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Physical Computing  
Final project component pseudo code  
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## Interaction Function Maps

The ultrasonic ranger sends out a pulse every second. Measure the echo time that is returned and calculate the distance using the conversion factor (see spec). The servo motor is controlled by Pulsout.

Main:

High LEDs for Pin 0-5

Pause 1 second

Low LEDs for Pin 0-5 //flash LEDs to draw attention

CheckDistance:

If the distance is less than 60 inches, then

High for LEDs on flower (Pin 6 – 12) //turn LEDs on

FlowerServo:

for loop for 10 seconds

pulsout PIN#, value of angle rotation

//do continuous rotation or shift back and forth 180 degrees while //

someone is standing in front of the flower

next

Else

Low for LEDs on flower (Pin 6-12)

EndIf

The Memsic accelerometer sends out a pulse based on the x and y axis of the thermal bubble. The Basic stamp reads Pulsin from the accelerometer and calculates the gforce value (see Parallax project #28017)

WateringCan:

Read gforce from pulsing for x and y axes, set to variables, return the variable values

If x and y differ from 180 degrees then

WaterCanServoOut:

High LEDs for Pin 13-15

For loop for 3 seconds

Pulsout PIN #, value of angle rotation //enough to let string dangle out

Next

Else //if 180 degrees and flat

Low for LEDs for Pin 13-15

Elseif (check if I can do Elselfs?)

//retract LED string

WaterCanServoIn:

For loop for 3 seconds

Pulsout PIN #, value of angle rotation opposite from out subroutine

### **Revised Installation Flow (Flower)**

On a table that is against a wall or underneath a window, there will be a flower pot with grass and a watering can. In the flower pot grass, there are a few LEDs that flash intermittently in a loop.

Drawn by the flashing lights, the user walks toward the table and notices the watering can and the flower. When they get within 5 feet of the flower, the LEDs in the flower light up. When there is nothing within 5 feet of the flower, the LEDs turn off.

When the user pick up the watering can to water the flower, the accelerometer detects the change in motion and triggers the motor inside the watering can to extend a string of white LEDs. The LEDs will be lit up.

When the watering can is replaced back on table in a horizontal position, the motor retracts the string of LEDs and they turn off.

While the flower is being watered, the central core of LEDs rotates in the center of the flower.