Raspberry Pi

Raspberry Pi is a low-cost mini-computer with the physical size of a credit card. • Raspberry Pi runs various flavors of Linux and can perform almost all tasks that a normal desktop computer can do. • Raspberry Pi also allows interfacing sensors and actuators through the general purpose I/O pins. • Since Raspberry Pi runs Linux operating system, it supports Python "out of the box"

Linux on Raspberry Pi

• Raspbian
• Raspbian Linux is a Debian Wheezy port optimized for Raspberry Pi.
• Arch
• Arch is an Arch Linux port for AMD devices.
• Pidora
• Pidora Linux is a Fedora Linux optimized for Raspberry Pi.
• RaspBMC
• RaspBMC is an XBMC media-center distribution for Raspberry Pi.
• OpenELEC
• OpenELEC is a fast and user-friendly XBMC media-center distribution.
• RISC OS
• RISC OS is a very fast and compact operating system.

Raspberry Pi Interfaces Serial

• The serial interface on Raspberry Pi has receive (Rx) and transmit (Tx) pins for communication with serial peripherals.
• SPI
• Serial Peripheral Interface (SPI) is a synchronous serial data protocol used for communicating with one or more peripheral devices.
• I2C
• The I2C interface pins on Raspberry Pi allow you to connect hardware modules. I2C interface allows synchronous data transfer with just two pins - SDA (data line) and SCL (clock line).

Raspberry Pi Example: Interfacing LED and switch with Raspberry Pi from time import sleep import RPi.GPIO as GPIO GPIO.setmode(GPIO.BCM) #Switch Pin GPIO.setup(25, GPIO.IN) #LED Pin GPIO.setup(18, GPIO.OUT) state=false def toggleLED(pin): state = not state GPIO.output(pin, state) while True: try: if (GPIO.input(25) == True): toggleLED(pin) sleep(.01) except KeyboardInterrupt: exit()

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