



ROBO FOOTBALL

Introduction:

“People who work together will win, whether it be against complex football defenses, or the problems of modern society.”



Are you a football enthusiast? Are you fond of robots? What if robots play football?

Have you ever wondered about Ronaldo! How about depicting him by using robots??

Curious!!

Here is your chance of creating your football robots and compete with the opponents and win.

Problem statement

- Build 2 robots which is capable of defending and kicking a ball. It should be able to defend the opponent robot and score goals in the provided Football arena. One should control the Robot tactically that it can withstand the opponent and score maximum number of goals. Another must defend the ball of the opponent team.

Event format

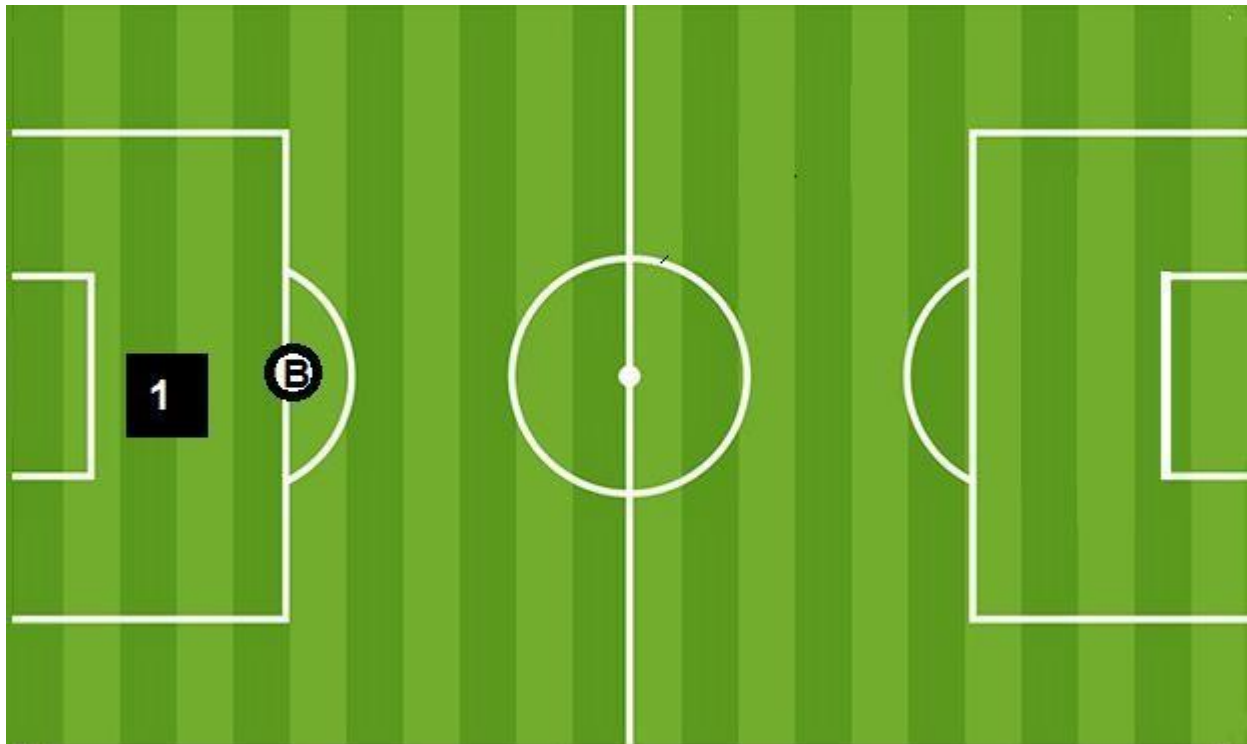
The event consists of 2 rounds.

ROUND 1:

- The round 1 will be Qualifier.
- The selected teams will be asked to **bring both the bots, Defender bot and Kicker and pusher bot.**
- During a penalty the defending team has to remove all the robots from the arena and the attacking will have the ball inside their (shooting team) penalty box and will be given a time of 15 seconds to score their penalty. The attacking team has to dribble the ball from their box to the opponent's side and should score from outside the opponent's penalty box.
- The gameplay is reversed for the opponent's team.
- One trial will be given to each team to kick the ball before the game starts. Trials are not applicable to defender bot.
- **BFS (Built from scratch) and RMK (ready-made kits) can participate. All brands of kit is allowed.**
- **The ready-made kit robot will compete mostly with the other ready- made kit robot only.**
- Points will be allotted based on the goals kicked.
- The bots can be wired or wireless controlled. If it is wireless, it should have a dual frequency.
- If wired, the length of the wire should be 2m to 5m.
- Batteries can be onboard if convenient alone.
- The voltage at any point on the bot should not exceed 12v. The supply can be A.C/D.C based on your requirement.
- **Updated LOG BOOK should be brought along with the robot at the instant of the competition which will add you credits. Improper logbook details will lead to disqualification.**
- Judges decision will be the final.

Venue: Regional / Zonal center near you. Students will be informed for their zonal centers.

Schematic Arena:



ROUND 2:

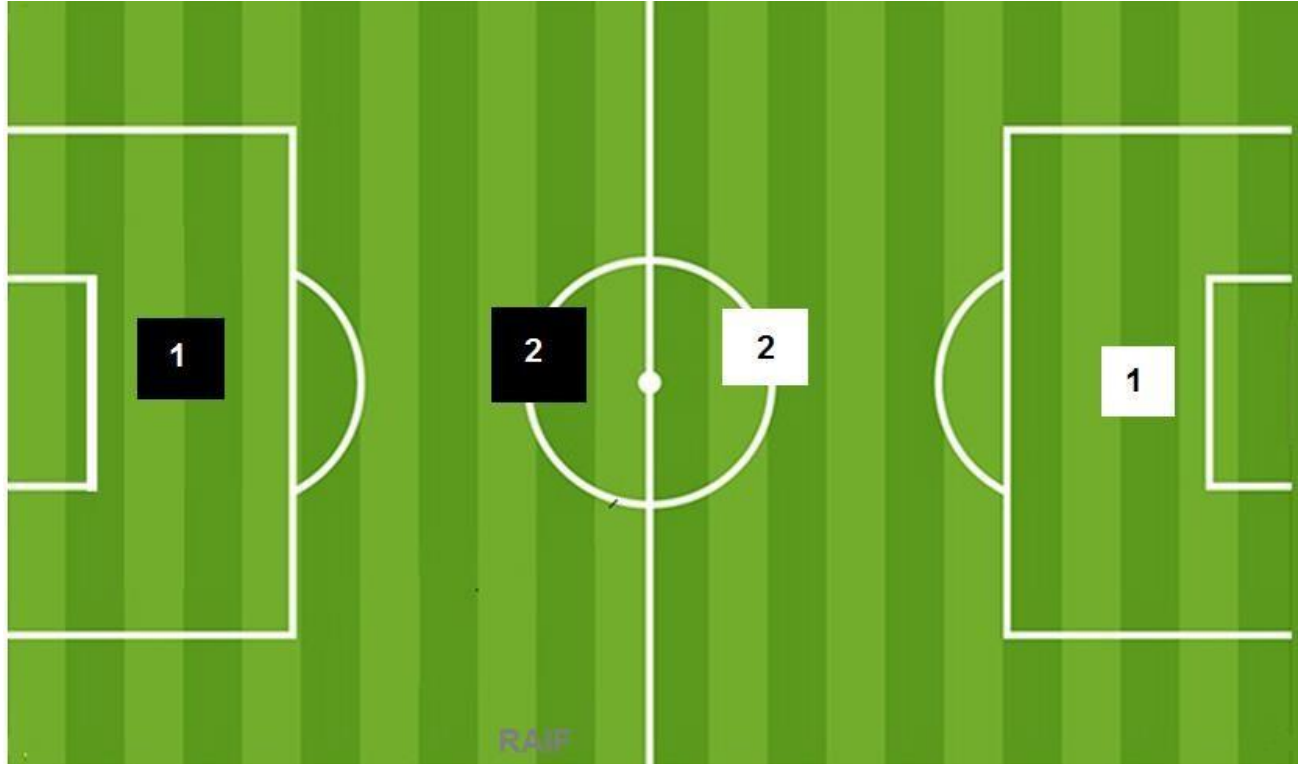
- The game will be played like a typical 2 on 2 football match.
- The game will be played for 5 minutes in total and will be divided into two halves of 2 and half minutes each. There will be a 30second half time break between the two halves.
- The game clock will run for the duration of the halves without stopping (except if or when a referee wants to consult an official)
- The game clock will be run by a referee or a referee assistant.
- Teams are supposed to be at their arena 5 minutes before their game starts. To be at the inspection table does not count in favor of this time limit. Teams can be penalized one goal per 2 minutes at the referee's discretion if they are late for the game start. If a team does not report within 5 minutes of the game start, it forfeits the game and the opponent team is awarded a 3-0 win.

- The game will start with a toss by the referee. The team mentioned first in the draw shall call the toss. The team which wins the toss shall decide either which end to defend or to kick off.
- After the first half the teams will switch sides.
- Each half of the game begins with a kick-off. All robots must be located on their own side of the field. All robots must be halted. The ball is positioned by a referee in the center of the field.
- The team kicking off places their robots on the field first. Robots cannot be placed nor remain behind the goal line or in the outer area. Robots cannot be repositioned once they have been placed.
- The team not kicking off should place their robots outside the kick off circle.
- The robots should start or halt only at the whistle of the referee. The referee's decision is treated as final.
- A robot cannot hold a ball for more than 3 seconds at a stationary position.
- Touching the robots during game play will be treated as a foul and a free kick or a penalty will be awarded to the opponent depending on the position of the robots. The game play time can be stopped only by the referee or referee assistant (time keeper).
- A goal is scored when the ball completely crosses the goal line. Partial crossing will not be treated as a goal.
- The robot moving first into the penalty area on a team's defending side completely (with every part of it) is designated as goalie until the end of the match. No other defending robot can touch the ball inside the penalty box.
- Within the penalty area, the goalie has priority. Attacking robots are not supposed to push the goalie in any way. If a goal is scored as a result of this pushed-situation, it will not be granted.
- Typical lack of progress situations are when the ball is stuck between robots, when there is no change in ball and robot's positions, the robot runs over the ball, or when the ball is beyond reach capability of all robots on the field. After a visible and loud count, a referee will call "lack of progress" and will move the ball to the nearest unoccupied neutral spot. If this does not solve the lack of progress, the referee can move the ball to different neutral spots.

- The ball can leave and bounce back into the playing field. The referee calls “out of reach”, and will move the ball to the nearest unoccupied neutral spot when one of the following conditions occurs:
 - The ball remains outside the playing field too long,
 - Any of the robots are unable to return it into the playing field (without their whole body leaving the playing field)
 - The referee determines that the ball will not come back into the playing field.
- If a robot is damaged, it has to be taken off the field and must be fixed before it can play again. A damaged robot must remain off the field for at least 30 seconds. The game play will not be stopped during repair.
- A robot is damaged especially when:
 - It is not able to move (it lost pieces, power, etc.).
 - It turns over on its own accord
 - Falls off the arena.
- If 2 robots from the same team are damaged during gameplay, the clock continues and the remaining team gets one initial goal and rests while waiting for the opponent's return to play. If the damaged robots do not return within 2 minutes then the remaining teams gets a straight 5-0 win.
- Computers and repair equipment are not permitted in the playing area during gameplay. Usually, a team member will need to take the damaged robot to an “approved repair table” near the playing area, located inside the competitors working area.
- Only the referee decides whether a robot is damaged. A robot can only be taken off or returned with the referee’s permission.
- Multiple defenses occur if more than one robot from the defending team enters its penalty area with some part and substantially affects the game. The robot farther from the ball will be moved to the center neutral spot.
- A referee can stop the game if there is a situation on or around the field which the referee wants to discuss with an official of the tournament or if the ball is lost and a replacement is not readily available.
- When the referee has stopped the game, all robots must be stopped and remain on the field untouched. The referee may decide whether the game will be continued/resumed from the situation in which the game was stopped or by a kick-off.
- There will be no throw-ins, corners or goal kicks as the sides are plywood walls.

- If a foul is committed outside the penalty box then a free kick will be awarded to the opponent. A penalty will be awarded to the attacking team if the defending team commits a foul in the penalty box.
- During a penalty the defending team has to remove all the robots from the arena and the attacking will have the ball inside their (shooting team) penalty box and will be given a time of 15 seconds to score their penalty. The attacking team has to dribble the ball from their box to the opponent's side and should score from outside the opponent's penalty box.
- A foul is declared in the following situations
 - If a robot runs over the opponent.
 - If a defender robot other than the goalie robot touches the ball inside the penalty box.
 - If the goalie touches the ball outside the penalty box.
 - If the attacker robot pushes the goalie.
 - If one robot damages the other robot.
- The referee can also give a yellow or red card depending upon the severity of the foul committed.
- If the game ends in a nil-nil draw, the winner will be decided by a penalty shoot-out.
- Stoppage time will be compensated at the end of both the halves.
- It is important to note than any argument with the referee or with the opponents will lead to a red card.
- **BFS (Built from scratch) and RMK (ready-made kits) can participate. All brands of kit are allowed.**
- **The ready-made kit robot will compete mostly with the other ready- made kit robot only.**
- **Updated LOG BOOK should be brought along with the robot at the instant of the competition which will add you credits. Improper logbook details will lead to disqualification.**
- Judges decision will be the final.

Schematic Arena:



Rules and specification:

- The team should have a maximum of 5 members only. They should be from same schools with a valid ID cards. **Id card should be brought for each round for the event.**
- **The ball will be in the size of tennis ball for the two rounds.**
- The dimensions of both the robots at any point of time in the game should fit in a box of 30cmx30cmx30cm including its kicking mechanism. The weight of both the robots combined should not exceed 6 kg. Both wired and wireless robots are allowed.
- In case of wireless robots, each robot must be able to support dual frequency (2.4 and 5.8 Ghz) so that there is no interference with the opponent's robots.
- In the case of wired control, the participants must ensure that the wires out of a pole of height of at least 30cm.
- No direct use of remote controlled (wired or wireless) cars will be entertained.
- The robots should not hold the ball while moving. Dribbler mechanisms can be used.



- The ball can be dribbled and hit from any part of the robot.
- Batteries can be onboard if convenient alone.
- The voltage at any point on the bot should not exceed 12v. The supply can be A.C/D.C based on your requirement for all the 3 rounds.
- Unfair game may lead to disqualification of the team.
- Participants with wired robots are strictly advised to get wires of length 5m or more.
- 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.
- **The sample report and logbook sample pages are available in the DOWNLOAD section of the RobotzIndia website.**

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