

## GARBAGE SORTER

### Introduction

*“Talent wins games. But teamwork and intelligence wins championships”*



Sound is produced only when both the hands are joined together by clapping. Like the same way, Teamwork is required among humans to create a victory.

### What will happen when robots work together??

The ability to multi-tasking and helping arises only by teamwork. The event is designed to build a multi-tasking robot which can help each other in completing a specific tasks assigned to it. This creates connectivity among human thoughts and critical thinking to survive!

### Problem statement

- Build a robot which will keep the place clean. The bots should be capable of picking up garbage in one place and placing it in a Trash container/garbage region placed at another place. Young scientists want to sort according to biodegradable and non- biodegradable waste.

## Event format

The event consists of two rounds.

### Round 1

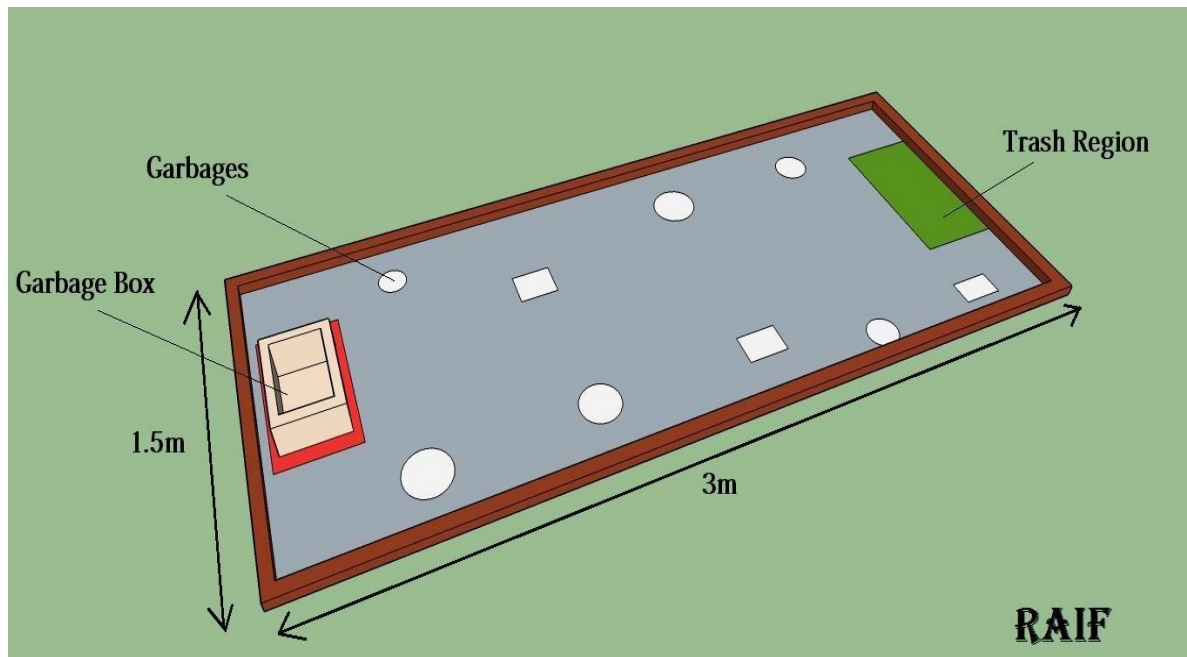
- The round 1 will be the Qualifiers.
- The teams are required to bring a pick and place robot.
- The robot should push/pick the garbage and put into the Trash container of size 20x15x10 cm.
- BFS (Built from scratch) and RMK (ready-made kits) can participate. All brands of kits can compete in the Robotz Games Categories.
- Those robots which collect the maximum garbage and place it in the trash container will be qualified for the next round.
- The garbage may be in the shape of a ball, egg, cylinder or any geometrical shapes. Each shape and item has individual points as mentioned below.
  - Eraser – 30 points
  - Egg shaped object – 100 points
  - Pencil – 40 points
  - Sharpener – 20 points
  - Wooden blocks(small) – 35 points
  - Small sand filled bottle(1/2 L) – 100 points(e.g., Pepsi half litre bottle)
  - Geometry box – 90 points
  - Dusters – 50 points
- Updated LOG BOOK should be brought along with the robot at the instant of the competition which will add you credits. Improper logbook details leads to disqualification.

>The winning team will be selected for the finals <

### Venue:

Regional/Zonal centre near you. Students will be informed for their zonal centre.

### Schematic arenas: (Arena dimensions are subject should change)



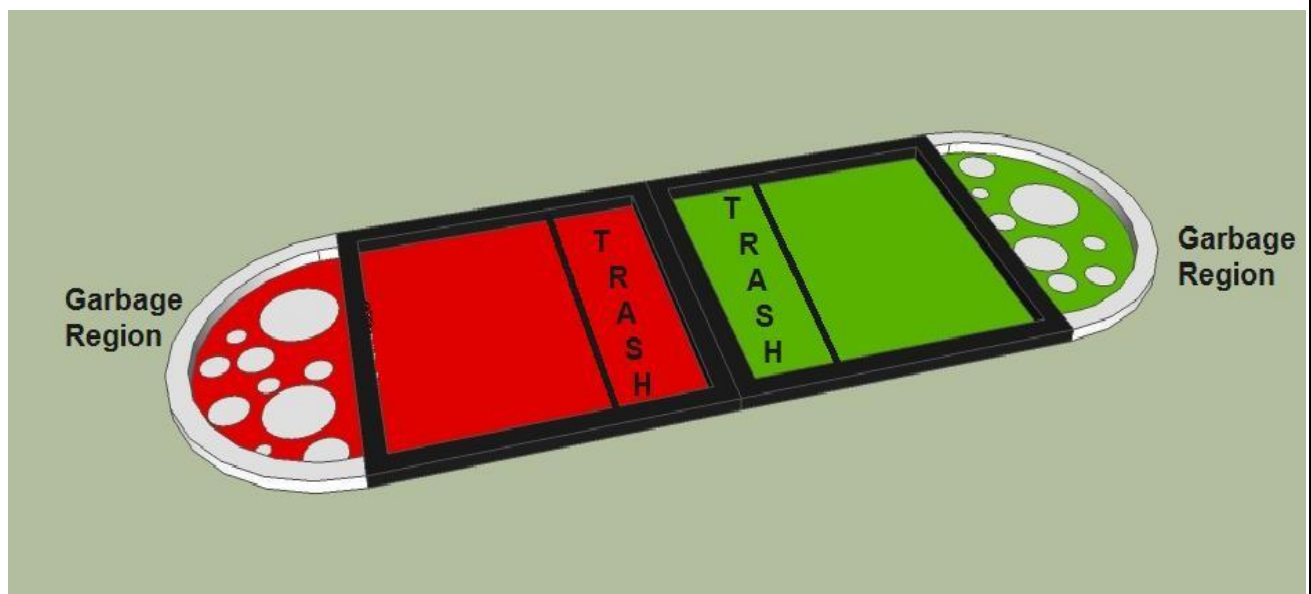
### Round 2

- The round 2 will be the finals.
- In this event, the bot will be collecting the garbage from the arena and dropping in into the respective trash regions. That is, the waste must be sorted into bio degradable and non-biodegradable materials.
- The trash region will be elevated to a height of 50cm from the ground level.
- The robot should be capable of extending up to a certain height to drop the garbage into the trash area.
- Any type of extension mechanism can be used.
- BFS (Built from scratch) and RMK (ready-made kits) can participate. All brands of KITS can compete.
- The bot can be wired or wireless. If wireless is used, it should have a dual frequency.

- The game will be ended after 10 minutes.
- The team which gets highest point by dropping the garbage to the trash zone will be the winner.
- Other specific rules will be announced during the event.
- Regions will be marked for each type of garbage inside the trash zone. Full points will be awarded for dropping the garbage at the allotted region and half the points will be awarded for dropping the garbage at any other region inside the trash region.
- Updated LOG BOOK should be brought along with the robot at the instant of the competition which will add you credits. Improper logbook details leads to disqualification.

### Schematic arena:

Trash height is of 50cm from the ground level



### Rules and specification

- The bot should fit into a box of dimension 30cmx30cm.
- The robots can extend in any direction to any amount after the match starts.

- The individual weights of the bot should not exceed 5 kg.
- The battery for each robot should be on-board and no external source should be used.
- The potential difference between any two points in the bot should not exceed 12V.
- The robots can be wired or wireless. In case of wireless, the participants should have dual frequency for each to avoid frequency clashing in the second round.
- In Case of wired bot the wires should be at least 5 m long and should remain slack throughout the game.
- Robots must not use ready-made mechanisms. However readymade gear assemblies can be used.
- No part of the robot must damage the arena; violation of this could lead to disqualification.
- If any of the robots fail to satisfy the above criteria, the team will be disqualified.
- The teams should consist of 5 members and should have a valid Id-card.
- Team should have a “Team name” (a unique name to be validated from the robotzindia.com site), “Logo” for your team name.
- The participants of RobotzIndia v4.0 competition can compete with the same “Team Name”
- A team should have a leader or a spokesperson to interact with media, RAIF and other audience.
- Any kind of permanent damage to the arena / stage will not be entertained, and if done, the robot will be immediately disqualified. The participant has to compensate for the damage caused.
- Bring cleaning equipments to clean any spills on the arena / stage.
- **Students should bring Valid ID cards** for each round, otherwise, leads to disqualification.
- Judges decision will be the final.
- **The sample report and logbook sample pages are available in the DOWNLOAD section of the RobotzIndia website.**



## Contact

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