Assignment 3

Marks: 10, Time given: 1 Week

Do the following activities, make a screen record video of the same, upload the video in your YouTube account, and share the link:

- From the list of examples in the proteus software, use the "Arduino DHT22 Humidity & Temperature Sensor" example to simulate the system with the following conditions and blink the LED connected to pin 13, accordingly. This involves reading the relative humidity and the temperature from the sensors and giving the appropriate t_{on} and t_{off} duration of LED.

Temperature	Relative Humidity	LED
$T<=15$	$H<25\%$	$t_{on}=1$ s, rest is t_{off}
$T<=15$	$H>60\%$	$t_{on} = 0.5$ s, rest is t_{off}
$T>=28$	$H<25\%$	$t_{on} = 1$ sec, rest is t_{off}
$T>=28$	$H>60\%$	$t_{on} = 0.5$ sec, rest is t_{off}

- From the list of examples in proteus software use the example "Arduino RGB common Cathode LED" to generate a continuous wave at digital pin 13 as given below and observe the signal using the oscilloscope, connected to V_{out}.

  $t_{on} = 0.5$ s, $t_{off} = 1$ s (first part of wave), $t_{on} = 0.25$ s, $t_{off} = 0.5$ s (second part of wave), $t_{on} = 2$ s, $t_{off} = 4$ s (third part of wave), and repeat from the beginning. Thus, time period of the periodic signal will be 8.25 s.

Those of you who have a mac (apple laptop/desktop) can first install trial version of "Parallels Desktop 16for Mac" software (see below link)

https://rb.gy/hkxnar

and then run "Proteaus" executable windows file on your mac.