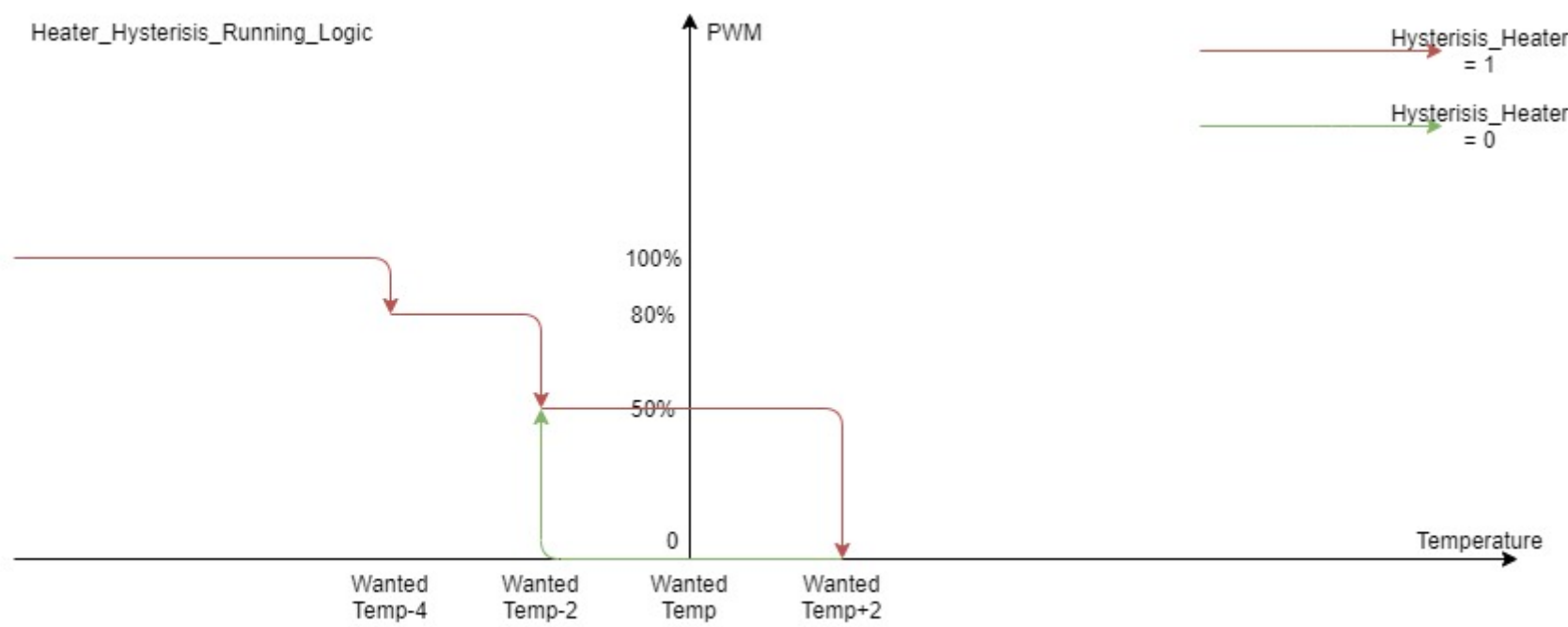
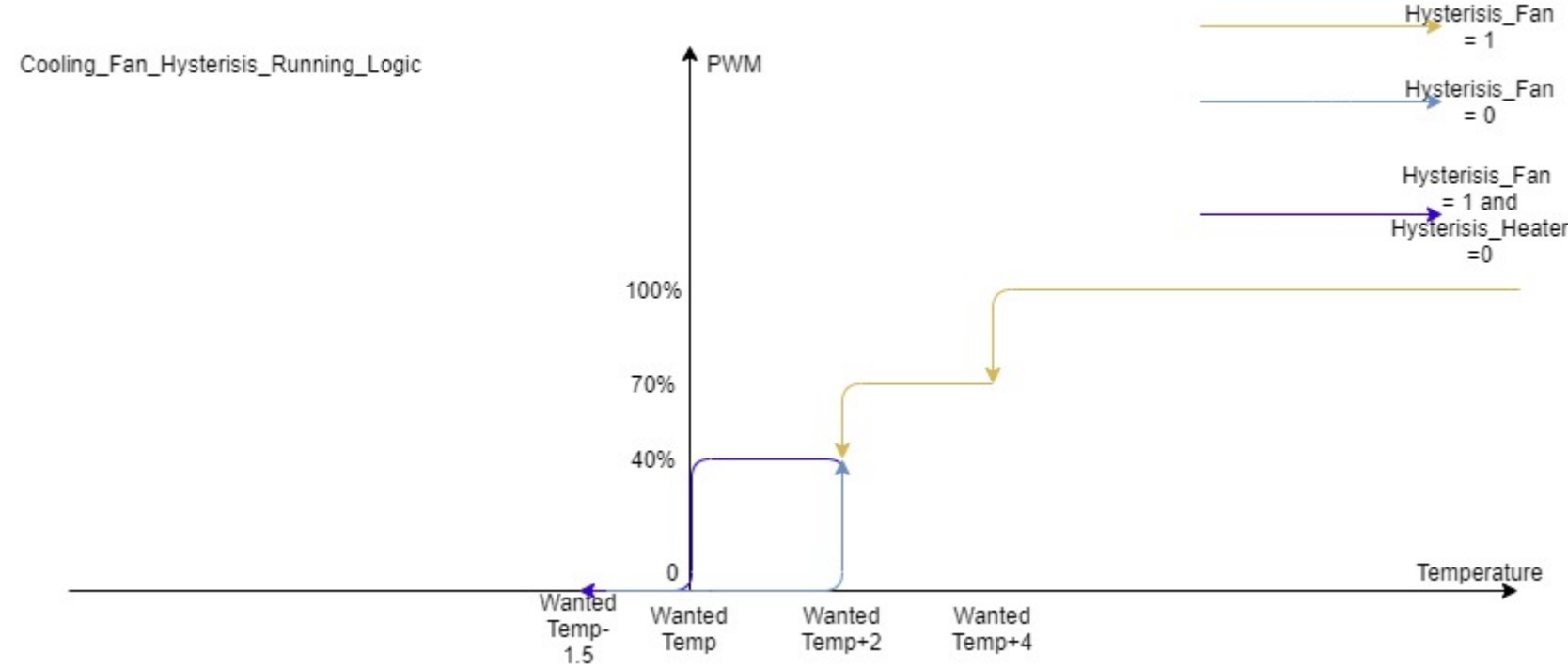
Table


Heater_Hysterisis_Running_Logic
PWM
Hysterisis_Heater = 1
Hysterisis_Heater = 0
100%
80%
50%
0
Temperature
Wanted Temp-4
Wanted Temp-2
Wanted Temp
Wanted Temp+2


Cooling_Fan_Hysterisis_Running_Logic
PWM
Hysterisis_Fan = 1
Hysterisis_Fan = 0
Hysterisis_Fan = 1 and Hysterisis_Heater =0
100%
70%
40%
0
Temperature
Wanted Temp-1.5
Wanted Temp
Wanted Temp+2
Wanted Temp+4

```
//Hysteresis_Heater = 1 mean the real temperature from low to high, Hysteresis_Heater = 0 mean  the real temperature from high to low
//Heater working logic
if (Real_Temperature < Wanted_Temperature)
{
    if    ((Hysteresis_Heater    ==    0)    &&    (Real_Temperature    <
Wanted_Temperature-2))
    {
        Heater_open;
        Hysteresis_Heater = 1;
    }
}
else    if    ((Real_Temperature    >    Wanted_Temperature+2)    &&
(Hysteresis_Heater==1))
{
    Heater_close;
    Hysteresis_Heater = 0;
}

//Heater_Fan (Used to transfer heat from heater to green house) working logic;
if ((Real_Temperature > Wanted_Temperature-2) && (Real_Temperature <
Wanted_Temperature+2))
{
    if (Hysteresis_Heater == 1)
    {
        Heater_Fan runs in 50% pwm;
    }
}
else if ((Real_Temperature > Wanted_Temperature-4) && (Real_Temperature
< Wanted_Temperature-2))
{
     Heater_Fan runs in 80% pwm;
}
else if ((Real_Temperature < Wanted_Temperature-4))
{
    Heater_Fan runs in 100% pwm;
}

else Heater_Fan close;

//Cooling_Fan working logic;
//Hysteresis_Cooling_Fan is to prevent unstable reading from temperature sensor(LM35) frequently open and close the cooling fan.
```

```
if((Real_Temperature > Wanted_Temperature) && (Real_Temperature<Wanted_Temperature+2))
{
    if(Hysteresis_Heater == 0) // to make sure the cooling fan and heater not running together
    {
        if(Hysteresis_Cooling_Fan == 1)
        {
            Cooling_Fan runs in 40% pwm;
            Hysteresis_Cooling_Fan = 0; //  make the cooling fan not often open and close because the LM35 reading unstable between wanted temperature
        }
    }
}
else if ((Real_Temperature > Wanted_Temperature+2) && (Real_Temperature<Wanted_Temperature+4))
{
    Cooling_Fan runs in 70% pwm;
}
else if (Real_Temperature >= Wanted_Temperature+4)
{
    Cooling_Fan runs in 100% pwm;
}
else Cooling_Fan don't work;
if (Real_Temperature < Wanted_Temperature-1.5)
{
    Hysteresis_Cooling_Fan = 1;
}
```