**Task 2.2**

**H-bridge circuit analysis:**

**A computer screen shot of a circuit

Description automatically generated**

H-bridge DC motor driver is designed by 4 enhancement Mosfet transistors which is analogous to switches in the circuit.

Main purpose:

Ability to create a motor which works bi-directionally according to two switches (buttons), we take in consideration also the floating input which may occur, so we handle it by a pull-down resistor for each button which its first terminal is connected to the switch, while the other is to the ground.

How it works:

When switch (1) (left switch) is on and switch(2) (right switch) is off, the motor will rotate clock-wise, while when the opposite occurs, the motor rotates anti-clockwise.

The idea here goes beyond a certain mechanism, which is when the first switch is on, transistors (Q2 and Q4) so current is generated from VDD to GND passing through those transistors and the circuit works, the opposite goes when we switch on (2) transistors (Q1 and Q3) works in the same mechanism.

It's significant now why it’s named as (H-bridge), certainly because transistors work diagonally, where if (Q1 and Q3) are on, then (Q2 and Q4) are off and vice versa.