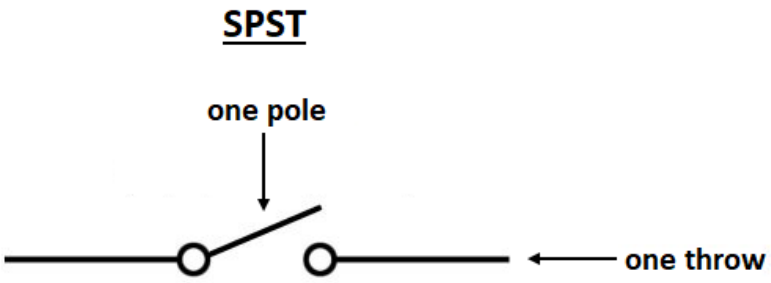
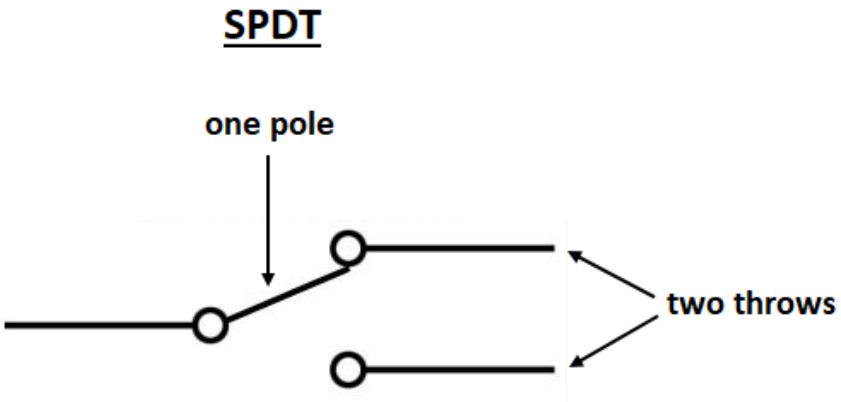
Part(B) Basic Switch Review

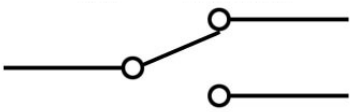
The purpose of a basic switch circuit is to provide a digital high or low signal to a microcontroller input. The pushbutton switch that you have used up until this point is called a single pole, single throw (SPST) switch and it is normally open. It is also a "momentary" switch, meaning that it is closed only when the button is held down. The symbol for an SPST switch looks like this:



In this exercise you will learn how to use a single pole, double throw (SPDT) switch. This is a "position" switch instead of a "momentary" switch. This means that you do not need to continuously press the button in order keep the switch closed. The symbol for an SPDT switch looks like this:



Get an SPDT switch from your instructor and figure out how it works. You may need to use your multimeter to see which terminals of the switch are connected, and when. Figure out how to hook up the switch such that one throw is low (0V) while the other in high (5V) and toggling the switch causes them to switch (so the throw that was 5V goes to 0V and the throw that was 0V goes to V). Draw the schematic for the circuit you plan to build in the space below:



Build the circuit that you sketched. You may want to use your alligator clips to connect to the switch terminals. Use a multimeter to verify that the throws (outputs) alternate between low and high as you toggle the switch. Demonstrate the circuit and show your schematic to your instructor.