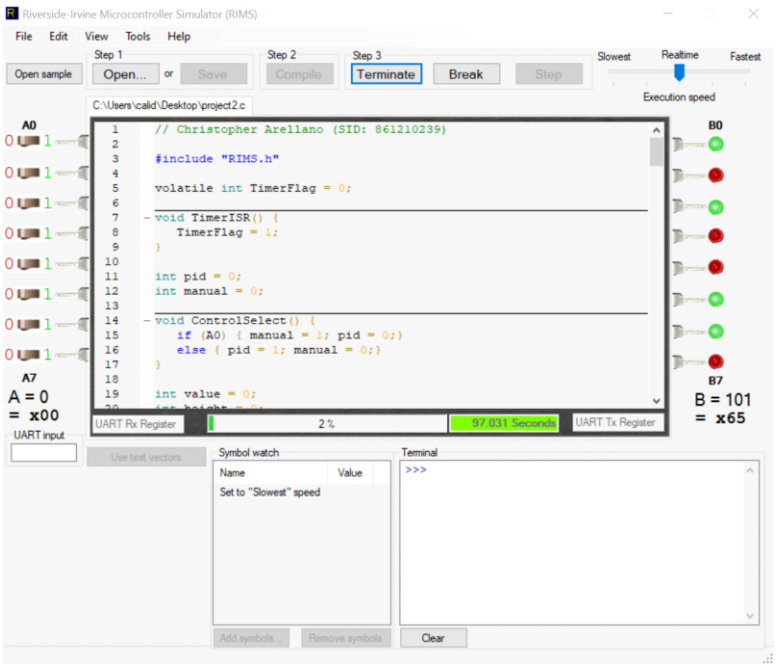
Christopher Arellano

RIMS PID Project #2 Summary

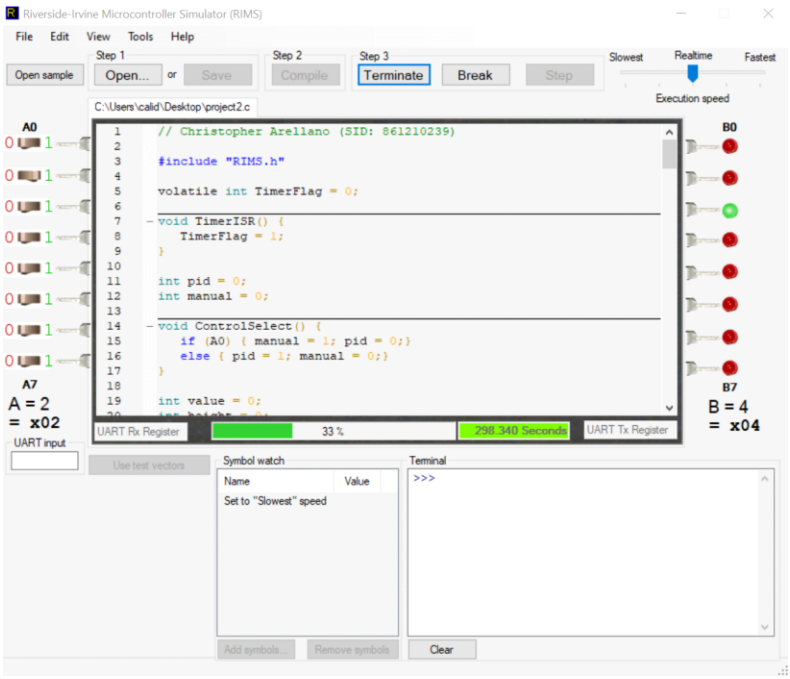
Project Description:

For the RIMS PID project #2 we were instructed to assign A0 as the selector between PID state (A0 = 0) and Manual state (A0 = 1). We were also instructed to assign A1 as a selector between Value representation (A1 = 0) and Height representation (A1 = 1). In addition, we were instructed to assign A6 as the fan speed up button, assign A7 as the fan slow down button and do nothing when both A6 and A7 are pressed at the same time; of which A6 and A7 are only functional during the Manual state. For this project I used the provided javascript code as a guide in order to get the best understanding possible of the way to implement the PID for this project within RIMS. I first analyzed the provided javascript code to the best of my understanding in order to know how I had to structure my code and calculations made for this project within RIMS knowing that float is not really a viable option. For the PID state, that I have made to the best of my understanding of the provided javasript code, the ball begins at position 0 and gradually increases its height and avoids overshooting and stays within +/- 1 of the desired value; of which the desired value is 100 in the case of Value representation and the desired height is B3 in the case of Height representation. For the Height representation I have assigned values 0-24 to B7, 25-49 to B6, 50-74 to B5, 75-99 to B4, 100 to B3, 101-134 to B2, 135-167 to B1 and 168-200 to B0. As for the Manual state, that I have also made to the best of my understanding of the provided javasript code, the ball begins at position 0 and gradually increases or decreases depending on whether A6 or A7 where pressed in order to speed up or slow down the fan speed, which then affects the current ball position.

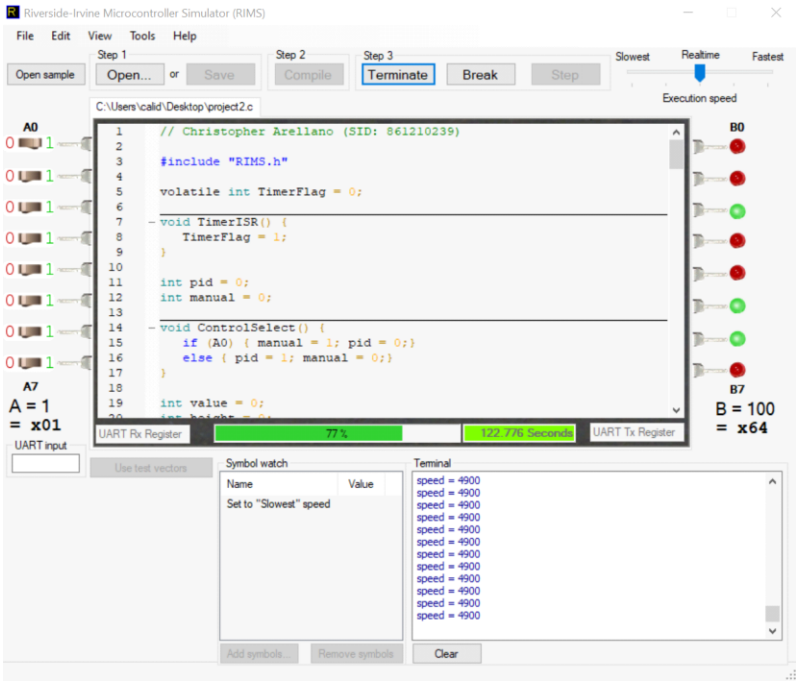
PID state output example (Value representation):



PID state output example (Height representation):



Manual state output example (Value representation):



Manual state output example (Height representation):