Driving System of a Lift

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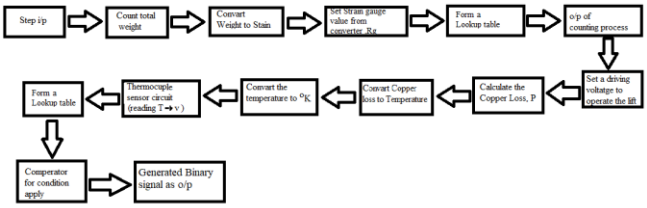
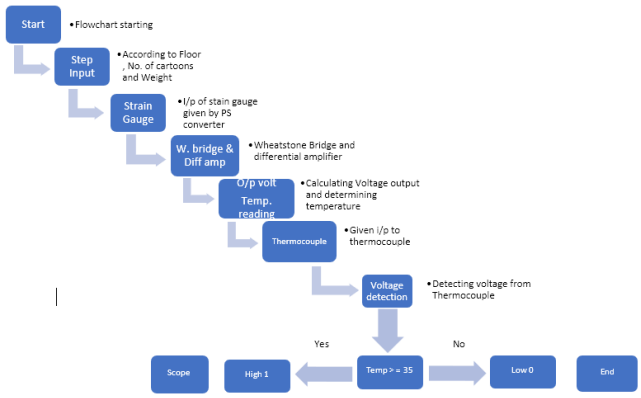
I. FLOWCHART

Objective 1:

Objective 2:

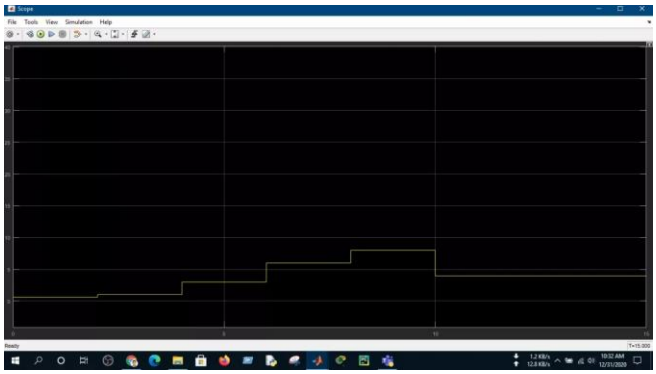


Full project Flowchart:



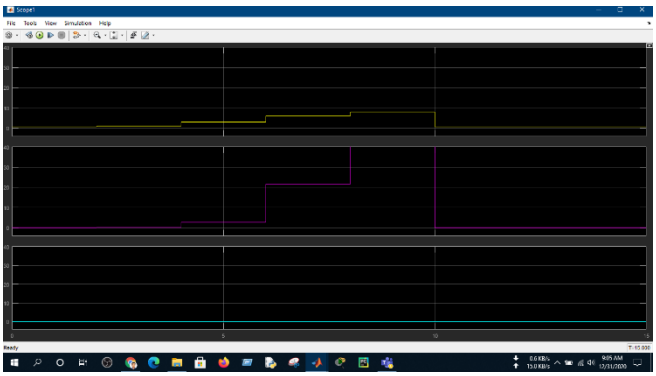
II. GRAPH AND DISCUSSION:

Objective 1:



This figure shows a relationship between the number of cartoons, weights and corresponding times. Here, X axis defines the weight of cartoons corresponding time and Y axis defines number of cartoons. For counting the cartoons in Y axis, we have used a cartoon counting system. The weight of each cartoon is considered to be 60 kg and the total driving system is represented by a single load resistance, RL=10Ω connected with the variable dc voltage supply. Due to the total weight of cartoons placed on the lift floor, there will be a strain on the resistance strain gauge. So, from the figure, we see that with increasing the number of cartoons, the weight is also increasing from 0 sec to 8 sec. Here, there is no cartoon at t=0sec and at t=2sec, first cartoon is added and t=4sec, 6sec and also t=8sec; another 2 cartoons, 3 cartoons, 2 cartoons are also added respectively. As the weight increases so strain will also increase that we see in the graph. But at 10 sec, all the cartoons are removed. For this, in Y axis, the cartoon counting system is decreased with decreasing the weight. Finally, it can be said that the graph is linearly increasing with increase of weight.

Objective 2:



In this graph we have three results the first the number of boxes on the lift, second graph shows the copper loss and the third one shows the binary output signal. The first box the cartoon counting system counts the number of boxes considering the strain gauge resistance and lookup table. We can see with the increase of number of boxes steps are increasing and when boxes are removed steps decreases. In the Cu loss is counted this loss is changing with time variant. When number of boxes are increasing the weight is increasing so the copper loss is increasing and when boxer removed the weight is also less so the copper loss decreases. The 3rd graph shows binary signal output. Limit for driving system temperature was 35°. From the graph we can see the binary signal output is 0 it means the temperature limit was under 35° which indicates that it doesn't exist the temperature limit of diving system.

III. LIST OF RESOURSES:

Step function, Constant, Divide, Add, Math function, Add, Display, Product, Simulink PS convertor, Whetstone Bridge, Differential Amplifier, Solver configuration, Scope, to workspace, 1D lookup table, Electrical Reference, Controlled Voltage source, voltage sensor, current sensor, Ideal Temperature Source, Thermocouple, Thermal Reference, Gain, Sum etc.

IV. CONCULTION

Conclusion: In this project, first objective is mainly counting process. The counting system for the lift, which can produce seven number that corresponds to the weight of total cartoons carried out by the lift. Then the total weight of cartoons placed on the lift floor, there will be a strain on the resistance strain gauge. Assume that, the strain (S) due to total weight of the cartoon (W) can be found. In this case, there are five-step function use. The 1st four step we added seven cartoons and last step function remove four cartoons. Then we systematically added math function, divide, product, and convertor. Then we found cartoon counting system, N (Y-axis) vs Weight (X-axis) on the lift at different times. The second object is detecting the temperature within the lift driving system. In this case, the copper loss (P) inside the driving system is responsible for the increase in temperature. A S-type thermocouple is used for the detection of temperature inside the driving system. In this case, we used thermocouple and current sensor. The two-instrument used for we found out, if the temperature of driving system exceed 35°Cthe output will be 1 (high) otherwise 0 (low) and also determine copper loss & binary output signal. we could successfully be done this project.

V. REFERANCE:

[1] https://www.omega.co.uk/prodinfo/thermocouples.html
[2] https://www.akm.com/global/en/solutions/current-sensing/types-characteristics/
[3] https://in.mathworks.com/help/matlab/referencelist.html