Kindly use the Main page, Index page format from your other Journals.

All the points mentioned in each Practical should be strictly mentioned in the write-up in point form

Practical 1

Practical Name: CCS Installation, User Interface tour, Project creation, Compiling and debugging with MSP432

Points to be covered in the following order: **Put screenshots in the appropriate places.**

1) CCS Installation
2) MSP432 SDK installation
3) Energia installation with Board manager details
4) Explain the front end main components of CCS IDE

Practical 2

Practical Name: Hello world of Embedded Systems

Points to be covered in the following order: **Put screenshots in the appropriate places.**

1) Explain the project creation process from the very beginning with the proper dialog boxes that pop up at every stage during project creation.
2) Put the full program for blinking LED.
3) Explain the full process of entering the Debug mode and then starting the program run on the MSP432 board.
4) Explain all the API functions used in the program
5) Explanation the Delay loop and how the timing can be varied by tweaking the delay values.

Practical 3

Practical Name: Installing Node.js ,Node-Red and Node Red interface

Points to be covered in the following order:

1) Start with the steps for installing Node.js, Node-red.
2) Put the commands to do the installation
3) Command to open node red with the screen shot of the command prompt showing the start of the flows.
4) Then open the browser and start node red at the port 1880 and put the screen shot of the same with the URL used in the web browser.
5) Mark all the parts of the node red interface and explain each section of the IDE including the Menu.
6) Explain the concept of nodes and flow.

Practical 4

Practical Name: Introducing the inject, function, debug and switch nodes

Points to be covered in the following order:

1) Use the inject and debug nodes.(Explain the input and the output for the 'Hello' flow. Put the screen shots with screenshots of the settings and label correctly with explanations)
2) Put the Hello IOT flow with the erroneous function node and the corrected function node with the object output.(Put all the screen shots of the flow with the setting and label correctly with explanations)
3) Put the three flows of the function node with array.(Explain each of the three flows with screenshots and labelling .Also put the code with explanation)

Practical 5

Practical Name: Random number generator with selection of color. Introduce the HTTP node.

Points to be covered in the following order:

1) Put the two flows of random number generator with the color selection flow and explain the flow and the code in each case. Put the screen shots with labelling
2) Use the HTTP input and HTTP output node and show the Hello World web page.
3) Put the two wheelers and four wheelers web page and explain the flows with the code in detail with the appropriate screenshots.

Practical 6

Practical Name: CPU utilization flow

Points to be covered in the following order:

1) Installation of node-red-dashboard and node-red-contrib-cpu nodes from the Manage pallet option of the menu.(Explain the steps involved in the installation with screen shots)
2) Put the screenshots of the flow creation and explain all the steps involved in code creation and the dashboard creation in detail with the screenshots.
3) Explain all the nodes used in detail.
4) Take the screenshot of the final dashboard.

Practical 7

Practical Name: WiFi Setup

Points to be covered in the following order:

1) Explain the steps needed for setting up WiFi on the board
2) Explain the need for the PuTTy terminal emulator .Take screenshot of the needed configuration.
3) Explain the API required in the WiFi setup on the board

Practical 8

Practical Name: Analog To Digital Converter

Points to be covered in the following order:

1) Explain the ADC properties.
2) Explain the API used for configuring the ADC
3) How the ADC output is used to control the colors on the LED

Practical 9

Practical Name: Sending Raw data to the cloud

Points to be covered in the following order:

1. Explain the MQTT input and output node
2. Explain the JSON data frame created in the firmware

Practical 10

Connecting MSP432 to the cloud

Points to be covered in the following order:

1) Explain the cloud dashboard creation with screenshots of the configuration of various nodes.
2) Explain the setup of the various subsections of the firmware code on MSP432 .Start with WiFi configuration followed by ADC configuration ,followed by JSON data and MQTT protocol used for communication.
3) Put the screen shot of the final dashboard and explain each section of the dashboard.