Assignment A3

Title : Connectivity and configuration of Raspberry

Problem Statement:

Study of connectivity and configuration of Raspberry - Pi/ Beagle board circuit with basic peripherals, LEDs, Understanding GPIO and its use in the program.

Learning Objectives:

Understand the connectivity and configuration of Raspberry - Pi / Beagle Board.

Software and Hardware Requirements:

Raspberry - Pi/ Beagle Board, PC with configuration as Latest version of 64 bit OS, open source Fedora-4Hz, 8 GB RAM, 500 GB HDD, 15" Color Monitor, Keyboard, Mouse.
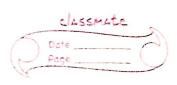
Theory:

raspi-config -

The Raspberry Pi configuration tool in Raspbian, allowing you to easily enable features such as the camera, and to change specific settings such as keyboard layout

config.txt → The Raspberry Pi config file.

Wireless → Configuring your Pi is a wireless access point using the Raspberry Pi 3 and Pi Zero W's built wireless connectivity, or a USB wireless dongle.

Audio Config ⇒ Switch your audio output between HDMI and the 3·5mm jack.

Camera Config ⇒ Installing and setting up the Raspberry Pi camera bond.

External storage Config →

Localisation → Setting up your Pi to work in your local language / timezone.

Default pin configuration ⇒ Changing the default pin settings

Device Tree Config ⇒ Device Trees, overlays and parameters

Kernel Command Line
VART Configuration
Firmware Warning Icons.

raspi-config is the Raspberry Pi configuration tool written and maintained by Alex Bradbury. It targets Raspbian.

To open the configuration tool simply run the command -

    sudo raspi-config

raspi-config aims to provide the functionality to make the most common configuration changes.
This may result in automated edits to /boot/config.txt and various standard Linux configuration files.

Some options require a reboot to take effect.

Network Options :-

(i) Hostname
(ii) Boot Options
(iv) Localisation Options
(v) Change locale
(vi) Change time zone
(vii) Change keyboard layout
(viii) Change WiFi Country

Interfacing Options -

(i) Camera
(ii) SSH
(iii) VNC
(iv) SPI
(v) I2C
(vi) Serial
(vii) 1 - wire
(viii) Overclock

These all the listed options provided during Raspberry-Pi configuration.

Advanced options:

Expanded Filesystem -
If you have installed Rasprian using NOOBs. The filesystem will be expanded automatically. You will need to reboot the Raspberry Pi to make this option available.

Note that there is no confirmation selecting the option begins the partition expansion immediately.

This tool provides a straightforward way of doing the initial configuration of the Raspberry Pi Although it can be run at any time, some of the options may have difficulties if you have heavily customized your installation.

Conclusion:

We successfully understood the connectivity of Raspberry Pi circuit with basic peripherals.