/\* LAB 6 - VISION \*/

/\*Using the camera to track colored objects\*/

/\*Following the green object\*/

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#include <kipr/botball.h>

#define MAX\_VEL 25

//function to make the robot turn left

void turn\_left()

{

motor(0, MAX\_VEL\*2);

motor(1, -MAX\_VEL\*2);

printf("turn left\n");

msleep(20);

}

//function to make the robot turn right

void turn\_right()

{

motor(0, -MAX\_VEL\*2);

motor(1, MAX\_VEL\*3);

printf("turn right\n");

msleep(20);

}

//function to make the robot go straight

void go\_straight()

{

motor(0,MAX\_VEL/2\*3);

motor(1,MAX\_VEL/2\*3);

printf("go straight\n");

}

int main()

{

camera\_open();

while(!c\_button\_clicked())

{

camera\_update();

//printf("Object count: %d\n", get\_object\_count(0));

int obj\_x = get\_object\_center\_x(0,0);

int obj\_y = get\_object\_center\_y(0,0);

//object is at the center, go straight

if (obj\_x > 70 && obj\_x< 80)

{

go\_straight();

printf("Object position: %d %d\n", obj\_x, obj\_y);

if(obj\_y >= 90)

{

set\_servo\_position(0, 1024);

set\_servo\_position(1, 1024);

}

else

{

set\_servo\_position(0, 0);

set\_servo\_position(1, 2047);

}

}

//object is on the right, turn right

else if (obj\_x > 100)

{

turn\_right();

printf("Object position: %d %d\n", obj\_x, obj\_y);

}

//object is on the left, turn left

else if (obj\_x < 50)

{

turn\_left();

printf("Object position: %d %d\n", obj\_x, obj\_y);

}

}

camera\_close();

return 0;

}

**Description**

For the second part of the lab, we have decided to include the behavior of lifting the ball with a bulldozer shovel after successfully approaching it. The bulldozer is powered by 2 servo motors and is made of paper, tape, and 2 popsicle sticks.