/\* Gasthon project

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\* tools.hpp

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#ifndef TOOLS\_HPP

#define TOOLS\_HPP

#include "Arduino.h"

#include <Servo.h>

// default delay to enter in emergency mode

#define DELAY 5000 // in ms

namespace tools

{

//---------------------------------------------------------------------------------------------//

struct Ventilation

{

// constructor

Ventilation(uint8\_t pin0, uint8\_t pin1, uint32\_t wait\_t= DELAY):

pin\_balance{pin0}, pin\_orient{pin1}, start\_time{0}, wait\_t{wait\_t},

emergency\_count{false}, doRun{false}

{

};

// run it once to initialize the ventilation system

void begin()

{

servo\_balance.attach(pin\_balance);

servo\_orient.attach(pin\_orient);

servo\_balance.write(0);

servo\_orient.write(0);

};

uint8\_t run()

{

// if no need to ventilate, exit

if(!doRun) return 0;

Serial.println("doRun");

if(!emergency\_count)

{

emergency\_count = true;

start\_time = millis();

}

if(millis() - start\_time > wait\_t)

{

Serial.println("emergency");

servo\_orient.write(90);

}

servo\_balance.write(20);

delay(250);

servo\_balance.write(0);

delay(250);

return 1;

};

void set()

{

if(!doRun)

{

Serial.println("set");

doRun = true;

}

};

// reset to initial position

void reset()

{

if(doRun)

{

Serial.println("reset");

servo\_balance.write(0);

servo\_orient.write(0);

emergency\_count = false;

doRun = false;

}

};

// motorisation members

Servo servo\_balance, servo\_orient;

uint8\_t pin\_balance, pin\_orient;

// timer members

int32\_t start\_time;

uint32\_t wait\_t;

// flags

bool emergency\_count, doRun;

};

//---------------------------------------------------------------------------------------------//

inline

void displayTemp(float temp)

{

static float prev\_temp = temp+1.;

if(temp > prev\_temp + 0.3 || temp < prev\_temp - 0.3)

{

prev\_temp = temp;

Serial.println("candle temperature : "+String(temp)+" °C");

}

};

}// namespace tools

#endif