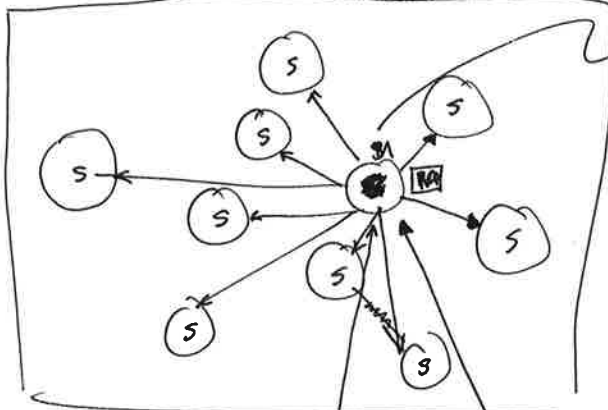
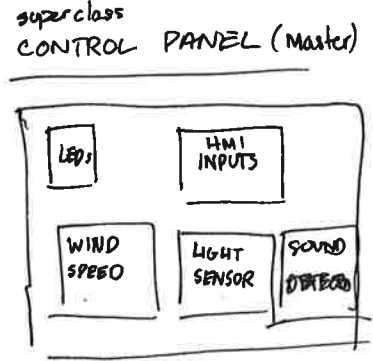
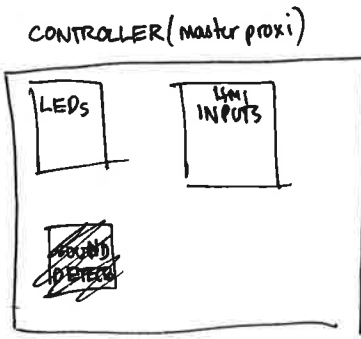
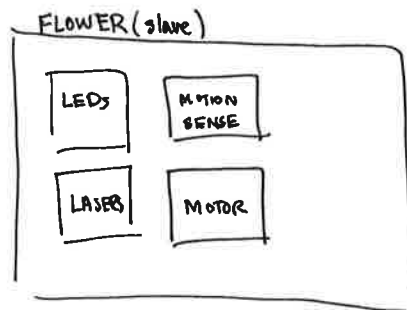


BLUMEN LUMEN  
State machine  
FLOWER

Overview: (M) MASTER COORDINATES ALL SLAVES  
ALL WIRELESSLY (S)



MASTER FLOWER has a control panel base



MODES OF INTERACTION

FLOWER

DAY

NIGHT

REACTIVE

LEDs OFF  
LASERS OFF  
MOTION SENSE ON  
MOTOR ON

PASSIVE

LEDs OFF  
LASERS OFF  
MOTION SENSE OFF  
MOTOR ON

REACTIVE (PEOPLE)

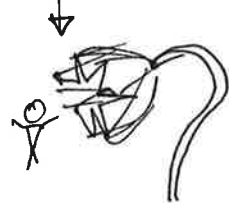
LEDs ON  
LASERS ON  
MOTION SENSE ON  
MOTOR ON

REACTIVE (PARTY)

LEDs ON  
LASERS ON  
MOTION SENSE ON  
MOTOR ON

PASSIVE

MOTION SENSE OF



SOMEONE ACTIVATES IT



FLOWERFUL ANIMATIONS



SOMEONE ACTIVATES THE LIGHT SHOW



ART CAR SOUND ACTIVATED



colorful animations

(non-trivial) example

coordinate animation → send animation function name → runs indefinitely → stop frame

PROTOCOL (Design: to minimize messages)

MESSAGE FROM MASTER TO SLAVE

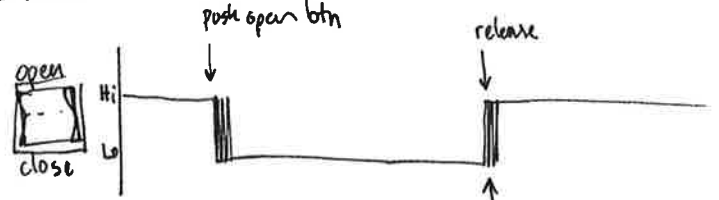
- START BYTE
- TIMESTAMP (+ bit if first message)
- Address of recipient (since booting up?)
- COMMAND
- parameter
- ...
- end-parameters-byte

MESSAGE FROM RC to MASTER

- START BYTE
- MASTER ADDR
- ~~START BYTE~~ COMMAND
- PARAMETERS
- INPUTS
- end-Byte

MASTER converts inputs and does logic. sends w/ timestamp

(non-trivial) example



send open command to open indefinitely

recognize change - send stop command to stop motor

TRANSITIONS TO DIFFERENT states MODES

DAY ← light sensor → NIGHT

REACTIVE ← motion detected ← PASSIVE

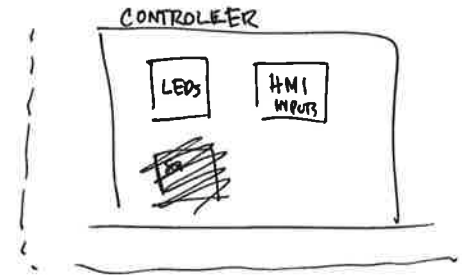
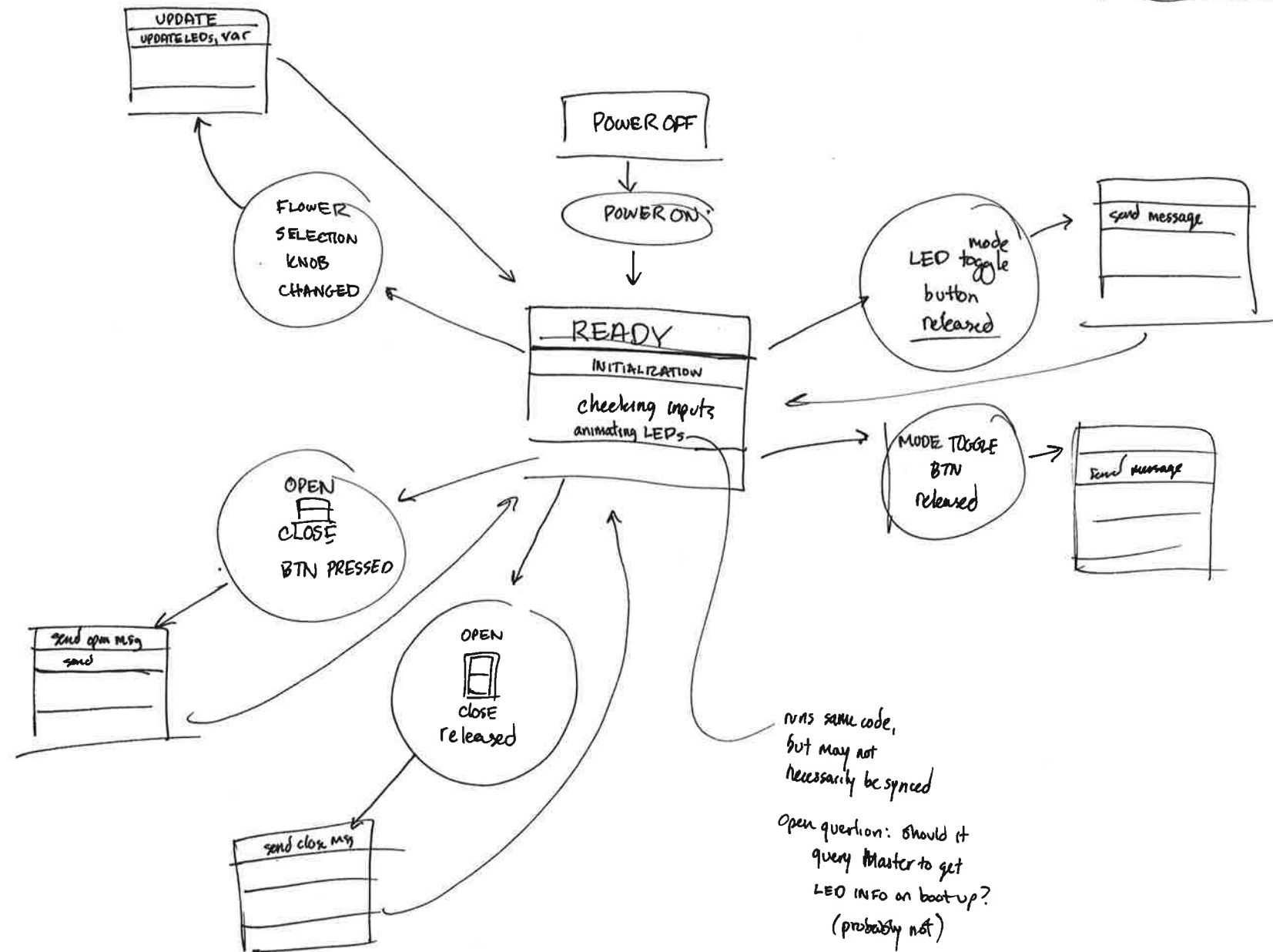
NO MOTION DETECTED FOR SOME TIME

REACTIVE (party) ← sound (db) exceeds a certain amount for some time  
audio jack detected

STANDBY ← wind speed

\* ANY OF THESE STATES CAN BE FORCED

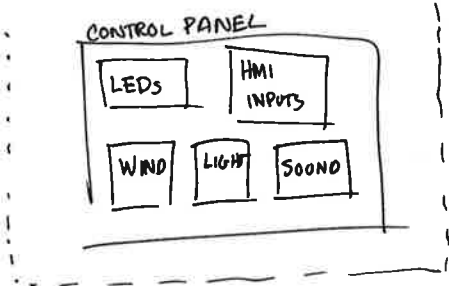
# BLUMEN LUMEN STATE MACHINE CONTROLLER



THESE GUYS  
CAN BE REPROGRAMMED  
TO CHANGE THRESHOLDS/  
PARAMETERS ON FLOWERS

BLUMEN LUMEN  
STATE MACHINE

Control PANEL  
(MASTER)



CAN BE REPROGRAMMED

