//threshold for master node to perform AIMD

int thresholdT;

int thresholdM;

//random variable making the random time activation of master node

int x;

//master node of temperature sensors

int masterT;

//master node of moisture sensors

int masterM;

//array storing the pin of arduino working as the master node

int ms[13]={0,0,0,0,0,0,0,0,0,0,0,0,0};

//storing the battery level of each sensor node

int battery[13]={0,0,100,0,100,0,100,0,100,0,100,0,100};

//master node rotaion variable in temperature sensors

int jT=2;

//master node roataion variable in moisture sensors

int jM=8;

void setup()

{

Serial.begin(9600);

pinMode(2, OUTPUT);

pinMode(4, OUTPUT);

pinMode(6, OUTPUT);

pinMode(8, OUTPUT);

pinMode(10, OUTPUT);

pinMode(12, OUTPUT);

randomSeed(millis());

}

//master node activation of temperature sensors

void loop2()

{digitalWrite(masterT, HIGH);delay(1000);digitalWrite(masterT, LOW);delay(1000);battery[masterT]-=5;}

//master node activation of moisture sensors

void loop3()

{digitalWrite(masterM, HIGH);delay(1000);digitalWrite(masterM, LOW);delay(1000);battery[masterM]-=5;}

//main loop

void loop()

{

//temp MASTER ROTATION

if(jT!=8&&battery[jT]>=50) masterT=jT;

else{jT=jT+2;if(jT==8)jT==2;loop();}

//moisture MASTER ROTATION

// if(jM!=14&&battery[jT]>=50) masterM=jM;

//else{jM=jM+2;if(jM==14)jM==8;loop();}

Serial.println("TEMPERATURE BATTERY LEVEL");

for(int i=2;i<=6;i=i+2){

Serial.print(i);

Serial.print(" ");

Serial.println(battery[i]);

}

//Serial.println("MOISTURE BATTERY LEVEL");

//for(int i=8;i<=12;i=i+2){

// Serial.print(i);

//Serial.print(" ");

// Serial.println(battery[i]);

//}

//CALLING MASTER ACTIVATION LOOPS

loop2();

//loop3();

//ACTIVATING temp SLAVE NODES FOR BOTH

for(int i=2;i<=6;i=i+2){

if(i!=masterT){ digitalWrite(i, HIGH);battery[i]-=5;}

}delay(1000);

//ACTIVATING moisture SLAVE NODES FOR BOTH

//for(int i=8;i<=12;i=i+2){

//if(i!=masterM){ digitalWrite(i, HIGH);battery[i]-=5;}

// }delay(1000);

for(int i=2;i<=6;i=i+2){

if(i!=masterT) digitalWrite(i, LOW);

}delay(1000);

//for(int i=8;i<=12;i=i+2){

// if(i!=masterM) digitalWrite(i, LOW);

// }delay(1000);

x=5;

Serial.println();

int ai=1000;

int clock=0;

//minimum value to maintain

while(x--) {thresholdT=random(0,40);Serial.println(thresholdT);

if(thresholdT>20)ai+=2000;

else ai=1000;

if(ai>=7000)ai=5000;

Serial.print("delay ");

Serial.println(ai/1000);

clock+=ai;

if(clock<=12000)

delay(ai);

else x=0;

loop2();

//thresholdM=random(1,10);loop3();

}

jT=jT+2;

if(jT==8) jT=2;

//jM=jM+2;

// if(jM==14) jM=8;

}