

INTERNET OF THINGS LAB

B.Tech. IV Year I Sem.
Course Code: CS754 PC

L T P C
0 0 3 2

Following are some of the programs that a student should be able to write and test on an Raspberry Pi, but not limited to this only.

- 1 Start Raspberry Pi and try various Linux commands in command terminal window:
ls, cd, touch, mv, rm, man, mkdir, rmdir, tar, gzip, cat, more, less, ps, sudo, cron, chown, chgrp, ping etc.
2. Run some python programs on Pi like:
Read your name and print Hello message with name
Read two numbers and print their sum, difference, product and division.
Word and character count of a given string
Area of a given shape (rectangle, triangle and circle) reading shape and appropriate values from standard input
Print a name 'n' times, where name and n are read from standard input, using for and while loops.
Handle Divided by Zero Exception.
Print current time for 10 times with an interval of 10 seconds.
Read a file line by line and print the word count of each line.
3. Light an LED through Python program
4. Get input from two switches and switch on corresponding LEDs
5. Flash an LED at a given on time and off time cycle, where the two times are taken from a file.
6. Flash an LED based on cron output (acts as an alarm)
7. Switch on a relay at a given time using cron, where the relay's contact terminals are connected to a load.
8. Get the status of a bulb at a remote place (on the LAN) through web.
The student should have hands on experience in using various sensors like temperature, humidity, smoke, light, etc. and should be able to use control web camera, network, and relays connected to the Pi.