Electric Online Task (Class1 ICE)- Embedded development

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-I used atmega16 as target as we don't need high processing.

-I used eclipse as IDE to get the binary file as I have an experience with it during my embedded diploma.

-I used proteus (Proteus Professional 8.5.22067 - SP0) as a simulator to test my applications.

-Hardware used:

Q1)

decoder 7447: to minimize the used pins from microcontroller and facilitate the software.

330 ohm resistors: between the decoder and 7-segment to protect the LEDs from high current.

Common anode 7-segment:to display the number on it.

Q2)

10K resistor: as pull up resistor.

Q3)

DC motor: drive it with PWM signal to see its speed change w.r.t Duty cycle.

H-Bridge(L293D): as the microcontroller can’t supply the required current for working of DC motor ,the operating voltage of DC motor may be higher than operating voltage of microcontroller and protect the microcontroller from reversing current that result of DC motor.

Oscilloscope: used to display the waveform to see the change in Duty cycle.

Q4)

DC motor,L293D,10 k resistors as mentioned before.

Switch to shutdown connected to PD3,and Switch to reset the system.

100 ohm resistor: connected to buzzer to protect it from high current.

330 ohm resistors: connected to LEDs to protect them from high current.

-GitHub link include(code ,simulation files ,binary files ,videos)

https://github.com/BeshoyAnwar/Electric-Online-Task-Class1-ICE-Embedded-Development