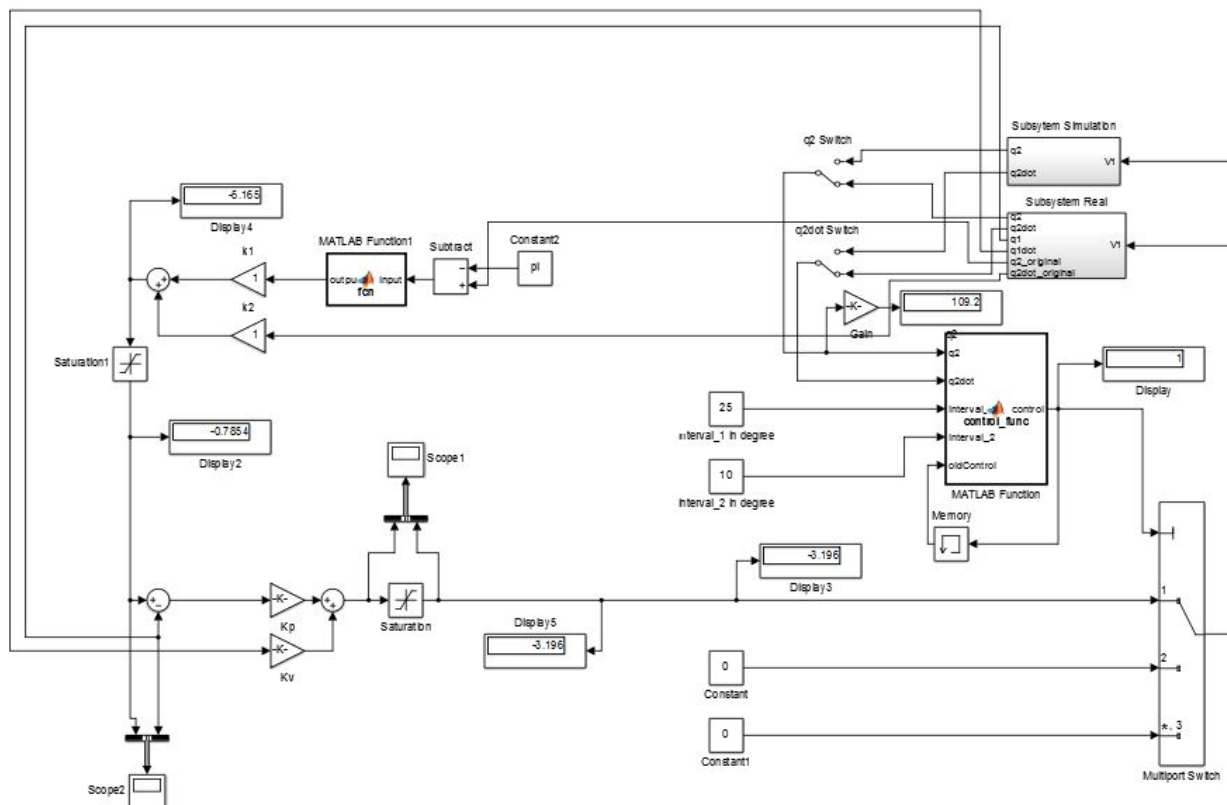


1. Items done this session:



In this session, we keep going on figure out where is the problem that the implementation didn't work last time no matter what value of given gain k_1 and k_2 .

It turns out that we had to fix three things to make the implementation works.

The first is that we'd misunderstand the $H(s)$, which is the simplified mathematical model for the whole previous robotic system rather than extra part adding the voltage.

The second is the redundancy of deriving q_1 dot actual and feeding voltage back toward as q_1 actual. So we delete the derivative and connecting q_1 and q_1 dot from "Subsystem Real" to the PD controller as two of the three inputs.

The last but the biggest mistake we'd made is the inconsistency of the range of q_2 and q_2 dot. We didn't notice that the range of q_2 is critical to be in $[-\pi, \pi]$ for the feedback control system when we built the "control func" for the three state control for the previous assignment. After manipulating the parameters range both inside the "Subsystem Real" and before the gain k_1 , the robotic arm can swing cross to the top and fall down periodically.

2. Items for next session:

Continue to the next lab for making arm balance on the top.