Interupts : and global definitions -

```
① guard-routine-open {
      ready = 0; running = 0;              *guard
      guard-open = 1;
      guard-fault = 1; }

② guard-routine-close {
      guard-open = 0; }

③ stoped-routine {
      ready = 0; running = 0;
      stopped = 1; }

④ Not-stopped-routine {
      stoped = 0; }

⑤ Temp_high routine {
      ready = 0; running = 0;
      temp_high-fault = 1;
      temp_high = 1; }
      count2 = 0;

⑥ Temp- not- high {
      temp_high = 0; }

⑦ start {
      running = 1; }

⑧ count = 0;                  ⑩ count 3 = 0
⑨ count2 = 0;
```

Main function

```
~~count=0~~ count=0; count4=0;  count3=0;
① while ( ready ==0) {   // sub-loop for when  not ready
    LED 2 = 0;
    if ( count==0) {
        time_~~start~~ millis;
        count++; }
    if(|time_start - millis| > 0.5s) {   // flashing
        LED1 = !LED1;
        time-start = millis; }
    if ( temp-highfaut == 1 ) { LED4 =1;
        if ( count2 == 0) {
            time start2 = millis; }
            count2++;
        if (|timestart2 - millis| > 0.5s) {
            ~~fault~~ temp_high_fault = 0;
            LED4 = 0; }
                         && count4 == 0
   if ( guard_fault == 1) {   // only ~~while~~ after running
      LED 3 =1;
      if ( count3 == 0) {
          timestart3 = millis; }
          count 3 =1; }
      if( |timestar 3 - millis | > 0.5s) {
          guard_fault = 0; }
          ~~count4~~
          count4 =1; }
 if (guard_open = 0 && temp_high = 0 && stop = 0) { ready = 1; }
```

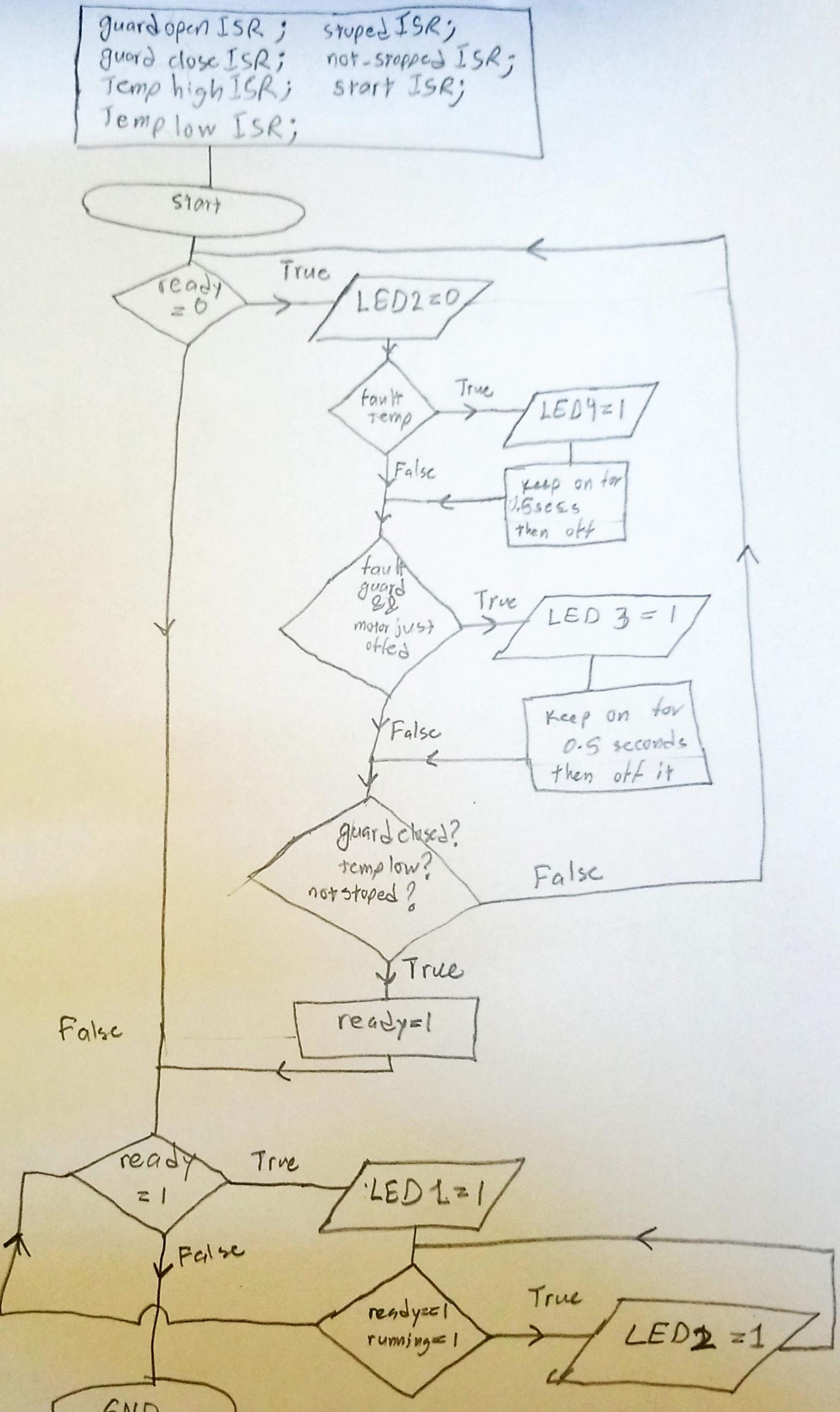
```
② while ( ready ==1) {
      LED1 =1; LED3=0; LED4 =0;
      while (running ==1 && ready ==1) {
         ~~mo~~ LED2=1; }
```

To summarize :

```
loop ① ://when the machine not ready we run this loop
     While ( ready==0){
      LED2 = 0;
        if( 0.5s has passed since start of loop) { // flashing
            LED1 = !LED1;
            reset.timer1; }
        if (fault of high temp) { // fault alarm (temp)
          LED4=1;
            if( time-passed since first run of if function >0.5)
             { LED4=0;
               fault high temp = 0; }

       if (fault of guardopen made motor change state) {
          LED3= 1;
          ~~if(count3==0) {~~
           ~~timestart3 = millis~~;
          if (time-passed >0.5s) {
           fault-guard =0;
           LED3=0; }
       }
```

```
    if ( no issue (guard, tem, and stop button) ) {
        ready=1; }
} // end of not ready loop.
while (ready =1){
        LED 1 =1;
        while ( running=1 && ready=1 ){
            LED1 =1;
```


guardopen ISR ;
stuped ISR;
guard close ISR;
not-stopped ISR;
Temp high ISR;
start ISR;
Temp low ISR;
start
ready =0
True
LED2=0
fault temp
True
LED4=1
keep on for 0.5secs then off
False
fault guard && motor just offed
True
LED 3 = 1
Keep on for 0.5 seconds then off it
False
guard closed? temp low? not stoped ?
False
True
ready=1
False
ready =1
True
LED1=1
False
ready==1 running==1
True
LED2 =1
END