

ROBOTICS SOCIETY OF SOUTHERN CALIFORNIA

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Yahoo RSSC Group (<https://groups.yahoo.com/neo/groups/RSSC-list/info>) **Clean The Room Contest Rules (Draft May 2018)**

The RSSC “Clean The Room” contest demonstrates a useful and practical task for a robot to perform autonomously. The goal is for the robot to clean a room by **discarding 3 empty soda pop cans into the trash**. Contest will take place in a designated area that represents a small room that is 6 foot by 6 foot in size. The 6 foot square room is outlined with black (or white) electrical tape on the brown classroom floor (let Bob Huss know ahead of time if you need a white floor - maybe we can accommodate this). See attached picture. This 6 foot by 6 foot room has 3 colors of soda cans randomly placed, which need to be collected and disposed of, into the trash can. **Contestants can bring their own modified soda cans or may use standard soda pop cans which are red, blue and green.** 3 color soda cans will be provided, but might not work with your color sensors, so bringing your own cans is recommended. Since manufactured cans have multiple colors which are harder to identify, using unmodified cans will count for extra points, if the robot does correctly identify each color. The contestant can choose one of 2 choices for their trash can, either an outline of a 8 ½ by 11 inch box (made with electrical tape on a white sheet of paper) in the corner of the room or a real trash can, which can have reflectors or colors on its side, and can be provided by the contestant if he/she wishes. QR codes can be used. For the contest, each color of the soda can is identified by the robot (in no particular order) and is either tossed, pushed, or dragged into the trash can or the marked trash box outline. Any type of autonomous robot is welcome to participate in this event. Robot can go outside of the 6 foot box if it is part of its routine or is needed for its turning radius.

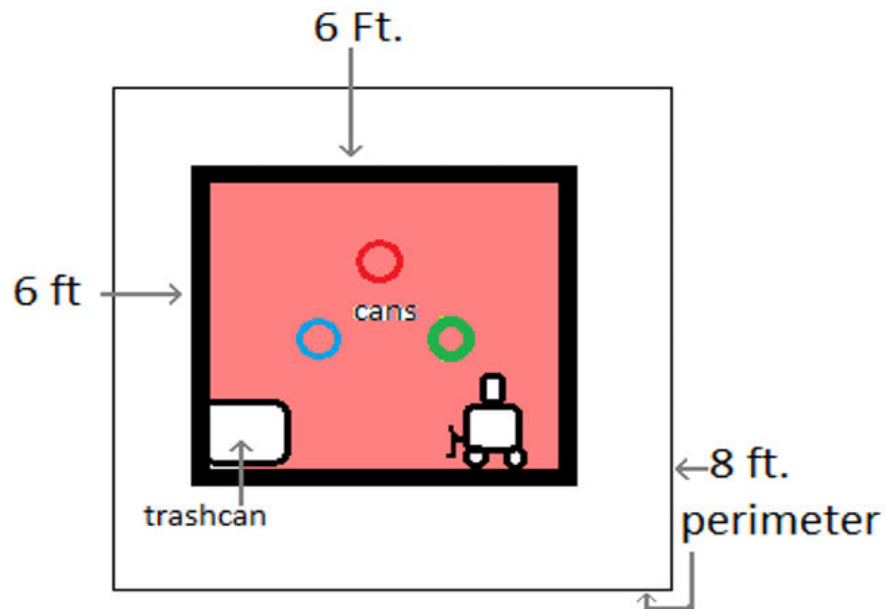
Advanced setup:

Using the brown tile floor in the classroom, a 6 foot square box made of black (or white) electrical tape will define a contest room’s outline. This “room” will have a minimum of a 2 foot perimeter zone around it, so that Ultrasonic or IR sensors will have a maximum range to search, so as not to be confused with a wall or human standing 9 feet away. A trash can “area” will be designated by a white piece of paper, secured by ¾” black electrical tape. Soda cans are placed randomly by a non-contestant, approximately 1 foot apart near the center of the 6 foot square “room”. At the start of the contest, the robot can be placed anywhere within the room, but at least 2 foot away from the first soda can that it will attempt to throw out.

Judging the Contest (use score sheet below)

- Observe that the robot detects the first can and disposes of it into the designated trash can. (20 points)
- The robot delivers a second can to the trashcan. (20 points)
- The robot delivers a third can to the trashcan. (20 points)
- Bonus points if the robot detects and communicates to the judges that the robot identified the correct color for each “modified” can. This might be demonstrated by flashing color LEDs, audible sounds, visual display etc. (10 points). And another (10 points) if the can color is not modified, and is a real manufactured soda can. (red, blue and green)
- Bonus points for robot automatically stopping when finished, signaling that the clean-up task is complete by flashing LEDs, or sound, or visual display. (10 points)
- Bonus points if robot actually “picks up and drops” cans into a real trash can provided by contestant as opposed to sliding can to the trash box outline. (20 points)
- As a tie breaker, the fastest robot to complete the task. (10 points)

- Time limit is 5 minutes, or until judges decide progress is not being made



CONTEST SCORE SHEET

CRITERIA	Name of robot	Name of robot	Name of robot	Name of robot
First can disposed of (20 pts.)				
Second can disposed of (20 pts.)				
Third can disposed of (20 pts.)				
Correct color identified (10 pts.)				
Non-modified cans (10 pts.)				
Automatically finishes Signal (10 pts.)				
Dropped in real trash can (20 pts.)				
Fastest Elapsed time (10pts.)				

Example of Contest
