Final project proposal
Feeding cat machine
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Short project overview:

We want to do a automatic pet feeding machine. It have two function. It can automatic fill the pet food bowl and the water bowl by time schooling or through bluetooth control. Moreover, it is like a drawer so it will automatically go back when the bowl is empty or the pet leave. Before filling the food or water, it will check how much pet food or water is left for sake of filling the amount master desired.

Moreover, we have a control panel to control if master want the machine to be automatic or manual. If it is automatic, the control panel will send the signal for machine to fill the food or water.

If we switch it into the manual mode. The machine will only fill the food or water when master send the signal manually.

The control panel will be able to control the amount of water as well as food by multiple level.

List of complexities:

For our project:
We will have different sensor:
1, We need sensor to detect how much food or water is left, Thus, we find those.
https://www.sparkfun.com/products/10245
https://www.sparkfun.com/products/10221

For the weight and the water level.

2. We will use several dc motor to control the drawer. However, right now, we are not sure how to do the drawer.

3. We will use one small water pump to pump the water.
4. We need to use sensor to detect if the pet show up or the pet leave.

5 We might do separate drawer, so it will only open the water thing when the pet come closer.

6 We also have remote control for the user to control the drawer. We are going to utilize the bluetooth
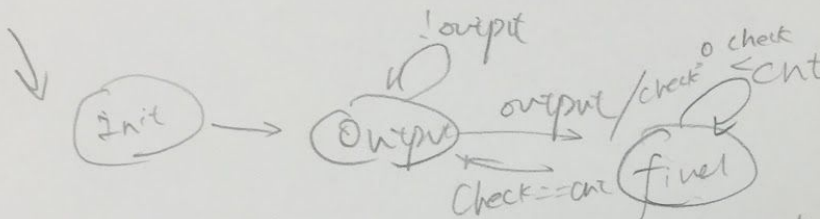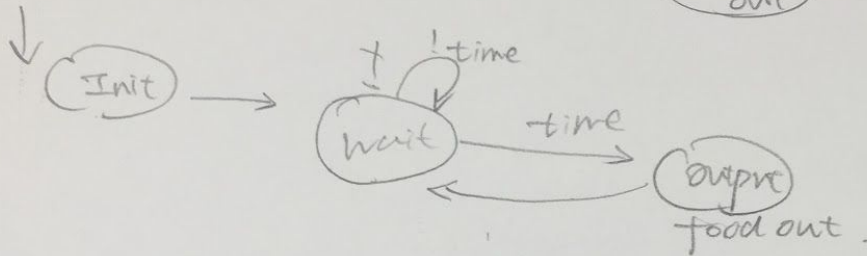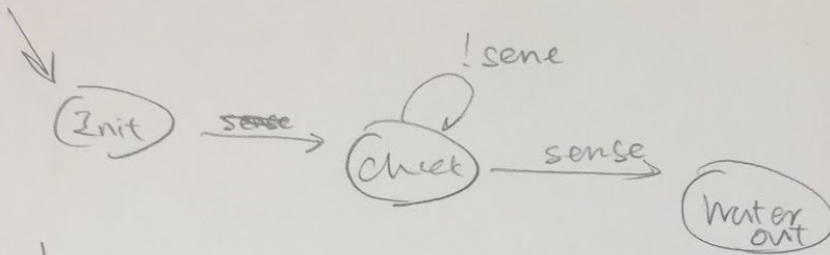
Timeline for milestones
We are going to complete the 1 and 2 at the week 1
3 and 4 at the week 2
5 and 6 at the week 3

For usart we are going to use for the communication between the food bowl and the output place of the food.

High level state machine is at the bottom.

Init → sense → Check

Check: !sene (self-loop)

Check → sense → water out

Init → Wait

Wait: !time (self-loop), t

Wait → time → output

output → (back to Wait)

food out.

Init → Output

Output: !ouput (self-loop)

Output → ouput/check → final

Output → check==cnt → final

final: o check ≤cnt (self-loop)

Sense the food left in
the bowl, see if
there is any 70.
ouput the amnt
is needed