Robotics Category- Challenge Overview- Finals

A hurricane has just devastated the island of St. Vincent and the Grenadines.

Participants are tasked to design, build, and program a robot to clean up after this natural disaster by collecting and sorting **trash(red objects)** and **recyclables (green objects)** into designated bins or receptacles. The field will be set up with scattered objects and obstacles, simulating a post-disaster environment. Obstacles are to be avoided when navigating to pick up the recyclables.

Final round- Robots will be remote controlled by participants during gameplay (this can be done using a phone, tablet or laptop as the controller). Students will be allotted 8 minutes to complete the challenge.

Scoring System (100 Points Total)

Criteria	Objective	Total Points	Scoring Detail
Object Collection & Sorting	Reward robots for successfully collecting and depositing 12 objects - Object should be carried by the robot (by lifting, pulling, pushing) without any external or human assistance to the start/end position of the track	60	+3 points for each item picked up and correctly sorted 2 special objects will be placed after 4 minutes have passed +12 points for each special object
Robot Design & Control	-Assess creativity, functionality, and structural integrity of the robot. • Creativity of robot build • Stability and Durability -Assess the ability of the participant to control robots efficiently.	25	+15 Points for use of non-standard design elements and for unique attachments for picking up or sorting objects. Does the robot remain functional after collisions? - Falls apart or loses key parts: -2 points. +10 points for robot control 0-2 points if basic motor control only 3-5 points if moderate motor control 5-10 points if advanced or perfect motor control.
Coding and Sensors	Determine if robot possesses the ability to sense colours RED and GREEN. Robot should identify both colours	15	+15 points for being able to identify both colours
Endgame Bonus	Provide extra points for any additional tasks.	10	Participants have the opportunity to score additional points by demonstrating to the judges that the robot was programmed to perform an additional task outside of what was outlined in the challenge

NOTE: To ensure fairness, we remove extreme scores that are significantly different from the rest. If a judge's score is 15 points higher or lower than the average of the other judges' scores, it will be
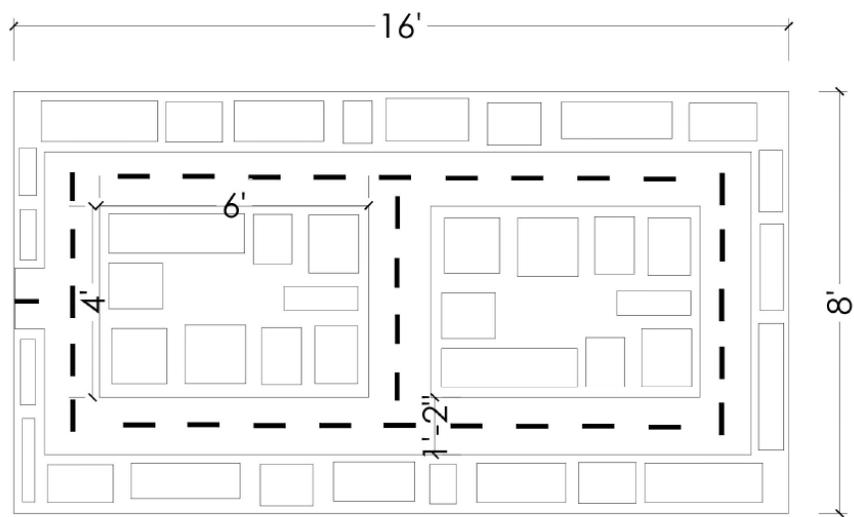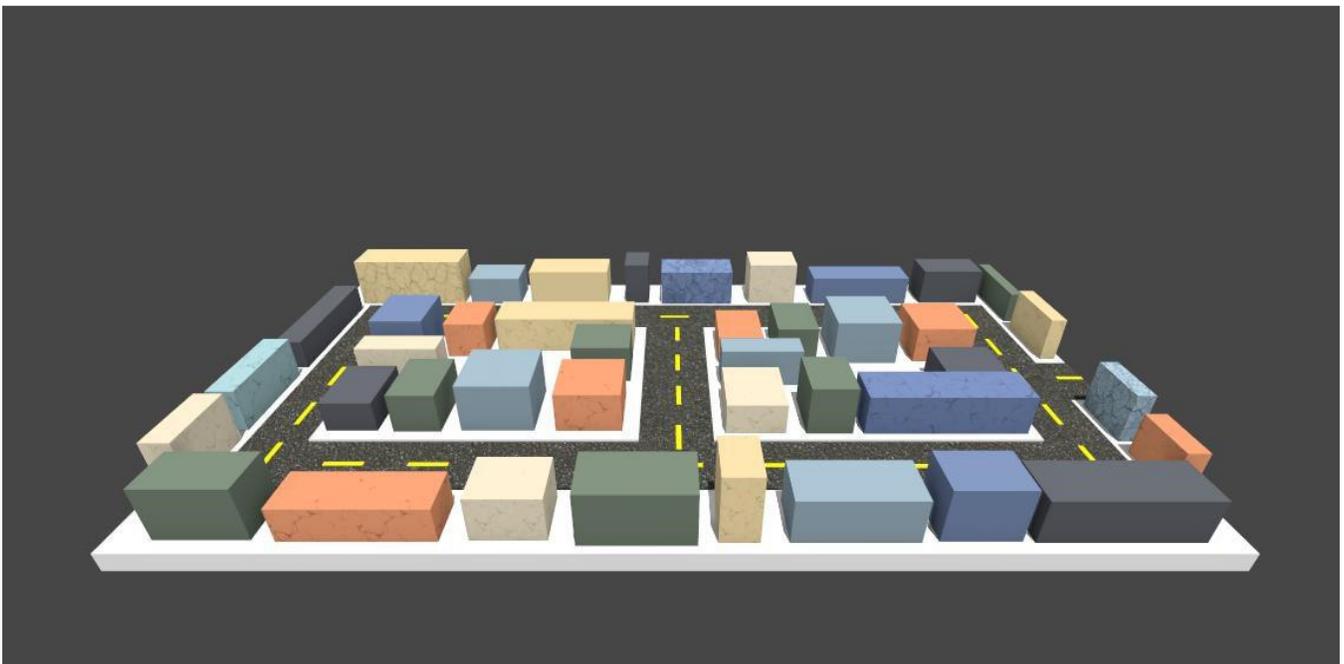
Example:

If most judges give a score between 70 and 80, but one judge gives a 95 or a 55, that score will be removed before calculating the final average. This helps prevent any unusually high or low score from unfairly impacting the results.

Winning Criteria

- **Highest total score wins.**
- In case of a tie, a tie breaker will be issued. Priority is given to:

   1. **Fastest completion time in task completion.**

Track Render

FLOOR PLAN - NOT TO SCALE