

FORMAN CHRISTIAN COLLEGE

A Chartered University

Embedded Systems CSCS306

LAB-08

This lab is time constrained. It should be completed within prescribed time. Failure in doing so will result upto 50% drop in lab performance grade. Make sure to keep this graded and signed lab handout with you to be presented at a later stage if required.

You need to submit a report comprising of an introduction to the said lab, circuit diagram, image of your final circuit and code. Each lab will be graded out of 100. Rubric for this lab is as follows:

Lab is online and you can complete the lab in groups. (No more than two students). Submit the code file on Moodle with name of file carrying first names of both the group members.

Submit the hardcopy of lab report on Wednesday Dec 21 in class. Make sure to bring in the working code and hardware for the lab with the lab report.

Hardware properly wired and working	5%
Code	65%
Report	30%

Group Members:

Lab Task 1 [35 Marks]

In this lab we will work with Node MCU / ESP32. This lab will be constructed on top of the code provided in last class where we experimented on how to design and implement a client server scenario which will help us control the switching of an LED using local host. In this lab you need to write a piece of code that should blink an LED. The number of times LED should blink is provided by user through a web page. User will enter the IP of web server (Node MCU / ESP32) on her browser address bar and as its response a web page should be displayed that should carry one drop down list filled with appropriate numbers. These represent number of times the LED should blink (for example: 2, 3, 4, 5, ...). Your list should carry some finite numbers to choose from. User will select one of these and press the submit button. A request with this number is generated and NODE/ESP32 will make the LED connected to one of its GPIO pins to blink for appropriate number of times. Use an external LED for this purpose. Assume that blinking rate is one second.

Lab Task 2 [35 Marks]

For the second phase of the lab, you should incorporate a second drop down list which should carry numbers that represent the rate of blinking. For example, 500, 1000, 1500, 2000. These represent milli-seconds for which the LED should remain ON and OFF.

Note that for this lab you are free to explore Internet and get some helping code. Make sure to give due respect to the writer by referencing his/her work in your report.