Assignment no 3

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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 program.

OBJECTIVE:- Understand the connectivity and configuration of Raspberry pi/Beagle board.

SOFTWARE AND HARDWARE USED:- Raspberry-pi/ Beagle board PC with the configuration as Latest Version of 64 bit Operating Systems, Open Source Fedora-GHz. 8 G.B. RAM, 500 G.B. HDD, 15"Color Monitor, Keyboard, Mouse **Theory:-**

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

Usage- You will be shown raspi-config on first booting into Raspbian. To open the configuration tool after this, simply run the following from the command line:

sudo raspi-config

Network Options

From this submenu you can set the host name, your WiFi SSID, and pre-shared key, or enable/disable predictable network interface names.

Hostname Set the visible name for this Pi on a network.

Boot Options

From here you can change what happens when your Pi boots. Use this option to change your boot preference to command line or desktop. You can choose whether boot-up waits for the network to be available, and whether the Plymouth splash screen is displayed at boot-up.

Localisation Options

The localisation submenu gives you these options to choose from: keyboard layout, time zone, locale, and WiFi country code. All options on these menus default to British or GB until you change them.

Change locale Select a locale, for example en_GB.UTF-8 UTF-8.
Change time zone Select your local time zone, starting with the region, e.g. Europe, then selecting a city, e.g. London. Type a letter to skip down the list to that point in the alphabet.

Change keyboard layout This option opens another menu which allows you to select your keyboard layout. It will take a long time to display while it reads all the keyboard types. Changes usually take effect immediately, but may require a reboot.

Change WiFi Country This option sets the country code for your WiFi network.

Interfacing Options

In this submenu there are the following options to enable/disable: Camera, SSH, VNC, SPI, I2C, Serial, 1-wire, and Remote GPIO.

Camera Enable/disable the CSI camera interface.

SSH Enable/disable remote command line access to your Pi using SSH.

SSH allows you to remotely access the command line of the Raspberry Pi from another computer. SSH is disabled by default. Read more about using SSH on the SSH documentation page. If connecting your Pi directly to a public network, you should not enable SSH unless you have set up secure passwords for all users.

VNC Enable/disable the RealVNC virtual network computing server.

SPI Enable/disable SPI interfaces and automatic loading of the SPI kernel module, needed for products such as PiFace.

I2C Enable/disable I2C interfaces and automatic loading of the I2C kernel module.

Serial Enable/disable shell and kernel messages on the serial connection.

1-wire Enable/disable the Dallas 1-wire interface. This is usually used for DS18B20 temperature sensors.

Overclock

It is possible to overclock your Raspberry Pi's CPU. The default is 700MHz but it can be set up to 1000MHz. The overclocking you can achieve will vary; overclocking too high may result in instability.

Advanced Options

Expand Filesystem:- If you have installed Raspbian using NOOBS, the filesystem will have been expanded automatically. There may be a rare occasion where this is not the case, e.g. if you have copied a smaller SD card onto a larger one. In this case, you should use this option to expand your installation to fill the whole SD card, giving you more space to use for files. You will need to reboot the Raspberry Pi to make this available. Note that there is no confirmation: selecting the option begins the partition expansion immediately. Overscan Old TV sets had a significant variation in the size of the picture they produced; some had cabinets that overlapped the screen.

Memory split Change the amount of memory made available to the GPU.

Audio Force audio out through HDMI or a 3.5mm jack. Read more on the audio configuration documentation page.

Resolution Define the default HDMI/DVI video resolution to use when the system boots without a TV or monitor being connected. This can have an effect on RealVNC if the VNC option is enabled.

Pixel Doubling Enable/disable 2x2 pixel mapping.

GL Driver Enable/disable the experimental GL desktop graphics drivers.

GL (Full KMS) Enable/disable the experimental OpenGL Full KMS (kernel mode setting) desktop graphics driver.

GL (Fake KMS) Enable/disable the experimental OpenGL Fake KMS desktop graphics driver.

Legacy Enable/disable the original legacy non-GL videocore desktop graphics driver.

Update Update this tool to the latest version.

CONCLUSION:- We have successfully studied Connectivity and configuration of Raspberry-Pi /Beagle board circuit with basic peripherals, LEDS. Understanding GPIO and its use in program.