ASSIGNMENT 02

The questions for Assignment 2 are as follows

Please write the Assignment 2 very clearly.

- ✓ There is a processor GPIO that operates at 3.3V and sources or sinks 10mA.

Perform the following operations:

a) Describe what is source or sink current.
b) Find the GPIO drive strength of Arduino Nano, Uno, and ESP32S2.
c) Draw a circuit with an explanation, to run a DC motor at 12V.
d) Draw a circuit with an explanation to operate a relay at 5V.
e) Perform the simulations in Easyeda.
f) Draw the waveform and voltages at every node of your circuit.

Hint: Look at optocouplers, MOSFETs, and BJTs,.

You need to submit all the datasheets and explain how they are used.

The assignment should have the following topics.

- Table of contents, List of Tables.
- Block diagrams.
- Introduction.
- Description.
- EDA Schematic.
- Simulation diagrams.
- Datasheet references.

- ✓ Repeat the above with 5V 20mA GPIO.