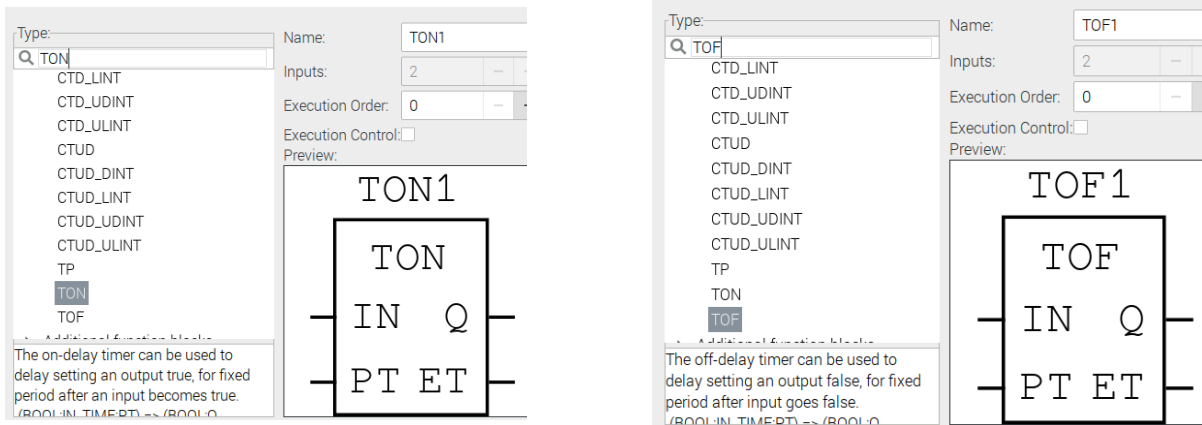
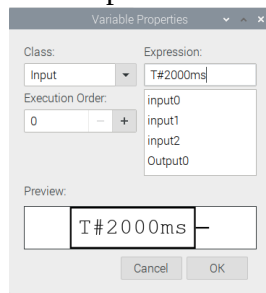


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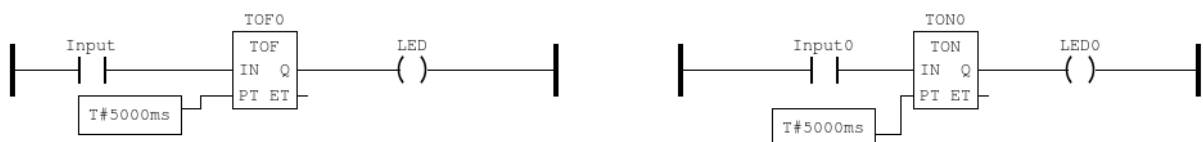
In this lab we picked up where we left off in Lab 2 and began using function blocks to delay the actions on the circuit. These function blocks can also be used for adding logic operators to programs for now we used two types which delay operations. TOF which delays an output from turning off and TON which delays one from turning on. These can be used in various ways such as a door timer for handicap access.



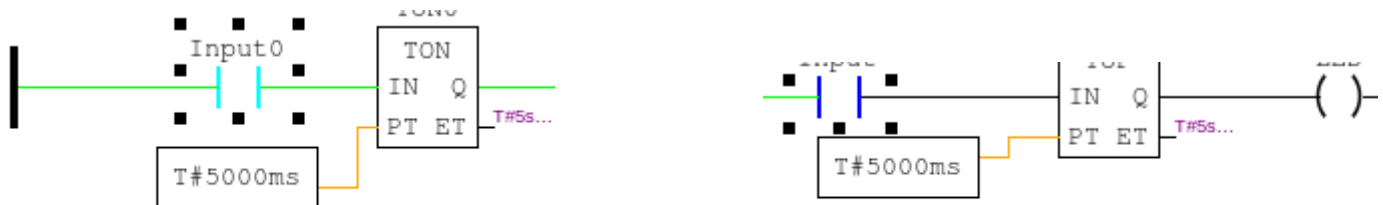
These blocks also require a variable block to work, they can take the form of a timer as seen here or as an established variable like an input or output. Here the one is timer set to 2000ms or 2 seconds.



In a program they look like this put together.



The first ladder will delay the output (LED) from turning off for 5 seconds. The second ladder delays LED from turning on,



In the images the purple text next to ET acts as a display for the timer, ON works when the electricity passes through the input and OFF works when the input is not on.

PART 2

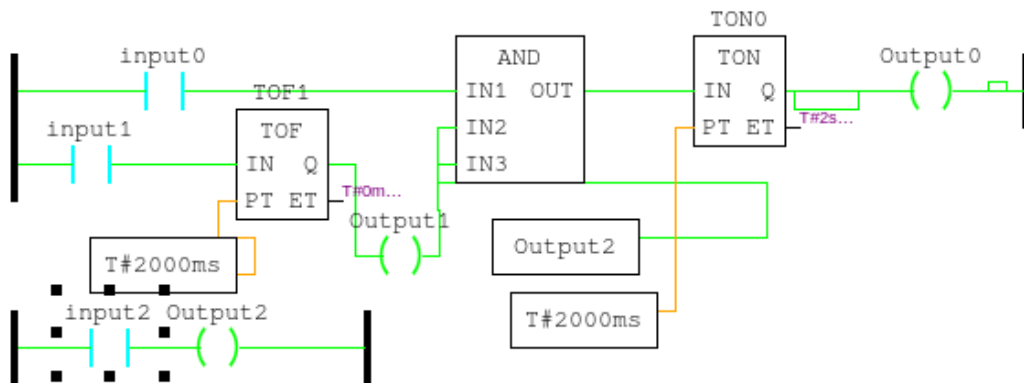
In the second part of the lab, we had to use the functions we used along with 3 inputs/outputs, and 2 rails. Here is what I created (quickly)

Description: Class Filter: All

#	Name	Class	Type	Location	Initial Value	Option	Documentation
1	input0	Local	BOOL	%IX0.0			
2	input1	Local	BOOL	%IX0.1			
3	input2	Local	BOOL	%IX0.2			
4	Output0	Local	BOOL	%QX0.0			

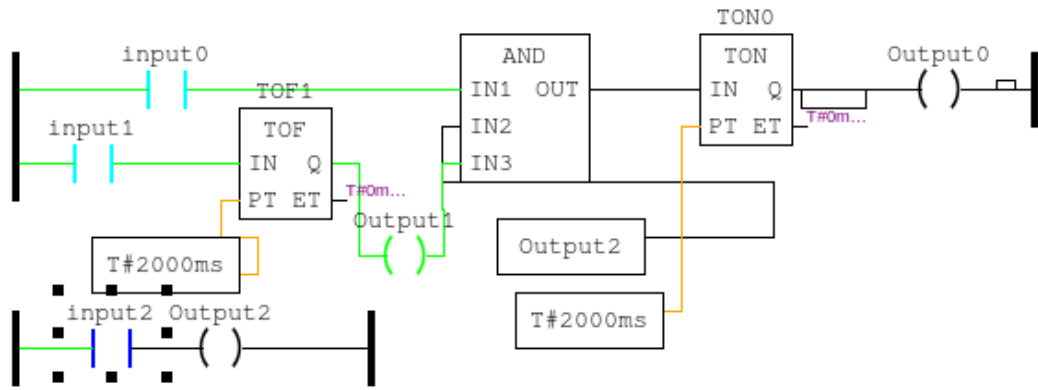
Rail 1: Input 0 acts as a normal button to open something (Output 0), input 1 acts the same but activates output 1 as a safety light, which has a delayed time off to keep it lit. all these paths meet at the AND function which also requires output 2 to be positive which will then open the something.
 Rail 2: The safety rail, as a final check to open something input 2 must be pressed to activate output 2, completing the AND.

In action it looks like this. All on

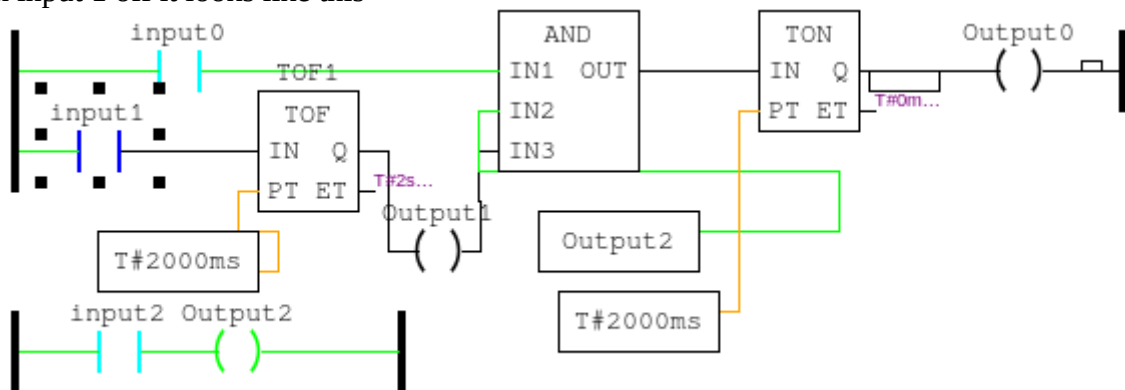


With all inputs on it will look like this

With 2 off it will look like this



With input 1 off it looks like this



Notice that with the 2 second delay, output 0 is lit up for a brief period, I was not quick enough to capture it.

With input 0 off

