

ROBOTHON

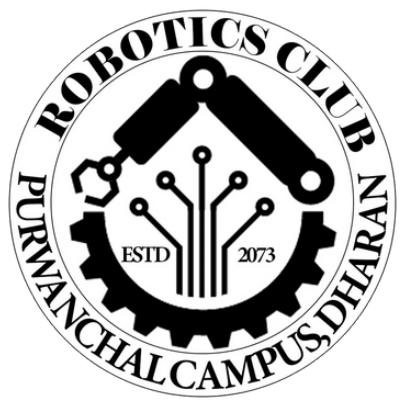
THE ULTIMATE MAZE-QUEST

RULE BOOK

Magh 18, 19 & 20

Precision in every turn—maze-solving mastered!





OVERVIEW

Robothon: The Ultimate Maze Quest is an electrifying head-to-head robotics competition where two participants race their robots through a mirrored maze. Starting from opposite ends, the robots must navigate autonomously to reach the central goal. The first robot to reach the goal wins, combining precision, speed, and strategy.

RULES AND GUIDELINES

ROBOT SPECIFICATIONS:

1. SIZE

- Maximum dimensions: 15 cm x 15 cm x 15 cm (Length x Width x Height).
- A tolerance of up to 5% (15.75 cm max in any dimension) is allowed.

2. WEIGHT

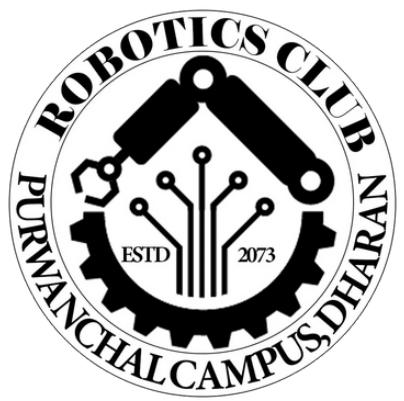
- No restrictions, provided the robot adheres to size requirements.

3. AUTONOMOUS FUNCTIONALITY

- Robots must be autonomous and capable of line-following and maze-solving.

4. POWER SOURCE

- Robots must be battery-powered, with no external power sources allowed during the match.



ARENA DETAILS:

LINE WIDTH:

- The maze lines are 2.5 cm - 3 cm wide, printed in black on a white flex sheet.

GAP BETWEEN PARALLEL LINES:

- A minimum gap of 15 cm exists between consecutive parallel lines in the maze, ensuring sufficient navigation space.

MAZE LAYOUT:

- The maze consists of two mirrored paths, one for each robot, with identical complexity.
- Robots start from opposite ends and race toward the shared central goal.

GAME RULES:

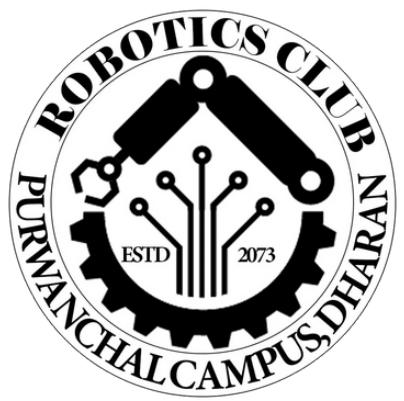
OBJECTIVE:

- Robots must autonomously navigate the maze and reach the central goal as quickly as possible.

STRUCTURE

1. Dry Run:

- Each team gets 5 minutes of dry run time to test their robot on the arena.
- Adjustments to programming and configurations are allowed during this period.
- Hard Coding is strictly prohibited; teams found violating this rule will be disqualified.
- Once the dry run is completed, no additional dry run time will be provided.
- 30 points are awarded if the robot successfully completes the dry run.



2. Head-to-Head Match:

- Two robots compete in a knockout format.
- The first robot to reach the goal wins the match.
- Points and time for each robot are calculated to determine the winner.
- The robot with the fastest time wins.
- In the event of a tie, the winner is decided based on the score acquired.

NEGATIVE MARKING:

DEVIATION PENALTY:

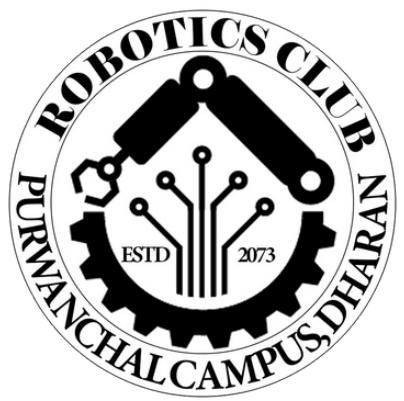
- If a robot deviates from the maze, it must return to its last valid position to continue.
- Each robot has 3 lives for the final game.
- Only one team member will be allowed in the arena for manual intervention.

MANUAL INTERVENTION PENALTY:

- If a participant manually touches the robot without the referee's signal: A -5 second time penalty will be applied. One life will be deducted.

TIMEOUT RULE:

- If neither robot completes the maze within 5 minutes, the robot closest to the goal will be declared the winner.



SCORING AND ELIMINATION:

POINTS SYSTEM:

- Checkpoints: 25 points for each checkpoint crossed (counted only once per checkpoint).
- Dry Run Completion: 30 points for successfully completing the dry run.
- Shortest Path: 30 points for completing the maze using the shortest path during the actual run.
- Completion Bonus: 50 points for the first robot to reach the goal.
- Fastest Time Bonus: 30 points for completing the maze in the shortest time.

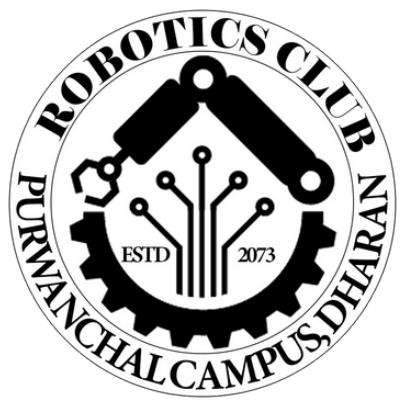
KNOCKOUT FORMAT:

- Matches follow a knockout structure, with winners advancing to the next round.
- The final round determines the overall champion.

ORGANIZER'S RIGHTS

The organizer reserves the right to:

- Modify the rules, arena design, or competition structure as necessary.
- Changes will be communicated to participants in advance.



PROHIBITED ACTIONS

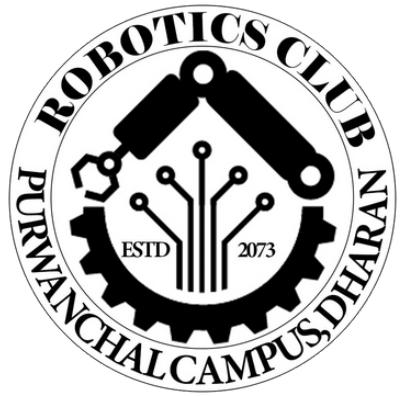
- Altering the robot's weight or configuration (e.g., removing a sensor array or switching to lighter batteries for speed).
- Participants are not allowed to use Ready-made Robo-bot kits. However, they can use self designed 3D printed parts to construct their bot.
- Code implemented on the bot shouldn't be extracted from any online sources.
- Participants are rather encouraged to write and implement their code from scratch.
- Participants violating these rules may face disqualification.

REFEREE'S ROLE

- The referee's decisions are final and binding for all matches.
- Participants must comply with the referee's instructions at all times.

PROHIBITED DEVICES

- Laptops, personal computers, or similar devices are not allowed near the arena.
- Wi-Fi, Bluetooth, and other communication devices must be turned off.
- Organizers reserve the right to inspect and disqualify teams found violating these rules.



PRIZE POOL

The prize pool worth of Rs. 80,000 including Rs. 20,000 worth of gift hamper will be distributed as follows:

- Winner: 50% of the total prize pool.
- 1st Runner-Up: 30% of the total prize pool.
- 2nd Runner-Up: 20% of the total prize pool.