raspi-config) will load. Here you are able to set the time and date for your region, enable a

Raspberry Pi camera board, or even create users. You can exit this menu by using Tab on your keyboard to move to Finish.

SSH into raspberry pi

- SSH is disabled by default in Raspberry Pi, hence you'll have to enable it when you turn on the Pi after a fresh installation of Raspbian.
- Find the IP Address of Raspberry Pi**.** In most cases your Raspberry Pi will be assigned a local IP address which looks like 192.168.x.x or 10.x.x.x.
- SSH into Raspberry Pi.
- Default Username and Password is

  username: pi

  password: raspberry

Basic features

Developer : Raspberry pi foundation.

OS family : Linux like.

Source model : Open Source

Update method : APT

Platforms : ARM

Kernel type : Monolithic

Default UI : PIXEL,LXDE

NOOBS is an easy operating system installer which contains Raspbian and LibreELEC. It also provides a selection of alternative operating systems which are then downloaded from the internet and installed.

Os included in NOOBS:

- Raspian
- Libre ELEC
- OSMC
- Recall Box
- RISC OS

Steps for beagle bone board OS-

- Update board with latest software.
- Install SD card programming utilities & write image.
- Start beagle board.
- Establish connection to beagle using SSH ip address.

Conclusion – Studied & understood various OS required for Raspberry Pi and beaglebone. Learnt the installation and configuration steps.