Implementing a motor in our project

Monday, September 19, 2016
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For this circuit there will be known need of manually turning on or of the taps, we will be able to add this add on by the use of dc motor. How will the motor operate:

- If the tank is empty or half-filled the motor will rotate in anticlockwise direction thus turning on the valve and water gets into the tank.
- If the tank is full, the motor will rotate in clockwise direction thus turning off the valve and water doesn't get into the tank.

NB:// The direction of rotation of the motor needn't be the same as the explanation above, it will solely depend on the way the tap valve is designed, e.g.

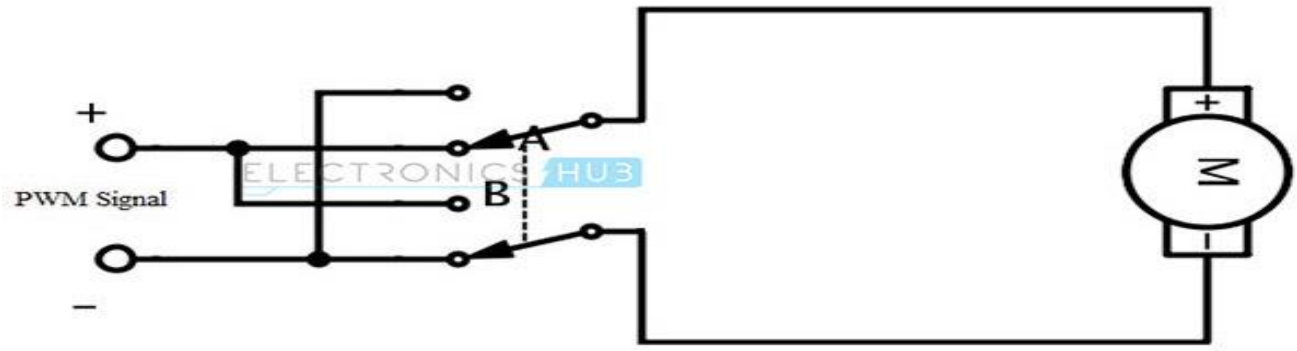
- Closing may be anticlockwise , while opening may be clockwise
- Closing may be clockwise , while opening may be anticlockwise

The rotor of the dc motor will be connected to tap valve, in such a way that as it rotates, it causes the valve to rotate along with it. Whereas the stator will be fixed to permanent(stationery) position such as a wall.

Changing the Direction of DC Motor

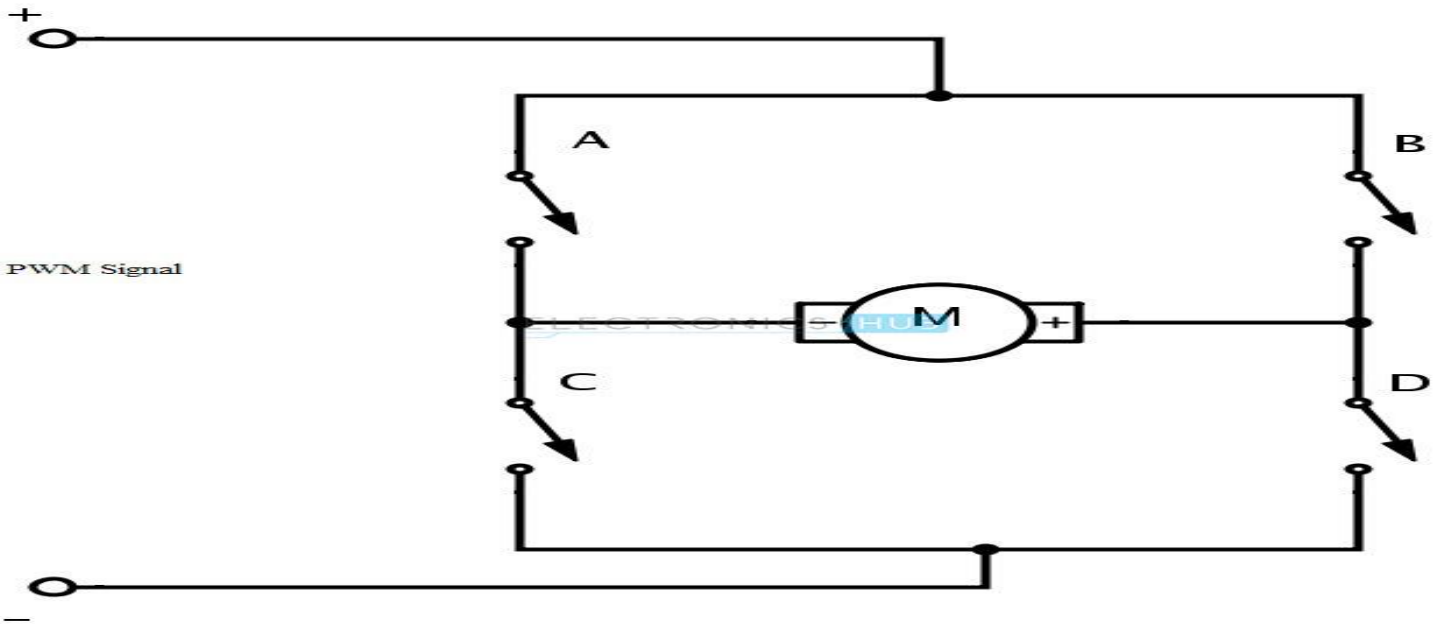
-In order to change the direction of rotation of the motor, the polarity of the supply must be reversed. To achieve this, different switches can be used. The two switch ideas are:

1: Using a DPDT(double pole, double throw) switch. The connection is shown below:



-When the switch is in position A, the motor rotates in forward direction. When the terminals of the motor are connected to a switch in position B, the direction reverses.

2: Using four SPST (Single Post, Single Throw) switches:



-By combination of different switches, different functionalities can be achieved. The combination and their respective operations are as follows:

- A + S - Forward Direction
- B + C - Reverse Direction
- A + B - Stop and Brake
- C + D - Stop and Brake
- All OFF - Stopped

- We will decide on the kind of switch we are going to use later, during the stages of implementation.

Frankline Sable at 9/19/2016 8:24 PM

How did we come up with this idea?

In the school of computing and informatics, there is an overhead tank, which frequently leaks water from morning to dawn when its full. This results in a significant wastage of the precious resource water, because the water which would otherwise be used fill up 3 other tanks is wasted to the ground. We want to digitalize our school, and since we are the engineers it's up to us to put our skills to use to solve the various issues affecting our school, and unintentional water wastage is one of them. (That's my logic, with Kate And AB)